Tennessee Valley Authority, Post Office Box 2000, Soddy-Daisy, Tennessee 37379-2000

July 11, 2001

State of Tennessee
Department of Environment and Conservation
Division of Water Pollution Control
401 Church Street, 6th Floor Annex
Nashville, Tennessee 37243-1534

Attention: Ms. Evelyn Haskin, Enforcement & Compliance

Dear Ms. Haskin:

TENNESSEE VALLEY AUTHORITY - DISCHARGE MONITORING REPORT HARD COPIES FOR SEQUOYAH NUCLEAR PLANT (SQN)

Please find enclosed the Second Quarter 2001 DMR for SQN.

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

Sincerely,

Diedre B. Nida

Diedre Nida
Environmental Supervisor
Sequoyah Nuclear Plant

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

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

IE25

Printed on recycled paper

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	101 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	04	01	To	01	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	22.6	(04)	0	30 / 30	MODELD
00010 Z 0 0 INSTREAM MONITORING	PERMIT REQUIREMENT	********	********	****	********	********	30.5 DAILY MX	DEG. C.		SEE PERMIT	CK REQ
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	33.2	(04)	0	30 / 30	RCORDR
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	REPORT DAILY MX	DEG. C.		SEE PERMIT	CK REQ
PH	SAMPLE MEASUREMENT	********	********	**	7.3	********	7.9	(12)	0	08 / 30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	3	4	(19)	0	04 / 30	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	<5	<5	(19)	0	04 / 30	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	********	1679	(03)	********	********	********	**	0	30 / 30	RCORDR
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	RCORDR
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********	0.019	(19)	0	43 / 30	GRAB
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.058 INST MAX	MG/L		WEEK-DAYS	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	05	11
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

No closed mode operation. The following injections occured: 1. PCL-222(max. calc. conc. was 0.058 mg/L--limit 0.100mg/L) 2. CL-363(max. calc. conc. was 0.006 mg/L--limit 0.100mg/L) 3. PCL-222/401 copolymer (max. conc. was 0.024mg/L- - limit 0.100mg/L)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

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SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	101 G

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
From	01	04	01	To	01	04	30

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

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PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE - C, RATE OF CHANGE	SAMPLE MEASUREMENT	********	********	**	********	********	1.2	(04)	0	30 / 30	CALCTD
82234 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0	DEG. C.			CALCTD
DELTA TEMPERATURE - C	SAMPLE MEASUREMENT	********	********	**	********	********	2.7	(04)	0	30 / 30	CALCTD
00016 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	3.0	DEG. C.			CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
BORON, TOTAL	SAMPLE MEASUREMENT	********	********	**	<0.2	<0.2	<0.2	(19)	0	01 / 30	GRAB
01022 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	REPORT	REPORT	REPORT	MG/L			GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

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COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here

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Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	103 G

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
From	01	04	01	To	01	04	30

MAJOR
(SUBR 01)
F - FINAL
LOW VOL. WASTE TREATMENT POND
EFFLUENT

*** NO DISCHARGE [ ] ***

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PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
PH	SAMPLE MEASUREMENT	********	********	**	6.5	********	9.0	(12)	0	11 / 30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	6.0 MINIMUM	********	9.0 MAXIMUM	SU		THREE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	90	142	(26)	********	11	15	(19)	0	04 / 30	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	380 MO AVG	1250 DAILY MX	LBS/DY	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	<40	<65	(26)	********	<5	<5	(19)	0	04 / 30	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	190 MO AVG	250 DAILY MX	LBS/DY	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	1.027	1.934	(03)	********	********	********	**	0	30 / 30	TOTAL
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	**		DAILY	TOTAL
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
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Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	107 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	04	01	To	01	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
METAL CLEANING WASTE POND
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
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PH	SAMPLE MEASUREMENT	********	********	**	7.5	********	8.4	(12)	0	06 / 30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		DAILY	GRAB
PHOSPHORUS, TOTAL (AS P)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00665 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********	10	(19)	0	06 / 30	COMP-8
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	30 DAILY MX	MG/L		DAILY	COMP-8
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	********	<5	(19)	0	06 / 30	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	15 DAILY MX	MG/L		DAILY	GRAB
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	********	********	**	********	********	<0.007	(19)	0	06 / 30	COMP-8
01042 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	********	********	**	********	********	0.620	(19)	0	06 / 30	COMP-8
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	0	0	(03)	********	********	********	**	0	06 / 30	CALCTD
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		DAILY	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN, AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	05	11
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

No phosphate bearing chemicals were employed. Due to rounding by the computer program,the flow values are not reflected.The flow monthly average was 0.040 MGD.The daily flow max. was 0.048 MGD.

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
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SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	110 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	04	01	To	01	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
RECYCLED COOLING WATER
EFFLUENT

*** NO DISCHARGE XX ***

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OMB No. 2040-0004
Approval expires 05-31-98

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PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********		(04)			
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	38.3 DAILY MX	DEG. C.		DAILY	GRAB-4
PH	SAMPLE MEASUREMENT	********	********	**		********		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.10 DAILY MX	MG/L		WEEKLY	GRAB-4
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319 (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	05	11
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*
No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY IN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	112 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	04	01	To	01	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
SEWAGE TREATMENT PLANT
EFFLUENT

*** NO DISCHARGE XX ***

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BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		TWICE/ WEEK	GRAB
COLIFORM, FECAL MF, M-FC BROTH, 44.5C	SAMPLE MEASUREMENT	********	********	**	********			(13)			
31616 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	********	200 ARI MEAN	1000 DAILY MX	#/100 ML		TWICE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	TOTALZ
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0 INST MAX	MG/L		WEEK-DAYS	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

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TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Sewage flow has been diverted from this system since January, 1998. DSN-112 is now in stand-by status. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	118 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	04	01	To	01	04	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
WASTEWATER & STORM WATER
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OXYGEN, DISSOLVED (DO)	SAMPLE MEASUREMENT	********	********	**		********	********	(19)			
00300 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	2.0 DAILY MN	********	********	MG/L		TWICE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	100 DAILY MX	MG/L		TWICE/ WEEK	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	*		ONCE/ BATCH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	05	11
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

During this reporting period, there has been no flow from the Dredge Pond other than that resulting from rainfall. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY IN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	101 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	26.4	(04)	0	31 / 31	MODELD
00010 Z 0 0 INSTREAM MONITORING	PERMIT REQUIREMENT	********	********	****	********	********	30.5 DAILY MX	DEG. C.		SEE PERMIT	CK REQ
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	38.0	(04)	0	31 / 31	RCORDR
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	REPORT DAILY MX	DEG. C.		SEE PERMIT	CK REQ
PH	SAMPLE MEASUREMENT	********	********	**	7.1	********	7.3	(12)	0	10 / 31	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	<3	6	(19)	0	05 / 31	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	<5	<5	(19)	0	05 / 31	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	********	1727	(03)	********	********	********	**	0	31 / 31	RCORDR
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	RCORDR
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********	0.021	(19)	0	42 / 31	GRAB
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.058 INST MAX	MG/L		WEEK-DAYS	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

No closed mode operation. The following injections occured: 1. PCL-222(max. calc. conc. was 0.055mg/L--limit 0.100mg/L) 2. CL-363(max. calc. conc. was 0.007 mg/L--limit 0.100mg/L) 3.PCL-222/PCL 401(max. calc. conc. was 0.019mg/L --limit 0.100mg/L).Toxicity sampling was begun 5/30/01, the results will be reported in the quarterly report.

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	101 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE ☐ ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE - C, RATE OF CHANGE	SAMPLE MEASUREMENT	********	********	**	********	********	1.7	(04)	0	31 / 31	CALCTD
82234 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0	DEG. C.			CALCTD
DELTA TEMPERATURE - C	SAMPLE MEASUREMENT	********	********	**	********	********	2.0	(04)	0	31 / 31	CALCTD
00016 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	3.0	DEG. C.			CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
BORON, TOTAL	SAMPLE MEASUREMENT	********	********	**	<0.2	<0.2	<0.2	(19)	0	01 / 31	GRAB
01022 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	REPORT	REPORT	REPORT	MG/L			GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

(2-16)	(17-19)
TN0026450	103 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
LOW VOL. WASTE TREATMENT POND
EFFLUENT
*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
PH	SAMPLE MEASUREMENT	********	********	**	6.8	********	8.5	(12)	0	13 / 31	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	6.0 MINIMUM	********	9.0 MAXIMUM	SU		THREE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	31	76	(26)	********	5	8	(19)	0	05 / 31	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	380 MO AVG	1250 DAILY MX	LBS/DY	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	<34	<51	(26)	********	<5	<5	(19)	0	05 / 31	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	190 MO AVG	250 DAILY MX	LBS/DY	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	1.009	1.270	(03)	********	********	********	**	0	31 / 31	TOTAL
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	**		DAILY	TOTAL
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	107 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
METAL CLEANING WASTE POND
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
PH	SAMPLE MEASUREMENT	********	********	**		********		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		DAILY	GRAB
PHOSPHORUS, TOTAL (AS P)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00665 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	30 DAILY MX	MG/L		DAILY	COMP-8
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	15 DAILY MX	MG/L		DAILY	GRAB
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
01042 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		DAILY	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

No phosphate bearing chemicals were employed. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	110 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
RECYCLED COOLING WATER
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********		(04)			
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	38.3 DAILY MX	DEG. C.		DAILY	GRAB-4
PH	SAMPLE MEASUREMENT	********	********	**		********		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.10 DAILY MX	MG/L		WEEKLY	GRAB-4
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Richard T. Purcell

Site Vice President

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319 (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

Diedre B. Nida
Environmental Supervisor

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
423	843-6700	01	06	14
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	112 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
SEWAGE TREATMENT PLANT
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		TWICE/ WEEK	GRAB
COLIFORM, FECAL MF, M-FC BROTH, 44.5C	SAMPLE MEASUREMENT	********	********	**	********			(13)			
31616 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	********	200 ARI MEAN	1000 DAILY MX	#/100 ML		TWICE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	TOTALZ
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0 INST MAX	MG/L		WEEK-DAYS	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

Sewage flow has been diverted from this system since January, 1998. DSN-112 is now in stand-by status. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	118 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	05	01	To	01	05	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
WASTEWATER & STORM WATER
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OXYGEN, DISSOLVED (DO)	SAMPLE MEASUREMENT	********	********	**		********	********	(19)			
00300 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	2.0 DAILY MN	********	********	MG/L		TWICE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	100 DAILY MX	MG/L		TWICE/ WEEK	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	*		ONCE/ BATCH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	06	14
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

During this reporting period, there has been no flow from the Dredge Pond other than that resulting from rainfall. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	101 G

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
From	01	06	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	29.4	(04)	0	30 / 30	MODELD
00010 Z 0 0 INSTREAM MONITORING	PERMIT REQUIREMENT	********	********	****	********	********	30.5 DAILY MX	DEG. C.		SEE PERMIT	CK REQ
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********	41.4	(04)	0	30 / 30	RCORDR
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	REPORT DAILY MX	DEG. C.		SEE PERMIT	CK REQ
PH	SAMPLE MEASUREMENT	********	********	**	7.1	********	7.4	(12)	0	08 / 30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	4	5	(19)	0	04 / 30	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	<5	<5	(19)	0	05 / 30	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	********	1762	(03)	********	********	********	**	0	30 / 30	RCORDR
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	RCORDR
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********	0.034	(19)	0	49 / 30	GRAB
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.058 INST MAX	MG/L		WEEK-DAYS	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE		
Richard T. Purcell Site Vice President TYPED OR PRINTED	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	423 AREA CODE	843-6700 NUMBER	01 YEAR	07 MO	12 DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

No closed mode operation. The following injections occured: 1. PCL-222(max. calc. conc. was 0.068 mg/L--limit 0.100mg/L) 2. CL-363(max. calc. conc. was 0.007 mg/L--limit 0.100mg/L) 3. PCL-222/PCL-401(max. calc conc.was 0.023mg/L--limit 0.100mg/L. 4. H-130M(max. calc. conc. was 0.019 mg/L--limit 0.050mg/L)

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	101 G

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
From	01	06	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE - C, RATE OF CHANGE	SAMPLE MEASUREMENT	********	********	**	********	********	1.3	(04)	0	30 / 30	CALCTD
82234 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0	DEG. C.			CALCTD
DELTA TEMPERATURE - C	SAMPLE MEASUREMENT	********	********	**	********	********	2.1	(04)	0	30 / 30	CALCTD
00016 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	3.0	DEG. C.			CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
BORON, TOTAL	SAMPLE MEASUREMENT	********	********	**	<0.2	<0.2	<0.2	(19)	0	01 / 30	GRAB
01022 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	REPORT	REPORT	REPORT	MG/L			GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President TYPED OR PRINTED	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	423	843-6700	01	07	12
			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*

CCW analysis attached.

CCW CHANNEL RESULTS

DATE	DIESEL RANGE ORGANIC (mg/L)	TOTAL WATER HYDROCARBONS (mg/L)	COMMENTS
04/11/01	< 0.1	< 1	
04/25/01	< 0.1	< 1	
05/09/01	< 0.1	< 1	
05/23/01	< 0.1	< 1	
06/06/01	< 0.1	< 1	
06/20/01	< 0.1	< 1	

TRENCH DISCHARGE EFFLUENT RESULTS

DATE	DIESEL RANGE ORGANIC (mg/L)	TOTAL WATER HYDROCARBONS (mg/L)	COMMENTS
04/11/01	0.4	< 1	
04/25/01	0.2	< 1	
05/09/01	0.2	< 1	
05/23/01	0.60	< 1	
06/06/01	0.34	< 1	The initial test results for DRO from the ground water effluent sample showed 26 mg/L. This result was way out of line with test results over the last several years. Therefore the back up sample was sent to the water quality lab. for analysis. The backup test results for DRO came back 0.34 mg/L which is in the normal range for effluent from the trench discharge. Extraction well 4 was also sampled on the same day. The result for DRO test was 2.3 mg/L which is very low for extraction well 4 but in the normal range for effluent from the trench discharge. No back up sample was taken for extraction well 4. It appears that at some point either during the sampling or analysis the sample were swapped resulting in the high results for the trench effluent and the low results for extraction well 4. Because of this apparent mix up I am swapping the results from extraction well 4 and the trench effluent results. I am also including both the trench effluent results.
06/06/01	2.3		
06/20/01	< 0.1	< 1	

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	101 T

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
From	01	01	01	To	01	06	30

MAJOR
(SUBR 01)
F - FINAL
BI YEARLY MONITORING
EFFLUENT

*** NO DISCHARGE ☐ ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
LC50 STATRE 96HR ACU CERIODAPHNIA	SAMPLE MEASUREMENT	********	********	(23)	>100	********	********	(23)	0	01 / 181	GRAB
TAN3B 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	PERCENT	100 MINIMUM	********	********	PERCENT		SEMI-ANNUAL	GRAB
LC50 STATRE 96HR ACU PIMEPHALES	SAMPLE MEASUREMENT	********	********	(23)	>100	********	********	(23)	0	01 / 181	GRAB
TAN6C 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	PERCENT	100 MINIMUM	********	********	PERCENT		SEMI-ANNUAL	GRAB
NOEC STATRE 4DAY CHR CERIODAPHNIA	SAMPLE MEASUREMENT	********	********	(23)	>100.00	********	********	(23)	0	01 / 181	GRAB
TBO3B 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	PERCENT	48.98 MINIMUM	********	********	PERCENT		SEMI-ANNUAL	GRAB
NOEC STATRE 4DAY CHR PIMEPHALES	SAMPLE MEASUREMENT	********	********	(23)	>100.00	********	********	(23)	0	01 / 181	GRAB
TBO6C 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	PERCENT	48.98 MINIMUM	********	********	PERCENT		SEMI-ANNUAL	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Richard T. Purcell

Site Vice President

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

Diedre B. Nida
Environmental Supervisor

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
423	843-6700	01	07	12
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Toxicity sampling performed 5/30/01 to 6/05/01.

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

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Address BOX 2000
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Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	101 Y
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	00	07	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
DIFFUSER DISCHARGE
EFFLUENT

*** NO DISCHARGE [ ] ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

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PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
POLYCHLORINATED BIPHENYLS	SAMPLE MEASUREMENT	********	********	**	********	********	0.0	(19)	0	01 / 365	
39521 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.0	MG/L			
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U S C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	07	12
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	103 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	06	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
LOW VOL. WASTE TREATMENT POND
EFFLUENT

*** NO DISCHARGE ☐

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
PH	SAMPLE MEASUREMENT	********	********	**	7.2	********	8.6	(12)	0	13 / 30	GRAB
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	6.0 MINIMUM	********	9.0 MAXIMUM	SU		THREE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	42	110	(26)	********	8	12	(19)	0	04 / 30	GRAB
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	380 MO AVG	1250 DAILY MX	LBS/DY	********	30 MO AVG	100 DAILY MX	MG/L		WEEKLY	GRAB
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	<27	<61	(26)	********	<5	<5	(19)	0	04 / 30	GRAB
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	190 MO AVG	250 DAILY MX	LBS/DY	********	15 MO AVG	20 DAILY MX	MG/L		WEEKLY	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT	0.860	1.464	(03)	********	********	********	**	0	30 / 30	TOTAL
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	**		DAILY	TOTAL
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	07	12
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16)	(17-19)
TN0026450	107 G
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
From	01	06	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
METAL CLEANING WASTE POND
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
PH	SAMPLE MEASUREMENT	********	********	**		********		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		DAILY	GRAB
PHOSPHORUS, TOTAL (AS P)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00665 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	30 DAILY MX	MG/L		DAILY	COMP-8
OIL & GREASE FREON EXTR-GRAV METH	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00556 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	15 DAILY MX	MG/L		DAILY	GRAB
COPPER, TOTAL (AS CU)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
01042 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
IRON, TOTAL (AS FE)	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
01045 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		DAILY	COMP-8
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		DAILY	CALCTD

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	07	12
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

No phosphate bearing chemicals were employed. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	110 G

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
From	01	06	01	To	01	06	30

MAJOR
(SUBR 01)
F - FINAL
RECYCLED COOLING WATER
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
TEMPERATURE, WATER DEG. CENTIGRADE	SAMPLE MEASUREMENT	********	********	**	********	********		(04)			
00010 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	38.3 DAILY MX	DEG. C.		DAILY	GRAB-4
PH	SAMPLE MEASUREMENT	********	********	**		********		(12)			
00400 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	6.0 MINIMUM	********	9.0 MAXIMUM	SU		WEEKLY	GRAB
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	0.10 DAILY MX	MG/L		WEEKLY	GRAB-4
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER
Richard T. Purcell
Site Vice President
TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)

Diedre B. Nida
Environmental Supervisor
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
423	843-6700	01	07	12
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here*
No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	112 G

MONITORING PERIOD

	YEAR (20-21)	MO (22-23)	DAY (24-25)		YEAR (26-27)	MO (28-29)	DAY (30-31)
From	01	06	01	To	01	06	30

MAJOR
(SUBR 01)
F - FINAL
SEWAGE TREATMENT PLANT
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		QUANTITY OR LOADING (3 Card Only) AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	QUALITY OR CONCENTRATION (4 Card Only) MINIMUM (38-45)	AVERAGE (46-53)	MAXIMUM (54-61)	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
BOD, 5-DAY (20 DEG. C)	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00310 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********			(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	30 MO AVG	45 DAILY MX	MG/L		TWICE/ MONTH	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		TWICE/ WEEK	GRAB
COLIFORM, FECAL MF, M-FC BROTH, 44.5C	SAMPLE MEASUREMENT	********	********	**	********			(13)			
31616 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	**	********	200 ARI MEAN	1000 DAILY MX	#/100 ML		TWICE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	****		CONTIN UOUS	TOTALZ
CHLORINE, TOTAL RESIDUAL	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
50060 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	2.0 INST MAX	MG/L		WEEK. DAYS	GRAB
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319 (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	423	843-6700	01	07	12
TYPED OR PRINTED			AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

Sewage flow has been diverted from this system since January, 1998. DSN-112 is now in stand-by status. No Discharge this Period

PERMITTEE NAME/ADDRESS *(Include Facility Name/Location if Different)*

Name TVA - SEQUOYAH NUCLEAR PLANT
Address BOX 2000
(INTEROFFICE SB-2A)
SODDY - DAISY TN 37384
Facility TVA - SEQUOYAH NUCLEAR PLANT
Location HAMILTON COUNTY

ATTN: Diedre B. Nida

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM *(NPDES)*
DISCHARGE MONITORING REPORT *(DMR)*

(2-16) PERMIT NUMBER	(17-19) DISCHARGE NUMBER
TN0026450	118 G

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
From	01	06	01	To	01	06	30
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

MAJOR
(SUBR 01)
F - FINAL
WASTEWATER & STORM WATER
EFFLUENT

*** NO DISCHARGE XX ***

Form Approved.
OMB No. 2040-0004
Approval expires 05-31-98

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
OXYGEN, DISSOLVED (DO)	SAMPLE MEASUREMENT	********	********	**		********	********	(19)			
00300 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	2.0 DAILY MN	********	********	MG/L		TWICE/ WEEK	GRAB
SOLIDS, TOTAL SUSPENDED	SAMPLE MEASUREMENT	********	********	**	********	********		(19)			
00530 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	100 DAILY MX	MG/L		TWICE/ WEEK	GRAB
SOLIDS, SETTLEABLE	SAMPLE MEASUREMENT	********	********	**	********	********		(25)			
00545 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	********	********	****	********	********	1.0 DAILY MX	MG/L		ONCE/ MONTH	GRAB
FLOW, IN CONDUIT OR THRU TREATMENT PLANT	SAMPLE MEASUREMENT			(03)	********	********	********	**			
50050 1 0 0 EFFLUENT GROSS VALUE	PERMIT REQUIREMENT	REPORT MO AVG	REPORT DAILY MX	MGD	********	********	********	*		ONCE/ BATCH	CALCTD
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER			TELEPHONE		DATE		
Richard T. Purcell Site Vice President	I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT SEE 18 U.S.C. §1001 AND 33 U.S.C. §1319. (Penalties under these statutes may include fines up to $10,000 and or maximum imprisonment of between 6 months and 5 years.)	Diedre B. Nida Environmental Supervisor	423	843-6700	01	07	12
TYPED OR PRINTED		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE	NUMBER	YEAR	MO	DAY

COMMENTS AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

During this reporting period, there has been no flow from the Dredge Pond other than that resulting from rainfall. No Discharge this Period

July 6, 2001

Diedre B. Nida, SB 2A-SQN

SEQUOYAH NUCLEAR PLANT (SQN) TOXICITY BIOMONITORING, NPDES PERMIT NO. TN0026450, MAY- JUNE 2001 REPORT

Attached are two copies of the subject report for submission to the state of Tennessee with the DMR package. The report provides results of compliance tests required under the SQN NPDES permit. I have also include a copy of the report for your records.

SQN Outfall 101 samples collected May 30- June 5, were not toxic to fathead minnows or daphnids (96-h LC_{50}s > 100 percent and 7-day NOEC's, measured as IC_{25}s, > 49 percent).

Fathead minnows and daphnids exposed to intake and upstream samples were not significantly different from the controls.

Call me at (256) 386-2755 if you have any questions or comments following your review of the report.

Cynthia L Russell

Cynthia L. Russell
Biologist
Environmental Engineering Services- West
CEB 3A-M

CLR
Attachment
cc (Attachment):
Files, ER&TA, CEB 1B-M

SQN 0601m.doc

July 6, 2001

Diedre B. Nida, SB 2A-SQN

SEQUOYAH NUCLEAR PLANT (SQN) TOXICITY BIOMONITORING, NPDES PERMIT NO. TN0026450, MAY- JUNE 2001 REPORT

Attached are two copies of the subject report for submission to the state of Tennessee with the DMR package. The report provides results of compliance tests required under the SQN NPDES permit. I have also include a copy of the report for your records.

SQN Outfall 101 samples collected May 30- June 5, were not toxic to fathead minnows or daphnids (96-h LC_{50}s > 100 percent and 7-day NOEC's, measured as IC_{25}s, > 49 percent).

Fathead minnows and daphnids exposed to intake and upstream samples were not significantly different from the controls.

Call me at (256) 386-2755 if you have any questions or comments following your review of the report.

Cynthia L Russell

Cynthia L. Russell
Biologist
Environmental Engineering Services- West
CEB 3A-M

CLR
Attachment
cc (Attachment):
Files, ER&TA, CEB 1B-M

SQN 0601m.doc

TENNESSEE VALLEY AUTHORITY
TOXICITY TEST REPORT

INTRODUCTION/EXECUTIVE SUMMARY

1) Facility/Discharger: Sequoyah Nuclear Plant/TVA Report Date: July 6, 2001

2) County/State: Hamilton/Tennessee 3) NPDES Permit #: TN0026450

4) Type of Facility: Nuclear-fueled electric generating plant

5) Design Flow (MGD): 3.266

6) Receiving Stream: Tennessee River (TRM 483.6) 7) 1Q20: 2,992.4

8) Outfall Tested: 101 9) Dates Sampled: 05/30/01-06/05/01

10) Flow on day(s) sampled (MGD): 1709, 1703, 1679, 1686, 1698, 1688, 1701

11) Pertinent site conditions: No unusual conditions reported.*

12) Test Dates: 05/31/01-06/07/01 13) Test Type: Short-term Chronic-definitive

14) Test Species: Fathead Minnows *(Pimephales promelas)*
Daphnids *(Ceriodaphnia dubia)*

15) Concentrations Tested (%):

Outfall 101	25.0	39.2	49.0	80.0	100.0
Intake	100.0				
Upstream	100.0				

16) Permit Limit Endpoint (%): Outfall 101 96-hr LC_{50} = 100 NOEC = 49

17) Test Results (%): Outfall 101

Pimephales promelas: 96-hr LC_{50} > 100 NOEC (IC_{25}) > 100
Ceriodaphnia dubia: 96-hr LC_{50} > 100 NOEC (IC_{25}) > 100

18) Facility Contact: Diedre B. Nida 19) Phone #: (423) 843-6700

20) Testing Lab Name: EnviroData Group, LLC (EDG)

21) Lab Contact: Lisa Sexton 22) Phone #: (859) 276-3506
TVA Contact: Cynthia L. Russell Phone #: (256) 386-2755

*Production/operation data will be provided upon request or in the event toxicity exceeds permit limits

23) Notes: Samples collected from Outfall 101 exhibited no toxicity to *P. promelas* or *C. dubia* based on the applicable permit limits. Resulting IC_{25} values for both species were > 100 percent. Intake and upstream samples were not significantly different from control for either fathead minnows or *Ceriodaphnia dubia,* based on Homoscedastic t-Tests and Wilcoxon Two-sample Test, respectively.

METHODS SUMMARY

Samples

1) Sampling Point: Outfall 101

2) Sample Type: Grab

3) Sample Information:

ID	Date/Time Collected (MM-DD/Time)	Date/Time Received (MM-DD/Time)	Arrival Temp. (°C)	Initial TRC* (mg/L)	Date/Time Used (MM-DD/Time)
101	05-30/0810 EDT	05-31/1130 EDT	1.0	< 0.02	05-31/1530 EDT
Intake	05-30/0800 EDT	05-31/1130 EDT	1.0	< 0.02	05-31/1530 EDT
Upstream	05-30/0745 EDT	05-31/1130 EDT	1.0	< 0.02	05-31/1530 EDT
101	05-31/0810 EDT	06-01/1015 EDT	1.0	< 0.02	06-01/1600 EDT
Intake	05-31/0755 EDT	06-01/1015 EDT	1.0	< 0.02	06-01/1600 EDT
Upstream	05-31/0740 EDT	06-01/1015 EDT	1.0	< 0.02	06-01/1600 EDT
101	06-01/0845 EDT	06-02/1100 EDT	1.0	< 0.02	06-02/1530 EDT
Intake	06-01/0835 EDT	06-02/1100 EDT	0.0	< 0.02	06-02/1530 EDT
Upstream	06-01/0805 EDT	06-02/1100 EDT	0.0	< 0.02	06-02/1530 EDT
101	06-02/0715 EDT	06-02/1400 EDT	1.0	< 0.02	06-03/1630 EDT
Intake	06-02/0705 EDT	06-02/1400 EDT	1.0	< 0.02	06-03/1630 EDT
Upstream	06-02/0645 EDT	06-02/1400 EDT	1.0	< 0.02	06-03/1630 EDT
101	06-03/0715 EDT	06-03/1230 EDT	0.0	< 0.02	06-04/1530 EDT
Intake	06-03/0700 EDT	06-03/1230 EDT	0.0	< 0.02	06-04/1530 EDT
Upstream	06-03/0645 EDT	06-03/1230 EDT	0.0	< 0.02	06-04/1530 EDT
101	06-04/0830 EDT	06-05/1000 EDT	1.0	< 0.02	06-05/1600 EDT
Intake	06-04/0855 EDT	06-05/1000 EDT	1.0	< 0.02	06-05/1600 EDT
Upstream	06-04/0755 EDT	06-05/1000 EDT	1.0	< 0.02	06-05/1600 EDT
101	06-05/0845 EDT	06-06/1030 EDT	1.0	< 0.02	06-06/1500 EDT
Intake	06-05/0830 EDT	06-06/1030 EDT	1.0	< 0.02	06-06/1500 EDT
Upstream	06-05/0815 EDT	06-06/1030 EDT	1.0	< 0.02	06-06/1500 EDT

*Total residual chlorine.

4) Sample manipulation: Samples were warmed to test temperature (25°C) in a warm water bath.

Test Organisms

	Pimephales promelas	*Ceriodaphnia dubia*
1) Source:	In-house Culture	In-house Culture
2) Age:	≤ 24 hours	≤ 24 hours

Test Method Summary (See Appendix A for additional information)

	Pimephales promelas	*Ceriodaphnia dubia*
1) Test Conditions	Static, renewal	Static, renewal
2) Test Duration	7 days	Until at least 60% of control females have 3 broods
3) Dilution/Control Water	Moderately Hard Reconstituted Water	Moderately Hard Reconstituted Water
4) Number Replicates	4	10
5) Animals per Replicate	10	1
6) Test Initiation (Date/Time)	05-31-01/1530 EDT	05-31-01/1430 EDT
7) Test Termination (Date/Time)	06-07-01/1530 EDT	06-06-01/1400 EDT
8) Test Temperature	Mean = 25.2°C (24.4°C-25.9°C)	Mean = 25.0°C (24.4°C-25.5°C)

9) Physical/Chemical Measurements: Hardness, alkalinity, total residual chlorine, and conductivity were measured at the laboratory in each 100 percent sample. Daily temperatures were measured in one replication per test concentration. Pre- and post-exposure test solutions were analyzed daily for pH and dissolved oxygen.

10) Statistics: Statistics were performed according to methods prescribed by EPA using ToxCalc version 5.0 statistical software (Tidepool Scientific Software, McKinneyville, CA).

TOXICITY TEST RESULTS (See Appendix C for Bench Sheets)

1) Results of a *Pimephales* (Genus) *promelas* (Species) Chronic/ 7-d (Type/Duration) Toxicity Test

Conducted 05/31/01 (mm/dd/yy) - 06/07/01 (mm/dd/yy) Using Effluent From Outfall 101 (number).

Test Solutions	Percent Surviving (time intervals used - days)						
	1	2	3	4*	5	6	7
Control	100	100	100	100	100	98	95
25% Effluent	100	100	100	98	98	98	90
39.2% Effluent	100	100	100	100	100	98	98
49% Effluent	100	100	100	100	100	95	95
80% Effluent	100	100	100	100	100	95	93
100% Effluent	100	100	95	95	95	95	95
Intake	100	100	95	95	95	95	95
Upstream	100	100	100	100	100	100	100

*96-Hour LC_{50} Value ≥ 100% 95% Confidence Limits Upper Limit NA Lower Limit NA	Calculated TU Estimates < 1.0 TUa Permit Limit 1.0 TUa

Test Solutions	IC_{25} Mean Dry Weight (mg) (Replication)				
	1	2	3	4	Mean
Control	0.212	0.310	0.344	0.440	0.327
25% Effluent	0.164	0.221	0.258	0.331	0.244
39.2% Effluent	0.385	0.272	0.272	0.295	0.306
49% Effluent	0.302	0.325	0.316	0.332	0.319
80% Effluent	0.292	0.199	0.618	0.452	0.390
100% Effluent	0.652	0.683	0.645	0.743	0.681
Intake	0.654	0.838	0.763	0.654	0.727
Upstream	0.588	0.691	0.605	0.543	0.607

IC_{25} Value ≥ 100% 95% Confidence Limits Upper Limit = NA Lower Limit = NA	Calculated TU Estimates † <1.0 Tuc Permit Limit 1.0 Tuc

†NOTE: TUa = 100/LC_{50}; TUc = 100/ IC_{25}

2) Results of a *Ceriodaphnia* (Genus) *dubia* (Species) Chronic/ 6 day (3-brood) (Type/Duration) Toxicity Test

Conducted 05/31/01 (mm/dd/yy) - 06/06/01 (mm/dd/yy) Using Effluent From Outfall 101 (number).

Test Solutions	Percent Surviving (time intervals used - days)						
	1	2	3	4*	5	6	7
Control	100	100	100	100	100	100	-
25% Effluent	100	100	100	100	100	100	-
39.2% Effluent	100	100	100	100	100	90	-
49% Effluent	100	100	100	100	100	100	-
80% Effluent	100	100	100	100	100	100	-
100% Effluent	100	100	100	100	100	100	-
Intake	100	100	100	100	100	100	-
Upstream	100	100	100	100	100	100	-

*96-Hour LC_{50} Value > 100%
95% Confidence Limits
Upper Limit NA
Lower Limit NA

Calculated TU Estimates † < 1.0 TUa
Permit Limit 1.0 TUa

Test Solutions	Reproduction (# of young/female during test) Data Replicates										
	1	2	3	4	5	6	7	8	9	10	Mean
Control	27	24	32	28	25	21	14	28	26	29	25.4
25% Effluent	28	23	33	27	29	23	27	26	35	27	27.8
39.2% Effluent	31	37	32	34	29	29	33	21	5	32	28.3
49% Effluent	36	31	33	25	29	31	35	35	13	32	30.0
80% Effluent	29	33	29	28	27	25	29	29	30	32	29.1
100% Effluent	27	28	35	30	29	28	25	29	32	30	29.3
Intake	30	32	33	31	26	31	30	31	31	32	30.7
Upstream	15	33	36	33	31	30	31	27	29	33	29.8

IC_{25} Value > 100%
95% Confidence Limits
Upper Limit NA
Lower Limit NA

Calculated TU Estimates † <1.0 TUc
Permit Limit 1.0 TUc

†NOTE: TUa = $100/LC_{50}$; TUc = $100/IC_{25}$

REFERENCE TOXICANT TEST RESULTS (See Appendixes A and C)

Species	Date	Time	Duration	Toxicant	Results (LC_{50}/IC_{25})
Pimephales promelas	05/01/01	1500	7-days	NaCl	2271mg/L (IC_{25})
Ceriodaphnia dubia	05/01/01	1630	7-days	NaCl	1346 mg/L (IC_{25})

PHYSICAL/CHEMICAL SUMMARY

Water Chemistry Mean Values and Ranges for Fathead Minnow Test, Sequoyah Nuclear Plant (SQN), May 31-June 7, 2001

Test/ Sample ID	Temperature Initial (°C)	Temperature Final (°C)	Dissolved Oxygen Initial (mg/L)	Dissolved Oxygen Final (mg/L)	pH Initial S.U.	pH Final S.U.	Conductance Initial (µmhos)	Alkalinity mg/L $CaCO_3$	Hardness mg/L $CaCO_3$	Total Residual Chlorine (mg/L)
Fathead/ Control	25.1 (24.7-25.5)	25.2 (24.8-25.5)	8.0 (7.8-8.1)	6.1 (5.2-7.0)	7.5 (7.4-7.6)	6.9 (6.8-7.1)	304 (296-315)	47.0 (41-56)	82.0 (79-83)	-
Fathead/ 25%	25.0 (24.6-25.3)	25.2 (24.8-25.5)	7.9 (7.8-8.0)	5.9 (5.0-7.0)	7.3 (7.2-7.4)	6.9 (6.7-7.1)	290 (263-334)	-	-	-
Fathead/ 39.2 %	25.1 (24.5-25.3)	25.1 (24.7-25.4)	7.8 (7.6-8.2)	5.8 (4.9-6.8)	7.2 (7.1-7.3)	6.9 (6.7-7.0)	279 (254-318)	-	-	-
Fathead/ 49 %	25.1 (24.5-25.4)	25.2 (24.7-25.5)	7.8 (7.5-8.2)	6.0 (4.9-6.9)	7.1 (7.0-7.3)	6.9 (6.7-7.1)	267 (244-299)	-	-	-
Fathead/ 80 %	25.1 (24.5-25.4)	25.2 (24.7-25.5)	7.8 (7.5-8.2)	6.1 (4.9-6.8)	7.0 (6.9-7.2)	6.9 (6.7-7.0)	231 (209-257)	-	-	-
Fathead/ 100%	25.1 (24.4-25.6)	25.2 (24.7-25.4)	7.6 (7.0-8.2)	5.7 (4.8-6.4)	6.9 (6.8-7.1)	6.9 (6.7-7.0)	207 (187-230)	54.4 (50-66)	69.0 (67-71)	<0.02 (<0.02-<0.02)
Fathead/ Intake	25.3 (24.5-25.8)	25.2 (24.8-25.5)	7.7 (7.2-8.2)	5.6 (4.6-6.6)	7.0 (6.9-7.0)	6.8 (6.7-7.0)	207 (193-228)	56.7 (49-70)	69.7 (67-72)	<0.02 (<0.02-<0.02)
Fathead/ Upstream	25.4 (24.5-25.9)	25.2 (24.8-25.5)	8.1 (7.9-8.3)	5.6 (4.8-6.5)	7.3 (7.1-7.7)	6.8 (6.7-7.0)	197 (184-224)	56.4 (47-96)	65.9 (64-68)	<0.02 (<0.02-<0.02)

PHYSICAL/CHEMICAL SUMMARY (continued)

Water Chemistry Mean Values and Ranges for Daphnid Test, Sequoyah Nuclear Plant (SQN), May 31-June 6, 2001

Test/ Sample ID	Temperature Initial (°C)	Temperature Final (°C)	Dissolved Oxygen Initial (mg/L)	Dissolved Oxygen Final (mg/L)	pH Initial S.U.	pH Final S.U.	Conductance Initial (µmhos)	Alkalinity mg/L $CaCO_3$	Hardness mg/L $CaCO_3$	Total Residual Chlorine (mg/L)
Daphnid/ Control	25.2 (24.9-25.5)	25.1 (24.7-25.5)	8.0 (7.8-8.1)	7.9 (7.7-8.0)	7.5 (7.4-7.6)	7.5 (7.3-7.5)	305 (296-315)	47.0 (41-56)	81.8 (79-83)	-
Daphnid/ 25%	25.1 (24.8-25.3)	25.0 (24.6-25.5)	7.9 (7.8-8.0)	7.9 (7.5-8.0)	7.3 (7.2-7.4)	7.5 (7.3-7.6)	295 (271-334)	-	-	-
Daphnid/ 39.2 %	25.2 (24.9-25.4)	25.0 (24.5-25.5)	7.8 (7.6-8.2)	7.9 (7.5-8.1)	7.2 (7.1-7.3)	7.5 (7.3-7.6)	280 (254-318)	-	-	-
Daphnid/ 49 %	25.3 (24.8-25.4)	25.0 (24.5-25.5)	7.8 (7.5-8.2)	7.9 (7.6-8.1)	7.1 (7.0-7.3)	7.5 (7.4-7.6)	268 (244-299)	-	-	-
Daphnid/ 80 %	25.3 (24.7-25.5)	25.1 (24.5-25.5)	7.8 (7.5-8.2)	7.9 (7.7-8.1)	7.0 (6.9-7.2)	7.5 (7.4-7.6)	231 (209-257)	-	-	-
Daphnid/ 100.0 %	25.3 (24.7-25.6)	25.0 (24.4-25.4)	7.6 (7.0-8.2)	8.0 (7.8-8.1)	6.9 (6.8-7.1)	7.5 (7.4-7.6)	207 (187-230)	54.5 (50-66)	68.8 (67-71)	<0.02 (<0.02-<0.02)
Daphnid/ Intake	25.5 (25.0-25.8)	25.0 (24.5-25.4)	7.7 (7.2-8.2)	8.0 (7.8-8.2)	7.0 (6.9-7.0)	7.5 (7.4-7.6)	206 (193-228)	57.3 (49-70)	70.0 (67-72)	<0.02 (<0.02-<0.02)
Daphnid/ Upstream	25.6 (25.0-25.9)	25.0 (24.5-25.4)	8.2 (7.9-8.3)	8.0 (7.8-8.1)	7.3 (7.1-7.7)	7.5 (7.4-7.6)	198 (184-224)	57.5 (47-96)	66.0 (64-68)	<0.02 (<0.02-<0.02)

PHYSICAL/CHEMICAL SUMMARY (continued):

Analysis of Sequoyah Nuclear Plant Diffuser (Outfall 101) Discharge Concentrations of Total Residual Chlorine*, May 30- June 5, 2001

2001		Sample Type	Total Residual Chlorine (mg/L)
Month	Date		
May	30	Grab	0.0149
May	31	Grab	0.0207
June	1	Grab	<0.0042
June	2	Grab	<0.0042
June	3	Grab	<0.0042
June	4	Grab	0.0115
June	5	Grab	0.0078

*Towerbrom-960 (Oxidizing Biocide) 7% Sodium Bromide, 89% Sodium Dichloroisocyanurate is utilized in the essential raw cooling water and in the raw cooling water systems at SQN to control the growth of microbiologically induced bacteria and Asiatic Clams. The treatment is necessary for adequate cooling water flow, efficient heat exchange and corrosion prevention. The injected chemical is diluted by the condenser cooling water flow as well as from the flow from other sources. H-130M addition to the Raw Cooling Water system was in progress June 4 and 5. 2001.

SUMMARY/CONCLUSIONS

Samples collected from Outfall 101 exhibited no toxicity to *P. promelas* or *C. dubia* based on the applicable permit limits. Resulting IC_{25} values for both species were > 100 percent. Intake and upstream samples were not significantly different from control for either fathead minnows or *Ceriodaphnia dubia,* based on Homoscedastic t-Tests and Wilcoxon Two-Sample Test, respectively.

Appendix A

ADDITIONAL TOXICITY TEST INFORMATION

SUMMARY OF METHODS

1) *Pimephales promelas*

Tests were conducted according to EPA/600/4-91/002 (July 1994) using four replicates, each containing ten test organisms, per treatment. Test vessels consisted of 500-mL polystyrene tumblers, each containing 250 mL of test solution. [2]

2) *Ceriodaphnia dubia*

Tests were conducted according to EPA/600/4-91/002 (July 1994) using ten replicates, each containing one test organism, per treatment. Test vessels consisted of 30-mL polystyrene cups, each containing 15 mL of test solution. [2]

DEVIATIONS/MODIFICATIONS TO TEST PROTOCOL

None

DEVIATIONS/MODIFICATIONS TO PRETEST CULTURE OR HOLDING OF TEST ORGANISMS

None

PHYSICAL AND CHEMICAL METHODS

1) Reagents, Titrants, Buffers, etc.: All chemicals were certified products used before expiration dates (where applicable).

2) Instruments: All identification, service, and calibration information pertaining to EDG laboratory instruments is recorded in calibration and maintenance log books.

3) Temperature was measured using a Fisher Scientific digital NIST-traceable thermometer according to EDG SOP 3203. [3]

4) Dissolved oxygen was measured using a Jenway 3410 Electrochemistry Analyzer. The instrument was calibrated and readings were made according to EDG SOP 3187. [3]

5) The pH was measured using a Jenway 3410 Electrochemistry Analyzer equipped with an Orion combination electrode. The instrument was calibrated and readings were made according to EDG SOP 3195. [3]

6) Conductance was measured using a Jenway 3410 Electrochemistry Analyzer. The instrument was calibrated and readings were taken according to EDG SOP 3183. [3]

7) Alkalinity was measured using Standard Methods Titration Method 2320 B or EPA method 310.2 on a Lachat Colorimetric Autoanalyzer equipped with Quickchem AE Software. [4, 5]

8) Hardness was measured using Standard Methods EDTA Titrimetric Method 2340 C or EPA method 200.7/9.3 on a Accuris ICP Analyzer. [4, 5]

9) Total residual chlorine was determined using the DPD Ferrous Titrimetric Method according to EDG SOP 3210. [3]

QUALITY ASSURANCE

Toxicity Test Methods: All phases of the study including, but not limited to, sample collection, handling and storage; glassware preparation; test organism culturing/acquisition and acclimation; test organism handling during test; and maintaining appropriate test conditions were conducted according to the protocol as described in this report and EPA/600/4-91/002. [2] Any known deviations were noted during the study and are reported herein.

REFERENCE TOXICANT TESTS (See Appendix C for control chart information)

1) Test Type: 7-day chronic tests with results expressed as IC_{25} values in mg NaCl/L.

2) Standard Toxicant: Sodium Chloride (NaCl crystalline)

3) Dilution Water Used: Moderately hard reconstituted water

4) Statistics: IC_{25} – calculated by ToxCalc version 5.0 statistical software using EPA-recommended methods

REFERENCES

1) NPDES Permit No. TN0026450.

2) Lewis, P. A., D. J. Klemm, J. M. Lazorchak, T. J. Norberg-King, W. H. Peltier, M. A. Heber. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-91/002 (July 1994).

3) Standard Operating Procedures, Biomonitoring Section, EnviroData Group, LLC.

4) Standard Methods for the Examination of Water and Wastewater, 18th Edition, American Public Health Association.

5) Methods for Chemical Analysis of Water and Wastes, EPA/600/4-79/020 (March 1983).

Sequoyah Nuclear Plant Biomonitoring
May 31-June 7, 2001

Appendix B

Chain of Custody Records and
Toxicity Bench Sheets

COC#*4595

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By:

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		5/30/01 0810	2.5 GAL				✓		31349	1°	MCH	1130	ok
SQN- TRM 486 TOX	GRAB	4.0		5/30/01 0745	1.0 GAL				✓		31350	1°	↓	↓	↓
SQN- INT TOX	GRAB	4.0		6/05/01 0800	1.0 GAL				✓		31351	1°	↓	↓	↓

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
[illegible]	5/30/01 / 1300		
Fed Ex	5·31·01 / 1130	M. Harper	5·31·01 / 1130
M. Harper	5·31·01 / 1150	Jarp Ledford	5.31.01 1150

Instructions: Clients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The hold time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to initiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

COC#X-4620

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By:

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		5/31/01 0810	2.5 GAL				✓		31616	1°	MCH	1015	OK
SQN- TRM 486 TOX	GRAB	4.0		5/31/01 0740	1.0 GAL				✓		31617	1°	↓	↓	↓
SQN- INT TOX	GRAB	4.0		5/31/01 0755	1.0 GAL				✓		31618	1°	↓	↓	↓

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
N. Nunley	5/31/01 1000	Federal Express	
FedEx	6·1·01 / 1015	M. Harper	6·1·01 / 1015
M. Harper	6·1·01 / 1030	O. Hunter	6·1·01 / 1030

structions: Cients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The old time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to itiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

COC# 4646

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By: Rick Nunley

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		6/01/01 0845	2.5 GAL					✓	32056	1°C	TL	1100	Clear
SQN- TRM 486 TOX	GRAB	4.0		6/01/01 0805	1.0 GAL					✓	32057	0°C	TL	1100	Clear
SQN- INT TOX	GRAB	4.0		6/01/01 0835	1.0 GAL					✓	32058	0°C	TL	1100	Clear

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
R. Nunley	6/01/01 1000	Federal Express	
Fed Ex	6/02/01 1100	Jay Ledford	6·2·01 / 1100

structions: Cients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The old time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to tiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

COC#* 4647

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By: Rick Nunley

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:
Samples were delivered by private carrier

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	* EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		6/02/01 0715	2.5 GAL				✓		32059	Ø 1°	TL	1400	Clear
SQN- TRM 486 TOX	GRAB	4.0		6/02/01 0645	1.0 GAL				✓		32060	Ø 1°	TL	1400	Clear
SQN- INT TOX	GRAB	4.0		6/02/01 0705	1.0 GAL				✓		32061	Ø 1°	TL	1400	Clear
															Clear

TL 1400 6-2-01

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
R. Nunley	6/02/01 / 1200	Jarp Ledford	6/2/01 1400

Instructions: Clients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The hold time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to initiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

COC#* 4648

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By: Rick Nunley

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments: Samples were delivered by private courier

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number *	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		6/03/01 0715	2.5 GAL				✓		32062	0	TL	1235	Clear
SQN- TRM 486 TOX	GRAB	4.0		6/03/01 0645	1.0 GAL				✓		32063	+0	TL	1235	clear
SQN- INT TOX	GRAB	4.0		6/03/01 0700	1.0 GAL				✓		32064	+0	TL	1235	clear

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
R. Nunley	6/3/01 0900	Jay Ludford	6/3/01 1230

Instructions: Clients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The hold time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to initiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

WWFK 4695

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By: Rick Nunley

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		6/04/01 0830	2.5 GAL				✓		32369	1°	MCK	1000	Clear
SQN- TRM 486 TOX	GRAB	4.0		6/04/01 0755	1.0 GAL				✓		32370	1°	↓	↓	↓
SQN- INT TOX	GRAB	4.0		6/04/01 0855	1.0 GAL				✓		32371	1°	↓	↓	↓

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
R. Nunley	6/4/01 1000		
FedEx	6·5·01 / 1000	M. Harper	6·5·01 / 1000
M. Harper	6·5·01 / 1030	[illegible]	6·5·01 / 1030

Instructions: Clients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The hold time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to initiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

WORK 4701

BIOMONITORING CHAIN OF CUSTODY RECORD

Client: TVA

Project Name: Sequoyah Nuclear Plant

P.O. Number: 2000

Facility Sampled: Sequoyah Nuclear Plant

NPDES Number: TN 0026450

Collected By: Rick Nunley

EnviroData Group

2520 Regency Road, Lexington, KY 40503

Phone: 859-276-3506
Toll Free: 800-489-3506
Fax: 859-278-5665
email: info@envirodatagroup.com

FedEx UPS Bus Client CTI $_____

Other (specify):_____

General Comments:

Field Identification / Sample Description	Grab/ Comp.	Ship. Temp. (°C)	Collection Date/Time (If grab, list date/time under "End")		Container Number & Volume Collected	Flow (MGD)	Rain Event? (Mark as Appropriate)				Laboratory Use				
			Start	End			Yes	If Yes, Inches	No	Trace	EDG Log Number	Arrival Temp. (°C)	By	Time	Appearance
SQN-DSN 101 TOX	GRAB	4.0		6/05/01 0845	2.5 GAL				✓		32752	1°	MCH	1030	Clear
SQN- TRM 486 TOX	GRAB	4.0		6/05/01 0815	1.0 GAL				✓		32753	1°	↓	↓	Clear
SQN- INT TOX	GRAB	4.0		6/05/01 0830	1.0 GAL				✓		32754	1°	↓	↓	Clear

Sample Custody – Fill In From Top Down

Relinquished By (Signature):	Date/Time	Received By (Signature):	Date/Time
R. Nunley	6/5/01 / 1000	[illegible]	6-5-01 / 1000
Fed. Ex	6-6-01 / 1030	M. Clayson	6-6-01 / 1030
M. Clayson	6-6-01 / 1045	Claire Hunter	6-6-01 / 1045

Instructions: Clients should fill in all areas except those in the "Laboratory Use" block. Biomonitoring samples are preserved by storing them at 4°C and shipping them in ice. The hold time for each sample is 36 hours from the time of collection. Therefore, please collect and ship in such a way that the laboratory will receive the samples with ample time to initiate testing within that time frame. Samples shipped overnight on Friday via FedEx or UPS must be marked for Saturday delivery or they will not arrive until the following Monday.

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503
(859) 276-3506

Biomonitoring Checklist

Client name TVA / Sequoyah Fish

Sample Numbers 31349

Question	Yes	No	NA
Were the correct species used in the test?	✓		
Were the correct test types set up?	✓		
Did controls pass? (90% survival for acutes and 80% survival in chronics)	✓		
Did the *Ceriodaphnia dubia* controls have a minimum of 150 young?			✓
Did the *Pimephales promelas* controls weigh a minimum of .0250 mg/L?	✓		
Were stats required? Performed?	✓		
Was any chlorine present in sample/samples?		✓	
Were all applicable hold times met?	✓		
Was the sample temperature < 4°C upon arrival to the lab? If not, what were the temperatures?	✓		
Were all chemistries sent to the chemistry lab?	✓		
Were any data/chemistries missed?		✓	
Was the temperature of the lab acceptable during testing?	✓		
Were organisms the correct age?	✓		
Has addition been doubled checked on the data sheets?	✓		

Comments: IC_{25}
96hr LC_{50}

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

PIMEPHALES PROMELAS FEEDING RECORD

Discharger: TVA / Sequoyah

Test Initiation Date / Time: 5-31-01 / 1530

Location:

Test Protocol Temperature: 25 ± 1°C

Bio Log No.: 31349

	Time of Feeding								
	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
A.M.	—	0930	0800	0830	0810	0800	0715	~~0710~~	
P.M.	1700	1900	1930	1730	1900	1825	1830	—	
Analyst	WH	WH/TL	TL	TL	SP/WH	SP	SP/TL	SP	

Comments:

FATHEAD MINNOW
LARVAL SURVIVAL AND GROWTH TEST
EPA 600/4-91/002, METHOD 1000.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921

Discharger: TVA / Sequoyah
Sample Description:
Bio. Log No: 31349 +
Date/Time Test Initiated: 5-31-01 1530
Dilution Water Batch Number on Day: 1: 032 2: 033 3: 033 4: 033 5: 034 6: 035 7: ~~036~~
Time of Day Renewed on Day: 1: 1600 2: 1500 3: 1500 4: 1530 5: 1600 6: 1500

Date/Time Test Terminated: 6-7-01 1530
Organism Batch Number: 0531
Initial Organism Age: < 24 hrs.
Dilution Water Used: Moderately Hard

Test Conc.	Test Cont. No.	No. of Live Larvae (Days) Sample Dates 5/30 (1)	5/31 (2)	6/1 (3)	6/2 (4)	6/3 (5)	6/4 (6)	6/5 (7)	Tin No.	Wt. of Tin & Larvae (mg)	Wt. of Tin (mg)	Total Wt. of Larvae (mg)	Mean Wt. of Larvae (mg)	Mean Wt. for Treatment (mg)
Control	1	10	10	10	10	10	9	9	1	1000.18	998.06	2.12	0.212	
	2	10	10	10	10	10	10	10	2	1003.64	1000.54	3.10	0.310	
	3	10	10	10	10	10	10	10	3	1003.44	1000.00	3.44	0.344	
	4	10	10	10	10	10	10	9	4	1008.16	1003.76	4.40	0.440	0.326
25	5	10	10	10	10	10	10	9	5	1002.95	1001.31	1.64	0.164	
	6	10	10	10	9	9	9	8	6	1006.02	1003.81	2.21	0.221	
	7	10	10	10	10	10	10	9	7	1003.31	1000.73	2.58	0.258	
	8	10	10	10	10	10	10	10	8	1004.19	1000.88	3.31	0.331	0.244
39.2	9	10	10	10	10	10	10	10	9	1000.15	996.30	3.85	0.385	
	10	10	10	10	10	10	10	10	10	998.72	996.00	2.72	0.272	
	11	10	10	10	10	10	10	10	11	996.94	994.22	2.72	0.272	
	12	10	10	10	10	10	9	9	12	1000.82	997.87	2.95	0.295	0.306
49	13	10	10	10	10	10	9	9	13	997.19	994.17	3.02	0.302	
	14	10	10	10	10	10	10	10	14	997.81	994.56	3.25	0.325	
	15	10	10	10	10	10	9	9	15	995.36	992.20	3.16	0.316	
	16	10	10	10	10	10	10	10	16	995.59	992.27	3.32	0.332	0.319
80	17	10	10	10	10	10	9	9	17	997.13	994.21	2.92	0.292	
	18	10	10	10	10	10	9	8	18	991.81	989.82	1.99	0.199	
	19	10	10	10	10	10	10	10	19	997.44	991.26	6.18	0.618	
	20	10	10	10	10	10	10	10	20	994.56	990.04	4.52	0.452	0.390
Analyst		DH	TL	TL	TL	TL	P	TL		DH	TL	DH	DH	DH

Notes:

Approved By LS 6-12-01

FATHEAD MINNOW
LARVAL SURVIVAL AND GROWTH TEST
EPA 600/4-91/002, METHOD 1000.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921

Discharger: TVA / Sequoyah
Sample Description:
Bio. Log No: 31349
Date/Time Test Initiated: 5-31-01 1530
Dilution Water Batch Number on Day: 1: 032 2: 033 3: 033 4: 033 5: 034 6: 035 7: 036

Date/Time Test Terminated: 6-7-01 1530
Organism Batch Number: 0531
Initial Organism Age: < 24hrs.
Dilution Water Used: Moderately Hard

Test Conc.	Test Cont. No.	No. of Live Larvae (Days) Sample Dates 5/30 (1)	5/31 (2)	6/1 (3)	6/2 (4)	6/3 (5)	6/4 (6)	6/5 (7)	Tin No.	Wt. of Tin & Larvae (mg)	Wt. of Tin (mg)	Total Wt. of Larvae (mg)	Mean Wt. of Larvae (mg)	Mean Wt. for Treatment (mg)
100	21	10	10	10	10	10	10	9/10	21	1002.62	996.10	6.52	0.652	
	22	10	10	7/8	8	8	8	8	22	1004.41	997.58	6.83	0.683	
	23	10	10	10	10	10	10	9/10	23	1005.45	999.00	6.45	0.645	
	24	10	10	10	10	10	10	10	24	1006.94	999.51	7.43	0.743	0.681
Intake	25	10	10	10	10	10	10	10	245	1007.72	1001.18	6.54	0.654	
	26	10	10	10	10	10	10	10	26	1007.68	999.30	8.38	0.838	
	27	10	10	8	8	8	8	8	27	1001.03	993.40	7.63	0.763	
	28	10	10	9/10	10	10	10	10	28	1003.39	996.85	6.54	0.654	0.727
Upstream	29	10	10	10	10	10	10	10	29	1003.60	997.72	5.88	0.588	
	30	10	10	10	10	10	10	10	30	1007.10	1000.19	6.91	0.691	
	31	10	10	10	10	10	10	10	31	1004.05	997.00	6.05	0.605	
	32	10	10	10	10	10	10	10	32	999.10	993.67	5.43	0.543	0.607
Analyst		DH	TL	TL	TL	TL	LS	TL		DH	TL	DH	DH	DH

Notes:

Approved By: LS 6-12-01

Larval Fish Survival and Growth Test-Start Growth

Start Date:	05/31/2001 15:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/07/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:					

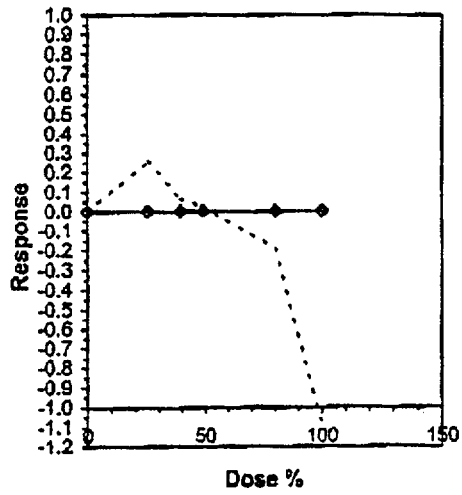
Conc-%	1	2	3	4
Control	0.2120	0.3100	0.3440	0.4400
25	0.1640	0.2210	0.2580	0.3310
39.2	0.3850	0.2720	0.2720	0.2950
49	0.3020	0.3250	0.3160	0.3320
80	0.2920	0.1990	0.6180	0.4520
100	0.6520	0.6830	0.6450	0.7430

			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.3265	1.0000	0.3265	0.2120	0.4400	28.824	4	0.3776	1.0000
25	0.2435	0.7458	0.2435	0.1640	0.3310	28.741	4	0.3776	1.0000
39.2	0.3060	0.9372	0.3060	0.2720	0.3850	17.572	4	0.3776	1.0000
49	0.3188	0.9763	0.3188	0.3020	0.3320	4.061	4	0.3776	1.0000
80	0.3903	1.1953	0.3903	0.1990	0.6180	47.229	4	0.3776	1.0000
100	0.6808	2.0850	0.6808	0.6450	0.7430	6.561	4	0.3776	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.95029	0.884	0.39932	2.08362
Bartlett's Test indicates unequal variances (p = 8.92E-03)	15.3625	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL(Exp)	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



REVISED

Larval Fish Survival and Growth Test-Start Growth

Start Date:	05/31/2001 15:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/07/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Intake				

Conc-%	1	2	3	4
Control	0.2120	0.3100	0.3440	0.4400
100	0.6540	0.8380	0.7630	0.6540

			Transform: Untransformed						1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
Control	0.3265	1.0000	0.3265	0.2120	0.4400	28.824	4			
100	0.7273	2.2274	0.7273	0.6540	0.8380	12.369	4	-6.157	1.943	0.1265

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.92705	0.749	0.17843	-1.3412
F-Test indicates equal variances (p = 0.94)	1.09459	47.4683		

Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	0.12649	0.38741	0.3212	0.00847	8.4E-04	1, 6

ToxCalc v5.0.23

Reviewed by: LS

Larval Fish Survival and Growth Test-Start Growth

Start Date:	05/31/2001 15:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/07/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	Upstream				

Conc-%	1	2	3	4
Control	0.2120	0.3100	0.3440	0.4400
100	0.5880	0.6910	0.6050	0.5430

			Transform: Untransformed						1-Tailed	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD
Control	0.3265	1.0000	0.3265	0.2120	0.4400	28.824	4			
100	0.6068	1.8583	0.6068	0.5430	0.6910	10.212	4	-4.974	1.943	0.1095

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.96745	0.749	0.13963	-0.2095
F-Test indicates equal variances (p = 0.51)	2.30716	47.4683		

Hypothesis Test (1-tail, 0.05)	MSDu	MSDp	MSB	MSE	F-Prob	df
Homoscedastic t Test indicates no significant differences	0.10948	0.3353	0.15708	0.00635	0.00252	1, 6

Reviewed by: LS

Acute Fish Test-96 Hour Survival

Start Date:	05/31/2001 15:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/07/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EA-EPA/600/4-90/027F	Test Species:	PP-Pimephales promelas
Comments:					

Conc-%	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
25	1.0000	0.9000	1.0000	1.0000
39.2	1.0000	1.0000	1.0000	1.0000
49	1.0000	1.0000	1.0000	1.0000
80	1.0000	1.0000	1.0000	1.0000
100	1.0000	0.8000	1.0000	1.0000

			Transform: Arcsin Square Root					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
25	0.9750	0.9750	1.3713	1.2490	1.4120	5.942	4	16.00	10.00
39.2	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
49	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
80	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4	18.00	10.00
100	0.9500	0.9500	1.3358	1.1071	1.4120	11.411	4	16.00	10.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.64364	0.884	-2.3883	7.9655
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Steel's Many-One Rank Test	100	>100		1

ToxCalc v5.0.23

Reviewed by: LS

Acute Fish Test-96 Hour Survival

Start Date:	05/31/2001 15:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/07/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EA-EPA/600/4-90/027F	Test Species:	PP-Pimephales promelas
Comments:	Intake				

Conc-%	1	2	3	4
Control	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	0.8000	1.0000

			Transform: Arcsin Square Root					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	1.0000	1.0000	1.4120	1.4120	1.4120	0.000	4		
100	0.9500	0.9500	1.3358	1.1071	1.4120	11.411	4	16.00	11.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.7064	0.749	-2.0367	4.9
Equality of variance cannot be confirmed				

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

ToxCalc v5.0.23

Reviewed by: LS

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503
(859) 276-3506

Biomonitoring Checklist

Client name TVA / SEQUOYAH

Sample Numbers 31349+

Question	Yes	No	NA
Were the correct species used in the test?	✓		
Were the correct test types set up?	✓		
Did controls pass? (90% survival for acutes and 80% survival in chronics)	✓		
Did the *Ceriodaphnia dubia* controls have a minimum of 150 young?	✓		
Did the *Pimephales promelas* controls weigh a minimum of .0250 mg/L?			✓
Were stats required? Performed?	✓		
Was any chlorine present in sample/samples?		✓	
Were all applicable hold times met?	✓		
Was the sample temperature < 4°C upon arrival to the lab? If not, what were the temperatures?	✓		
Were all chemistries sent to the chemistry lab?	✓		
Were any data/chemistries missed?		✓	
Was the temperature of the lab acceptable during testing?	✓		
Were organisms the correct age?	✓		
Has addition been doubled checked on the data sheets?	✓		
Comments: IC_{25}			

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET

EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Discharger: TVA / Sequoyah
Location:
Bio. No.: 31349 +
Date/Time Initial Sample Collected: 5-30-01 0810
Time Renewed on Day: 1: N/A 2: 1600 3: 1530 4: 1630 5: 1430 6: 1330 7:
Sample Date on Day 1: 5/30 2: 5/31 3: 6/1 4: 6/2 5: 6/3 6: 6/4 7:

Date/Time Test Initiated: 5/31/01 1430
Date/Time Test Terminated: 6-6-01 1400
Dilution Water Used: Moderately Hard
Source Culture Date: 0520

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		Dilution Water (Top) and Food (Bottom) Batch Numbers									
		032	033	033	633	034	035				
		157	158	159	159	160	161				
		1	2	3	4	5	6	7*	8*		
Control	1	0	0	0	5	9	13			27	
	2	0	0	0	2	10	12			24	
	3	0	0	0	6	11	15			32	
	4	0	0	0	3	9	16			28	
	5	0	0	0	4	10	11			25	
	6	0	0	0	2	7	12			21	
	7	0	0	0	6	0	8			14	
	8	0	0	0	5	9	14			28	
	9	0	0	0	4	9	13			26	
	10	0	0	0	4	9	16			29	254
No. of Live Adults		10	10	10	10	10	10				

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		1	2	3	4	5	6	7	8		
25	11	0	0	0	6	9	13			28	
	12	0	0	0	0	6	17			23	
	13	0	0	0	6	11	16			33	
	14	0	0	0	0	9	18			27	
	15	0	0	0	4	8	17			29	
	16	0	0	0	0	9	14			23	
	17	0	0	0	5	8	14			27	
	18	0	0	0	3	9	14			26	
	19	0	0	0	6	11	18			35	
	20	0	0	0	4	8	15			27	278
No. of Live Adults		10	10	10	10	10	10				
Analyst		TL	TL	TL	TL	TL	TL			TL	TL

Comments:

* If necessary

Approved By: LS 6-12-01

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET
EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

Discharger: TVA / Sequoyah
Location:
Bio. No.: 31349+

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
39.2	21	0	0	0	5	10	16			31	
	22	0	0	0	4	10	23			37	
	23	0	0	0	6	11	15			32	
	24	0	0	0	3	11	20			34	
	25	0	0	0	4	9	16			29	
	26	0	0	0	3	8	18			29	
	27	0	0	0	5	7	21			33	
	28	0	0	0	0	9	12			21	
	29	0	0	0	5	0	X°			5	
	30	0	0	0	3	13	16			32	283
No. of Live Adults		10	10	10	10	10	10				

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
49	31	0	0	0	5	13	18			36	
	32	0	0	0	2	10	19			31	
	33	0	0	0	6	11	16			33	
	34	0	0	0	2	9	14			25	
	35	0	0	0	3	10	16			29	
	36	0	0	0	3	8	20			31	
	37	0	0	0	2	17	16			35	
	38	0	0	0	4	10	21			35	
	39	0	0	0	4	9	0			13	
	40	0	0	0	2	13	17			32	300
No. of Live Adults		10	10	10	10	10	10				
Analyst		TL	TL	TL	TL	TL	TL			TL	TL

Comments:

Approved By: LS 6-12-01

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET
EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

Discharger: TVA / Sequoyah
Location:
Bio. No.: 31349+

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
80	41	0	0	0	4	9	16			29	
	42	0	0	0	6	7	20			33	
	43	0	0	0	4	9	16			29	
	44	0	0	0	3	9	16			28	
	45	0	0	0	3	9	15			27	
	46	0	0	0	10	0	15			25	
	47	0	0	0	2	11	16			29	
	48	0	0	0	5	12	12			29	
	49	0	0	0	2	10	18			30	
	50	0	0	0	1	11	20			32	291
No. of Live Adults		10	10	10	10	10	10				

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
100	51	0	0	0	4	8	15			27	
	52	0	0	0	0	8	20			28	
	53	0	0	0	4	11	20			35	
	54	0	0	0	3	12	15			30	
	55	0	0	0	3	10	16			29	
	56	0	0	0	3	10	15			28	
	57	0	0	0	2	9	14			25	
	58	0	0	0	5	9	15			29	
	59	0	0	0	5	9	18			32	
	60	0	0	0	5	11	14			30	293
No. of Live Adults		10	10	10	10	10	10				
Analyst		TL	TL	TL	TL	TL	TL			TL	TL

Comments:

Approved By: LMS 6/20

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET

EPA 600/4-91/002, Method 1002.0

EnviroData Group

2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

Discharger: TVA / Sequoyah

Location:

Bio No.: 31349+

Date/Time Initial Sample Collected: 5-30-01 0810

Date/Time Test Initiated: 5/31/01 1430

Date/Time Test Terminated: 6-6-01 1400

Dilution Water Used: Moderately Hard

Source Culture Date: 0520

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) — Sample Date or Dilution Water Batch Number								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		0332	033	033	034	034	035				
		1	2	3	4	5	6	7*	8*		
Intake	61	0	0	0	5	10	15			30	
	62	0	0	0	5	9	18			32	
	63	0	0	0	6	12	15			33	
	64	0	0	0	4	12	15			~~24~~ 31	
	65	0	0	0	0	9	17			26	
	66	0	0	0	3	10	18			31	
	67	0	0	0	6	10	14			30	
	68	0	0	0	5	14	12			31	
	69	0	0	0	4	10	17			31	
	70	0	0	0	4	11	17			32	307
No. of Live Adults		10	10	10	10	10	10				

Effluent Conc. (%)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) — Sample Date or Dilution Water Batch Number								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		033	033	033	034						
		1	2	3	4	5	6	7	8		
Upstream	71	0	0	0	4	11	0			15	
	72	0	0	0	4	12	17			33	
	73	0	0	0	5	13	18			36	
	74	0	0	0	2	12	19			33	
	75	0	0	0	4	9	18			31	
	76	0	0	0	2	10	18			30	
	77	0	0	0	1	12	18			31	
	78	0	0	0	4	9	14			27	
	79	0	0	0	0	11	18			29	
	80	0	0	0	4	12	17			33	298
No. of Live Adults		10	10	10	10	10	10				
Analyst		TL	TL	TL	TL	TL	TL			TL	TL

Comments:

* If necessary

Approved By: LS 6-12-01

Daphnid Survival and Reproduction Test-Reproduction

Start Date:	05/31/2001 14:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/06/2001 14:00	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	~~Intake~~ Outfall 001				

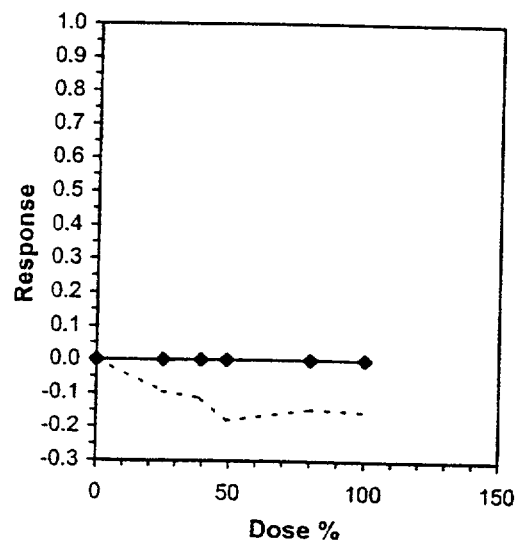
Conc-%	1	2	3	4	5	6	7	8	9	10
Control	27.000	24.000	32.000	28.000	25.000	21.000	14.000	28.000	26.000	29.000
25	28.000	23.000	33.000	27.000	29.000	23.000	27.000	26.000	35.000	27.000
39.2	31.000	37.000	32.000	34.000	29.000	29.000	33.000	21.000	5.000	32.000
49	36.000	31.000	33.000	25.000	29.000	31.000	35.000	35.000	13.000	32.000
80	29.000	33.000	29.000	28.000	27.000	25.000	29.000	29.000	30.000	32.000
100	27.000	28.000	35.000	30.000	29.000	28.000	25.000	29.000	32.000	30.000

			Transform: Untransformed					Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	25.400	1.0000	25.400	14.000	32.000	19.659	10	28.317	1.0000
25	27.800	1.0945	27.800	23.000	35.000	13.755	10	28.317	1.0000
39.2	28.300	1.1142	28.300	5.000	37.000	32.516	10	28.317	1.0000
49	30.000	1.1811	30.000	13.000	36.000	22.662	10	28.317	1.0000
80	29.100	1.1457	29.100	25.000	33.000	7.845	10	28.317	1.0000
100	29.300	1.1535	29.300	25.000	35.000	9.388	10	28.317	1.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates non-normal distribution (p <= 0.01)	1.40369	1.035	-2.0527	6.88261
Bartlett's Test indicates unequal variances (p = 3.34E-04)	23.0209	15.0863		

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			



ToxCalc v5.0.23

Reviewed by: KS

Daphnid Survival and Reproduction Test-Reproduction

Start Date:	05/31/2001 14:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/06/2001 14:00	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	Intake				

Conc-%	1	2	3	4	5	6	7	8	9	10
Control	27.000	24.000	32.000	28.000	25.000	21.000	14.000	28.000	26.000	29.000
100	30.000	32.000	33.000	31.000	26.000	31.000	30.000	31.000	31.000	32.000

			Transform: Untransformed					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	25.400	1.0000	25.400	14.000	32.000	19.659	10		
100	30.700	1.2087	30.700	26.000	33.000	6.152	10	142.50	82.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.86373	0.868	-1.5135	4.37005
F-Test indicates unequal variances (p = 7.89E-03)	6.99065	6.54109		
Hypothesis Test (1-tail, 0.05)				
Wilcoxon Two-Sample Test indicates no significant differences				

ToxCalc v5.0.23

Reviewed by: LS

Daphnid Survival and Reproduction Test-Reproduction

Start Date:	05/31/2001 14:30	Test ID:	31349	Sample ID:	TV-TVA
End Date:	06/06/2001 14:00	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	EFF1-POTW
Sample Date:	05/30/2001 08:10	Protocol:	EF-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	Upstream				

Conc-%	1	2	3	4	5	6	7	8	9	10
Control	27.000	24.000	32.000	28.000	25.000	21.000	14.000	28.000	26.000	29.000
100	15.000	33.000	36.000	33.000	31.000	30.000	31.000	27.000	29.000	33.000

			Transform: Untransformed					Rank	1-Tailed
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	Sum	Critical
Control	25.400	1.0000	25.400	14.000	32.000	19.659	10		
100	29.800	1.1732	29.800	15.000	36.000	19.361	10	137.00	82.00

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.83449	0.868	-1.6636	3.03971
F-Test indicates equal variances (p = 0.67)	1.33512	6.54109		

Hypothesis Test (1-tail, 0.05)

Wilcoxon Two-Sample Test indicates no significant differences

ToxCalc v5.0.23

Reviewed by: LS

SHORT-TERM CHRONIC TOXICITY TEST TEMPERATURE RECORD

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Discharger: TVA / Sequoyah
Location:
Bio Log No.: 31349

Test Initiation Date / Time: 5-31-01 1530
Test Protocol Temperature: 25 ± 1°C
Test Organism: C. dubia, P. promelas
(circle as appropriate) M. beryllina, M. bahia
Other:

Sample Identification	Temperature (°C)													
	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	24.9	25.1	25.2	25.0	25.0	24.8	25.0	25.2	25.2	25.4	25.5	25.4	24.7	25.5
25	24.9	25.1	25.1	25.0	24.8	24.8	25.0	25.2	25.3	25.4	25.3	25.4	24.6	25.5
39.2	24.9	25.1	25.3	25.0	25.1	24.7	25.1	25.2	25.3	25.4	25.3	25.4	24.5	25.5
49	24.8	25.1	25.4	25.0	25.2	24.7	25.1	25.2	25.3	25.5	25.4	25.3	24.5	25.5
80	24.7	25.0	25.4	25.1	25.2	24.7	25.2	25.2	25.4	25.5	25.4	25.3	24.5	25.5
100	24.7	25.0	25.6	25.1	25.4	24.7	25.2	25.3	25.3	25.4	25.4	25.3	24.4	25.4
Intake	25.0	25.0	25.8	25.0	25.6	24.8	25.3	25.3	25.5	25.5	25.5	25.5	24.5	25.5
Upstream	25.0	25.0	25.9	24.9	25.7	24.8	25.5	25.3	25.6	25.5	25.5	25.5	24.5	25.5
Analyst	TL	DH	TL	TL	TL	TL	TL	TL	TL	JP	TL	JP	TL	TL

Comments:

Temp mean (Range °C)

25.2 (24.4 - 25.9)

DISCHARGER/LOCATION: TVA / Sequoyah Nuclear Plant
BIOLOGY LOG NUMBER: 31349 TEST INITIATION DATE/TIME: 5-31-01 1530
TEST ORGANISM (Check one): _____ *Ceriodaphnia dubia* (Method 1002.0)[1] ✓ *Pimephales promelas* (Method 1000.0)[1]
SAMPLE DATE: Day 1 5/30 Day 2 5/31 Day 3 6/1 Day 4 6/2 Day 5 6/3 Day 6 6/4 Day 7 ~~6/5~~ 6/5

EnviroData Group
Lexington, Kentucky 40503
(859) 276-3506

EFFLUENT CONC. (%)	pH (Standard Units) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	7.5	7.1	7.6	6.8	7.4	6.8	7.4	6.9	7.4	6.8	7.4	6.8	7.5	7.0
25	7.4	7.1	7.4	6.8	7.3	6.8	7.3	6.9	7.2	6.8	7.2	6.7	7.4	7.0
39.2	7.3	7.0	7.3	6.8	7.2	6.9	7.2	6.9	7.2	6.8	7.1	6.7	7.3	7.0
49	7.2	7.0	7.3	6.8	7.1	7.1	7.1	6.9	7.0	6.7	7.1	6.7	7.2	7.0
80	7.1	7.0	7.2	6.8	6.9	7.0	7.0	6.9	7.0	6.8	7.0	6.7	7.1	6.9
100	7.0	7.0	7.1	6.8	6.8	6.9	6.9	6.9	6.9	6.8	6.9	6.7	7.0	6.9
Intake	7.0	7.0	7.0	6.8	6.9	6.8	7.0	6.9	7.0	6.8	7.0	6.7	7.0	6.9
Upstream	7.1	7.0	7.1	6.8	7.3	6.8	7.3	6.9	7.1	6.8	7.3	6.7	7.2	6.9
Analyst	DH	DH	TL	TL	TL	TL	TL	TL	TL	TL	TL	JP	TL *7.3	TL

EFFLUENT CONC. (%)	DISSOLVED OXYGEN (mg/L) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	8.0	7.0	8.1	5.7	8.0	6.3	8.0	6.3	8.0	5.4	7.8	5.2	8.0	6.7
25	7.8	7.0	8.0	5.6	7.8	5.7	7.8	6.1	7.9	5.3	7.8	5.0	7.9	6.6
39.2	7.8	6.8	8.2	5.3	7.8	5.7	7.8	6.0	7.6	5.4	7.8	4.9	7.8	6.5
49	7.8	6.8	8.2	5.6	7.8	6.9	7.8	6.0	7.5	5.5	7.6	4.9	8.0	6.6
80	7.8	6.5	8.2	5.3	7.8	6.8	7.8	5.7	7.8	6.6	7.6	4.9	7.9	6.6
100	7.8	6.4	8.2	5.2	7.8	6.1	7.2	5.7	7.7	5.5	7.4	4.8	7.5	6.3
Intake	8.0	6.6	8.2	5.3	8.0	5.8	7.6	5.7	7.2	4.6	7.2	4.8	7.4	6.1
Upstream	8.1	6.5	8.3	5.3	8.1	5.6	8.3	5.9	7.9	5.3	8.2	4.8	8.1	6.1
Analyst	DH	DH	TL	TL	TL	TL	TL	TL	TL	TL	TL	JP	TL	TL

EFFLUENT (%)	SPECIFIC CONDUCTANCE (µmhos/cm) TEST DAY 1	2	3	4	5	6	7
Control	296	306	303	302	315	307	296
25	277	334	279	329	271	278	263
39.2	266	318	269	302	254	268	278
49	255	299	258	292	244	257	267
80	217	257	224	252	209	224	233
100	193	230	200	226	187	203	212
Intake	200	228	197	218	193	202	212
Upstream	189	224	188	208	184	194	190
Analyst	DH	TL	TL	TL	TL	TL	~~TL~~ JP

Comments:

Total Residual Chlorine: Sample #1: <0.02 Sample #2: <0.02 Sample #3: <0.02 mg/L

#4 <0.02
#5 <0.02
#6 <0.02
#7 <0.02

Control Water Chemistries

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Alkalinity:	41	44	44	44	53	56	47	mg/L
Hardness:	83	82	82	82	83	79	83	mg/L

[1]Toxicity Test Method Manual: EPA 600/4-91/002; Method numbers for chemical parameters are listed on appropriate chemical bench sheets.

Sample treatment with Sodium Thiosulfate? ____ Yes X No

Approved by: LS 6-12-01

\biology\forms\chemical-sheet

SHORT-TERM CHRONIC TOXICITY TEST TEMPERATURE RECORD

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Discharger: TVA/Sequoyah
Location:
Bio Log No.: 31349

Test Initiation Date / Time: ~~TBS~~ 5-31-01 / 1430
Test Protocol Temperature: 25 ± 1°C
Test Organism: (circle as appropriate) *C. dubia*, *P. promelas*, *M. beryllina*, *M. bahia*
Other:

Sample Identification	Temperature (°C)													
	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Control	24.9	24.9	25.2	25.0	25.0	25.0	25.3	25.2	25.2	25.5	25.5	24.7		
25	24.9	24.8	25.1	25.0	24.8	25.0	25.3	25.2	25.3	25.5	25.3	24.6		
39.2	24.9	24.8	25.3	25.0	25.1	25.0	25.4	25.2	25.3	25.5	25.3	24.5		
49	24.8	24.9	25.4	25.1	25.2	25.0	25.4	25.2	25.3	25.5	25.4	24.5		
80	24.7	25.0	25.4	25.1	25.2	25.1	25.5	25.2	25.4	25.5	25.4	24.5		
100	24.7	25.0	25.6	25.0	25.4	25.1	25.6	25.2	25.3	25.4	25.4	24.4		
Intake	25.0	24.8	25.8	25.0	25.6	25.1	25.7	25.2	25.5	25.4	25.5	24.5		
Upstream	25.0	24.6	25.9	24.9	25.7	25.1	25.7	25.3	25.6	25.4	25.5	24.5		
Analyst	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL		

Comments:

Temp mean (Range) °C

25.2 (24.4-25.9) °C

CHEMICAL AND PHYSICAL ANALYSIS DATA SHEET / FRESH WATER

EnviroData Group

2520 Regency Road
Lexington, Kentucky 40503
(859) 276-3506

DISCHARGER/LOCATION: TVA / Sequoyah
BIOLOGY LOG NUMBER: 31349 TEST INITIATION DATE/TIME: 5-31-01 / 1430
TEST ORGANISM (Check one): ✓ *Ceriodaphnia dubia* (Method 1002.0)[1] ____ *Pimephales promelas* (Method 1000.0)[1]
SAMPLE DATE: Day 1 5/30 Day 2 5/31 Day 3 6/1 Day 4 6/2 Day 5 6/3 Day 6 6/4 Day 7 ~~6/5~~

EFFLUENT CONC. (%)	pH (Standard Units) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	7.5	7.5	7.6	7.5	7.4	7.5	7.4	7.5	7.4	7.4	7.4	7.3	7.5	
25	7.4	7.5	7.4	7.6	7.3	7.5	7.3	7.5	7.2	7.5	7.2	7.3	7.4	
39.2	7.3	7.6	7.3	7.6	7.2	7.5	7.2	7.5	7.2	7.5	7.1	7.3	7.5	
49	7.2	7.6	7.3	7.6	7.1	7.5	7.1	7.5	7.0	7.5	7.1	7.4	7.2	
80	7.1	7.6	7.2	7.6	6.9	7.4	7.0	7.5	7.0	7.5	7.0	7.4	7.1	
100	7.0	7.6	7.1	7.6	6.8	7.5	6.9	7.5	6.9	7.5	6.9	7.4	7.0	
Intake	7.0	7.6	7.0	7.6	6.9	7.5	7.0	7.5	7.0	7.5	7.0	7.4	7.0	
Upstream	7.1	7.6	7.7	7.6	7.3	7.5	7.3	7.5	7.1	7.5	7.3	7.4	7.2	
Analyst	DH	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	

EFFLUENT CONC. (%)	DISSOLVED OXYGEN (mg/L) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	8.0	8.0	8.1	7.8	8.0	7.9	8.0	7.9	7.9	7.8	7.8	7.7	8.0	
25	7.8	8.0	8.0	7.9	7.8	8.0	7.8	8.0	7.9	7.8	7.8	7.5	7.9	
39.2	7.8	8.1	8.2	8.0	7.8	8.0	7.8	8.0	7.6	7.8	7.8	7.5	7.8	
49	7.8	8.1	8.2	8.0	7.8	8.0	7.8	8.0	7.5	7.8	7.6	7.6	8.0	
80	7.8	8.1	8.2	8.0	7.8	8.0	7.8	8.0	7.5	7.8	7.6	7.7	7.9	
100	7.8	8.1	8.2	8.0	7.8	8.1	7.2	8.2	7.0	7.8	7.4	7.8	7.5	
Intake	8.0	8.2	8.2	8.0	8.0	8.1	7.6	8.0	7.2	7.8	7.2	7.9	7.4	
Upstream	8.1	8.1	8.3	8.1	8.1	8.1	8.3	8.1	7.9	7.9	8.2	7.8	8.1	
Analyst	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	TL	

EFFLUENT (%)	SPECIFIC CONDUCTANCE (µmhos/cm) TEST DAY 1	2	3	4	5	6	7
Control	296	306	303	302	271 335	307	296
25	277	334	279	329	271	278	263
39.2	266	318	269	302	254	268	278
49	255	299	258	292	244	257	267
80	217	257	224	252	209	226	233
100.	193	230	200	226	187	203	212
Intake	200	228	197	218	193	202	212
Upstream	189	224	188	208	184	194	190
Analyst	TL	TL	TL	TL	TL	TL	dP

Comments:

Total Residual Chlorine: Sample #1: <0.02 mg/L #4 <0.02
Sample #2: <0.02 #5 <0.02
Sample #3: <0.02 mg/L #6 <0.02

Control Water Chemistries

	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	
Alkalinity:	41	44	44	44/53	53	56	47	mg/L
Hardness:	83	82	82	82	83	79	83	mg/L

[1] Toxicity Test Method Manual: EPA 600/4-91/002; Method numbers for chemical parameters are listed on appropriate chemical bench sheets.

Sample treatment with Sodium Thiosulfate? ____ Yes ✓ No

Approved by: LMS 6-12-

I:\biology\forms\chemical-sheet

SQN May 31 - June 7, 2001 INITIAL AND FINAL WATER CEMISTRY (FATHEAD)

Initial Chemistry

Fish - Control	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.2	25.0	25.0	25.2	25.5	24.7	24.7	25.5	25.1
DO	8.0	8.1	8.0	8.0	8.0	7.8	8.0	7.8	8.1	8.0
pH	7.5	7.6	7.4	7.4	7.4	7.4	7.5	7.4	7.6	7.5
Cond	296	306	303	302	315	307	296	296	315	304
Hard	83.0	82.0	82.0	82.0	83.0	79.0	83.0	79	83	82.0
Alk	41.0	44.0	44.0	44.0	53.0	56.0	47.0	41	56	47.0

Concentration 25%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.1	24.8	25.0	25.3	25.3	24.6	24.6	25.3	25.0
DO	7.8	8.0	7.8	7.8	7.9	7.8	7.9	7.8	8.0	7.9
pH	7.4	7.4	7.3	7.3	7.2	7.2	7.4	7.2	7.4	7.3
Cond	277	334	279	329	271	278	263	263	334	290

Concentration 39.2%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.3	25.1	25.1	25.3	25.3	24.5	24.5	25.3	25.1
DO	7.8	8.2	7.8	7.8	7.6	7.8	7.8	7.6	8.2	7.8
pH	7.3	7.3	7.2	7.2	7.2	7.1	7.3	7.1	7.3	7.2
Cond	266	318	269	302	254	268	278	254	318	279

Concentration 49%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.8	25.4	25.2	25.1	25.3	25.4	24.5	24.5	25.4	25.1
DO	7.8	8.2	7.8	7.8	7.5	7.6	8.0	7.5	8.2	7.8
pH	7.2	7.3	7.1	7.1	7.0	7.1	7.2	7.0	7.3	7.1
Cond	255	299	258	292	244	257	267	244	299	267

Concentration 80%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.7	25.4	25.2	25.2	25.4	25.4	24.5	24.5	25.4	25.1
DO	7.8	8.2	7.8	7.8	7.5	7.6	7.9	7.5	8.2	7.8
pH	7.1	7.2	6.9	7.0	7.0	7.0	7.1	6.9	7.2	7.0
Cond	217	257	224	252	209	226	233	209	257	231

Concentration 100%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.7	25.6	25.4	25.2	25.3	25.4	24.4	24.4	25.6	25.1
DO	7.8	8.2	7.8	7.2	7.0	7.4	7.5	7.0	8.2	7.6
pH	7.0	7.1	6.8	6.9	6.9	6.9	7.0	6.8	7.1	6.9
Cond	193	230	200	226	187	203	212	187	230	207
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Hard	68	68	67	71	69	70	70	67	71	69.0
Alk	55	54	50	51	51	66	54	50	66	54.4

Fish Water Chemistry

Intake	0	1	2	3	4	5	6	MIN	MAX		MEAN
Temp	25.0	25.8	25.6	25.3	25.5	25.5	24.5	24.5	25.8		25.3
DO	8.0	8.2	8.0	7.6	7.2	7.2	7.4	7.2	8.2		7.7
pH	7.0	7.0	6.9	7.0	7.0	7.0	7.0	6.9	7.0		7.0
Cond	200	228	197	218	193	202	212	193	228		207
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02
Hard	67	67	71	72	71	72	68	67	72		69.7
Alk	49	51	70	49	60	65	53	49	70		56.7

Upstream	0	1	2	3	4	5	6	MIN	MAX		MEAN
Temp	25.0	25.9	25.7	25.5	25.6	25.5	24.5	24.5	25.9		25.4
DO	8.1	8.3	8.1	8.3	7.9	8.2	8.1	7.9	8.3		8.1
pH	7.1	7.7	7.3	7.3	7.1	7.3	7.2	7.1	7.7		7.3
Cond	189	224	188	208	184	194	190	184	224		197
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02
Hard	66	64	65	68	66	67	65	64	68		65.9
Alk	96	50	50	52	50	47	50	47	96		56.4

Final Chemistry

FISH

Fish - Control	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.1	25.0	24.8	25.2	25.4	25.4	25.5	24.8	25.5		25.2
DO	7.0	5.7	6.3	6.3	5.4	5.2	6.7	5.2	7.0		6.1
pH	7.1	6.8	6.8	6.9	6.8	6.8	7.0	6.8	7.1		6.9

Concentration 25%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.1	25.0	24.8	25.2	25.4	25.4	25.5	24.8	25.5		25.2
DO	7.0	5.6	5.7	6.1	5.3	5.0	6.6	5.0	7.0		5.9
pH	7.1	6.8	6.8	6.9	6.8	6.7	7.0	6.7	7.1		6.9

Concentration 39.2%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.1	25.0	24.7	25.2	25.4	25.4	25.5	24.7	25.4		25.1
DO	6.8	5.3	5.7	6.0	5.4	4.9	6.5	4.9	6.8		5.8
pH	7.0	6.8	6.9	6.9	6.8	6.7	7.0	6.7	7.0		6.9

Concentration 49%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.1	25.0	24.7	25.2	25.5	25.3	25.5	24.7	25.5		25.2
DO	6.8	5.6	6.9	6.0	5.5	4.9	6.6	4.9	6.9		6.0
pH	7.0	6.8	7.1	6.9	6.7	6.7	7.0	6.7	7.1		6.9

Concentration 80%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	25.1	24.7	25.2	25.5	25.3	25.5	24.7	25.5		25.2
DO	6.5	5.3	6.8	5.7	6.6	4.9	6.6	4.9	6.8		6.1

Fish Water Chemistry

pH	7.0	6.8	7.0	6.9	6.8	6.7	6.9	6.7	7.0		6.9

Concentration 100%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	25.1	24.7	25.3	25.4	25.3	25.4	24.7	25.4		25.2
DO	6.4	5.2	6.1	5.7	5.5	4.8	6.3	4.8	6.4		5.7
pH	7.0	6.8	6.9	6.9	6.8	6.7	6.9	6.7	7.0		6.9

Intake	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	25.0	24.8	25.3	25.5	25.5	25.5	24.8	25.5		25.2
DO	6.6	5.3	5.8	5.7	4.6	4.8	6.1	4.6	6.6		5.6
pH	7.0	6.8	6.8	6.9	6.8	6.7	6.9	6.7	7.0		6.8

Upstream	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	24.9	24.8	25.3	25.5	25.5	25.5	24.8	25.5		25.2
DO	6.5	5.3	5.6	5.9	5.3	4.8	6.1	4.8	6.5		5.6
pH	7.0	6.8	6.8	6.9	6.8	6.7	6.9	6.7	7.0		6.8

Test Temperature	Mean	25.2
	Minimum	24.4
	Maximum	25.9

Word Review by: Cue 06-29-01

Excel Reviewed by: Cue 06-29-01

SQN May 31 - June 6, 2001 INITIAL AND FINAL WATER CEMISTRY (CERIO)

Initial Chemistry

CERIO

Control	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.2	25.0	25.3	25.2	25.5		24.9	25.5	25.2
DO	8.0	8.1	8.0	8.0	8.0	7.8		7.8	8.1	8.0
pH	7.5	7.6	7.4	7.4	7.4	7.4		7.4	7.6	7.5
Cond	296	306	303	302	315	307		296	315	305
Hard	83.0	82.0	82.0	82.0	83.0	79.0		79	83	81.8
Alk	41.0	44.0	44.0	44.0	53.0	56.0		41	56	47.0

Concentration 25%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.1	24.8	25.3	25.3	25.3		24.8	25.3	25.1
DO	7.8	8.0	7.8	7.8	7.9	7.8		7.8	8.0	7.9
pH	7.4	7.4	7.3	7.3	7.2	7.2		7.2	7.4	7.3
Cond	277	334	279	329	271	278		271	334	295

Concentration 39.2%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.9	25.3	25.1	25.4	25.3	25.3		24.9	25.4	25.2
DO	7.8	8.2	7.8	7.8	7.6	7.8		7.6	8.2	7.8
pH	7.3	7.3	7.2	7.2	7.2	7.1		7.1	7.3	7.2
Cond	266	318	269	302	254	268		254	318	280

Concentration 49%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.8	25.4	25.2	25.4	25.3	25.4		24.8	25.4	25.3
DO	7.8	8.2	7.8	7.8	7.5	7.6		7.5	8.2	7.8
pH	7.2	7.3	7.1	7.1	7.0	7.1		7.0	7.3	7.1
Cond	255	299	258	292	244	257		244	299	268

Concentration 80%	0	1	2	3	4	5	6	MIN	MAX	MEAN
Temp	24.7	25.4	25.2	25.5	25.4	25.4		24.7	25.5	25.3
DO	7.8	8.2	7.8	7.8	7.5	7.6		7.5	8.2	7.8
pH	7.1	7.2	6.9	7.0	7.0	7.0		6.9	7.2	7.0
Cond	217	257	224	252	209	226		209	257	231

Cerio Water Chemistry

Concentration 100%	0	1	2	3	4	5	6	MIN	MAX		MEAN
Temp	24.7	25.6	25.4	25.6	25.3	25.4		24.7	25.6		25.3
DO	7.8	8.2	7.8	7.2	7.0	7.4		7.0	8.2		7.6
pH	7.0	7.1	6.8	6.9	6.9	6.9		6.8	7.1		6.9
Cond	193	230	200	226	187	203		187	230		207
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02
Hard	68	68	67	71	69	70		67	71		68.8
Alk	55	54	50	51	51	66		50	66		54.5

Intake	0	1	2	3	4	5	6	MIN	MAX		MEAN
Temp	25.0	25.8	25.6	25.7	25.5	25.5		25.0	25.8		25.5
DO	8.0	8.2	8.0	7.6	7.2	7.2		7.2	8.2		7.7
pH	7.0	7.0	6.9	7.0	7.0	7.0		6.9	7.0		7.0
Cond	200	228	197	218	193	202		193	228		206
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02
Hard	67	67	71	72	71	72		67	72		70.0
Alk	49	51	70	49	60	65		49	70		57.3

Upstream	0	1	2	3	4	5	6	MIN	MAX		MEAN
Temp	25.0	25.9	25.7	25.7	25.6	25.5		25.0	25.9		25.6
DO	8.1	8.3	8.1	8.3	7.9	8.2		7.9	8.3		8.2
pH	7.1	7.7	7.3	7.3	7.1	7.3		7.1	7.7		7.3
Cond	189	224	188	208	184	194		184	224		198
TRC	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		<0.02	<0.02		<0.02
Hard	66	64	65	68	66	67		64	68		66.0
Alk	96	50	50	52	50	47		47	96		57.5

Final Chemistry

CERIO

Cerio - Control	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.9	25.0	25.0	25.2	25.5	24.7		24.7	25.5		25.1
DO	8.0	7.8	7.9	7.9	7.8	7.7		7.7	8.0		7.9
pH	7.5	7.5	7.5	7.5	7.4	7.3		7.3	7.5		7.5

Concentration 25%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.8	25.0	25.0	25.2	25.5	24.6		24.6	25.5		25.0
DO	8.0	7.9	8.0	8.0	7.8	7.5		7.5	8.0		7.9
pH	7.5	7.6	7.5	7.5	7.5	7.3		7.3	7.6		7.5

Concentration 39.2%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.8	25.0	25.0	25.2	25.5	24.5		24.5	25.5		25.0
DO	8.1	8.0	8.0	8.0	7.8	7.5		7.5	8.1		7.9
pH	7.6	7.6	7.5	7.5	7.5	7.3		7.3	7.6		7.5

Concentration 49%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.9	25.1	25.0	25.2	25.5	24.5		24.5	25.5		25.0
DO	8.1	8.0	8.0	8.0	7.8	7.6		7.6	8.1		7.9
pH	7.6	7.6	7.5	7.5	7.5	7.4		7.4	7.6		7.5

Concentration 80%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	25.1	25.1	25.2	25.5	24.5		24.5	25.5		25.1
DO	8.1	8.0	8.0	8.0	7.8	7.7		7.7	8.1		7.9
pH	7.6	7.6	7.4	7.5	7.5	7.4		7.4	7.6		7.5

Concentration 100%	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	25.0	25.0	25.1	25.2	25.4	24.4		24.4	25.4		25.0
DO	8.1	8.0	8.1	8.0	7.8	7.8		7.8	8.1		8.0
pH	7.6	7.6	7.5	7.5	7.5	7.4		7.4	7.6		7.5

Intake	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.8	25.0	25.1	25.2	25.4	24.5		24.5	25.4		25.0
DO	8.2	8.0	8.1	8.0	7.8	7.9		7.8	8.2		8.0
pH	7.6	7.6	7.5	7.5	7.5	7.4		7.4	7.6		7.5

Upstream	1	2	3	4	5	6	7	MIN	MAX		MEAN
Temp	24.6	24.9	25.1	25.3	25.4	24.5		24.5	25.4		25.0
DO	8.1	8.1	8.1	8.1	7.9	7.8		7.8	8.1		8.0
pH	7.6	7.6	7.5	7.5	7.5	7.4		7.4	7.6		7.5

Test temperature		
	Mean:	25.0
	Min:	24.4
	Max:	25.5

Cur
06 - 29-01

ANALYTICAL REPORT

2520 Regency Rd.
Lexington, KY 40503
Phone: 859-276-3506
Toll Free: 800-489-3506
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E-mail: info@envirodatagroup.com

Accredited Lab Data for Today's Environment

Tennessee Valley Authority
Attn: Ms. Jennifer Moses
Aquatic Research Laboratory
PO Box 2000
Decatur, AL 35602

cc:

Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4595

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
mple #: 31,349 Sample Description: SQN-DSN 101 TOX						Sampled: 05/30/01 Time:08:10	
alysis Alkalinity, Total				Method	EPA 310.2		
alinity, Total	55	mg/L CaCO3	30	N/A		06/07/01 FCH	
alysis Hardness, Calcium				Method	EPA200.7		
rdness, Calcium	47	mg/L	0.50	N/A		06/04/01 JDS	06/01/01
alysis Total Hardness				Method	SM3113		
rdness, Total	68	mg/L	1.3	N/A		06/05/01	
alysis Hardness, Magnesium				Method	EPA200.7		
dness, Magnesium	21	mg/L	0.05	N/A		06/04/01 JDS	06/01/01
alysis Chlorine, Total Residual				Method	EPA330.4		
orine, Total Residual	< 0.02	mg/L	0.02	N/A		05/31/01 JKP	
alysis Chronic Toxicity				Method	EPA600 MET 10		
Contracted results. Please see attached							
alysis Chronic Toxicity				Method	EPA600 MET 10		
Contracted results. Please see attached							
nple #: 31,350 Sample Description: SQN-TRM 486 TOX						Sampled: 05/30/01 Time:07:45	
lysis Hardness, Calcium				Method	EPA200.7		
dness, Calcium	45	mg/L	0.50	N/A		06/04/01 JDS	06/01/01
lysis Total Hardness				Method	SM3113		
dness, Total	66	mg/L	1.3	N/A		06/05/01	
lysis Hardness, Magnesium				Method	EPA200.7		
dness, Magnesium	21	mg/L	0.05	N/A		06/04/01 JDS	06/01/01
lysis Alkalinity, Total				Method	EPA 310.1		
linity, Total	96	mg/L CaCO3	5.0	N/A		06/11/01 CKM	
lysis Chlorine, Total Residual				Method	EPA330.4		
rine, Total Residual	< 0.02	mg/L	0.02	N/A		05/31/01 JKP	
ple #: 31,351 Sample Description: SQN-INTTOX						Sampled: 05/30/01 Time:08:00	
lysis Alkalinity, Total				Method	EPA 310.2		
inity, Total	49	mg/L CaCO3	30	N/A		06/07/01 FCH	
ysis Hardness, Calcium				Method	EPA200.7		
ness, Calcium	46	mg/L	0.50	N/A		06/04/01 JDS	06/01/01
ysis Total Hardness				Method	SM3113		

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Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4595

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
mple #: 31,351 Sample Description: SQN-INTTOX						Sampled: 05/30/01	Time:08:00
alysis Total Hardness				*Method*	*SM3113*		
rdness, Total	67	mg/L	1.3	N/A		06/05/01	
alysis Hardness, Magnesium				*Method*	*EPA200.7*		
rdness, Magnesium	21	mg/L	0.05	N/A		06/04/01 JDS	06/01/01
alysis Chlorine, Total Residual				*Method*	*EPA330.4*		
orine, Total Residual	< 0.02	mg/L	0.02	N/A		05/31/01 JKP	

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Submitted by: Lisa Sexton
Lisa Sexton
Record Reviewer

: reported on a Dry Weight Basis

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Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4620

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 31,616 Sample Description: SQN-DSN 101 TOX						Sampled: 05/31/01	Time:08:10
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**54**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**48**	mg/L	0.50	N/A		06/05/01 JDS	06/04/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**68**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/05/01 JDS	06/04/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/01/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 31,617 Sample Description: SQN-TRM 486 TOX						Sampled: 05/31/01	Time:07:40
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**50**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**45**	mg/L	0.50	N/A		06/05/01 JDS	06/04/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**64**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**19**	mg/L	0.05	N/A		06/05/01 JDS	06/04/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/01/01 DMH	
Sample #: 31,618 Sample Description: SQN-INT TOX						Sampled: 05/31/01	Time:07:55
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**51**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**47**	mg/L	0.50	N/A		06/05/01 JDS	06/04/01
Analysis Total Hardness				***Method***	*SM3113*		

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Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4620

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 31,618 Sample Description: SQN-INT TOX						Sampled: 05/31/01 Time:07:55	
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**67**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/05/01 JDS	06/04/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/01/01 DMH	

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Lisa Sexton
Record Reviewer

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Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4646

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,056 Sample Description: SQN-DSN 101 TOX						Sampled: 06/01/01 Time:08:45	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**50**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**48**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**67**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/02/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,057 Sample Description: SQN-TRM 468 TOX						Sampled: 06/01/01 Time:08:05	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**50**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**46**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**65**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**19**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/02/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,058 Sample Description: SQN-INT TOX						Sampled: 06/01/01 Time:08:45	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		

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Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4646

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,058 Sample Description: SQN-INT TOX						Sampled: 06/01/01 Time:08:45	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**70**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**51**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**71**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/02/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							

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Lisa Sexton
Record Reviewer

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Decatur, AL 35602

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Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4647

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,059 Sample Description: SQN-DSN 101 TOX						Sampled: 06/02/01	Time:07:15
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	51	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	50	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	71	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	21	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	< 0.02	mg/L	0.02	N/A		06/03/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,060 Sample Description: SQN-TRM 468 TOX						Sampled: 06/02/01	Time:06:45
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	52	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	48	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	68	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	20	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	< 0.02	mg/L	0.02	N/A		06/03/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,061 Sample Description: SQN-INT TOX						Sampled: 06/02/01	Time:07:05
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		

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Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4647

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,061 Sample Description: SQN-INT TOX						Sampled: 06/02/01	Time:07:05
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**49**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**51**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**72**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**21**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/03/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							

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Lisa Sexton
Record Reviewer

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Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4648

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,062 Sample Description: SQN-DSN 101 TOX						Sampled: 06/03/01	Time:07:15
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**51**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**49**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**69**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/04/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,063 Sample Description: SQN-TRM 486 TOX						Sampled: 06/03/01	Time:06:45
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**50**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**47**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**66**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**19**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/04/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,064 Sample Description: SQN-INT TOX						Sampled: 06/03/01	Time:07:15
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		

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Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4648

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,064 Sample Description: SQN-INT TOX						Sampled: 06/03/01 Time:07:15	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**60**	mg/L CaCO3	30	N/A		06/05/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**51**	mg/L	0.50	N/A		06/06/01 JDS	06/05/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**71**	mg/L	1.3	N/A		06/06/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/06/01 JDS	06/05/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/04/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							

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cc:

Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4695

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,369 Sample Description: SQN-DSN 101 TOX						Sampled: 06/04/01	Time:08:30
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**66**	mg/L CaCO3	30	N/A		06/07/01 FCH	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**50**	mg/L	0.50	N/A		06/12/01 jds	06/11/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**70**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/07/01 JDS	06/06/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/05/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,370 Sample Description: SQN-TRM 486 TOX						Sampled: 06/04/01	Time:07:55
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**47**	mg/L CaCO3	30	N/A		06/07/01 FCH	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**47**	mg/L	0.50	N/A		06/12/01 jds	06/11/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**67**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/07/01 JDS	06/06/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/05/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,371 Sample Description: SQN-INT TOX						Sampled: 06/04/01	Time:08:30
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		

Results reported on a Dry Weight Basis

Printed: 06/19/2001

EnviroData Group

Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4695

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,371 Sample Description: SQN-INT TOX						Sampled: 06/04/01 Time:08:30	
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**65**	mg/L CaCO3	30	N/A		06/07/01 FCH	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**51**	mg/L	0.50	N/A		06/12/01 jds	06/11/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**72**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**21**	mg/L	0.05	N/A		06/07/01 JDS	06/06/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/05/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							

All samples were received intact and properly preserved unless otherwise noted.
The results reported relate only to the samples tested.
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Submitted by: Lisa Sexton

Lisa Sexton
Record Reviewer

esults reported on a Dry Weight Basis

Printed: 06/19/2001

EnviroData Group

Accredited Lab Data for Today's Environment

ANALYTICAL REPORT

2520 Regency Rd.
Lexington, KY 40503
Phone: 859-276-3506
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E-mail: info@envirodatagroup.com

Tennessee Valley Authority
Attn: Ms. Jennifer Moses
Aquatic Research Laboratory
PO Box 2000
Decatur, AL 35602

cc:

Project Name: Sequoyah Nuc. Plant
Project #:
Contract #: 1086
Chain of Custody #: 4781

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,752 Sample Description: SQN-DSN 101 TOX						Sampled: 06/05/01	Time:08:45
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**54**	mg/L CaCO3	30	N/A		06/12/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**49**	mg/L	0.50	N/A		06/08/01 CRF	06/07/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**70**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**21**	mg/L	0.05	N/A		06/08/01 CRF	06/07/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/06/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,753 Sample Description: SQN-TRM 486 TOX						Sampled: 06/05/01	Time:08:15
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**50**	mg/L CaCO3	30	N/A		06/12/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**45**	mg/L	0.50	N/A		06/08/01 CRF	06/07/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**65**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/08/01 CRF	06/07/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/06/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Sample #: 32,754 Sample Description: SQN-INT TOX						Sampled: 06/05/01	Time:08:30
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		

esults reported on a Dry Weight Basis

Printed: 06/14/2001

EnviroData Group

Tennessee Valley Authority
Project Name: Sequoyah Nuc. Plant
Project #:

Contract #: 1086
Chain of Custody #: 4781

	Result	Units	RL	Client Limit	Qualifiers	Analyzed/Analyst	Extracted
Sample #: 32,754 Sample Description: SQN-INT TOX						Sampled: 06/05/01	Time:08:30
Analysis Alkalinity, Total				***Method***	*EPA 310.2*		
Alkalinity, Total	**53**	mg/L CaCO3	30	N/A		06/12/01 PLF	
Analysis Hardness, Calcium				***Method***	*EPA200.7*		
Hardness, Calcium	**48**	mg/L	0.50	N/A		06/08/01 CRF	06/07/01
Analysis Total Hardness				***Method***	*SM3113*		
Hardness, Total	**68**	mg/L	1.3	N/A		06/11/01	
Analysis Hardness, Magnesium				***Method***	*EPA200.7*		
Hardness, Magnesium	**20**	mg/L	0.05	N/A		06/08/01 CRF	06/07/01
Analysis Chlorine, Total Residual				***Method***	*EPA330.4*		
Chlorine, Total Residual	**< 0.02**	mg/L	0.02	N/A		06/06/01 DMH	
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							
Analysis Chronic Toxicity				***Method***	*EPA600 MET 10*		
Sub Contracted results. Please see attached							

All samples were received intact and properly preserved unless otherwise noted.
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Submitted by: Lisa Sexton

Lisa Sexton
Record Reviewer

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sults reported on a Dry Weight Basis

Printed: 06/14/2001

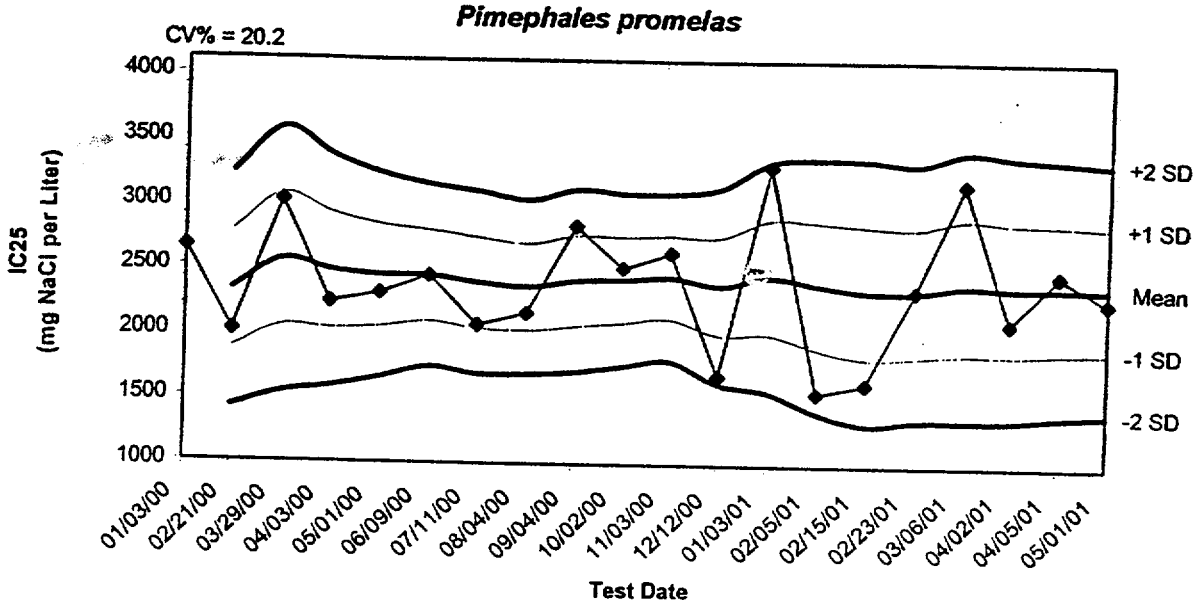
Sequoyah Nuclear Plant Biomonitoring
May 31-June 7, 2001

Appendix C

Reference Toxicant Tests and Control Chart Information

CHRONIC REFERENCE TOXICANT TEST DATA

Pimephales promelas



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
01/03/00	2648.0000					
02/21/00	2009.0000	2328.5000	1876.6588	1424.8175	2780.3412	3232.1825
03/29/00	3016.0000	2557.6667	2048.1254	1538.5841	3067.2080	3576.7493
04/03/00	2235.0000	2477.0000	2030.7751	1584.5502	2923.2249	3369.4498
05/01/00	2306.0000	2442.8000	2048.8638	1654.9277	2836.7362	3230.6723
06/09/00	2442.0000	2442.6667	2090.3193	1737.9719	2795.0140	3147.3614
07/11/00	2063.0000	2388.4286	2036.2218	1684.0150	2740.6354	3092.8421
08/04/00	2156.0000	2359.3750	2023.0996	1686.8243	2695.6504	3031.9257
09/04/00	2837.0000	2412.4444	2059.8919	1707.3394	2764.9970	3117.5495
10/02/00	2510.0000	2422.2000	2088.3818	1754.5635	2756.0182	3089.8365
11/03/00	2630.0000	2441.0909	2118.2648	1795.4387	2763.9170	3086.7431
12/12/00	1683.0000	2377.9167	2000.2471	1622.5776	2755.5862	3133.2557
01/03/01	3298.0000	2448.6923	2006.1230	1563.5538	2891.2616	3333.8309
02/05/01	1559.0000	2385.1429	1897.9670	1410.7912	2872.3187	3359.4945
02/15/01	1631.0000	2334.8667	1826.6316	1318.3966	2843.1017	3351.3367
02/23/01	2343.0000	2335.3750	1844.3691	1353.3632	2826.3809	3317.3868
03/06/01	3165.0000	2384.1765	1867.9345	1351.6925	2900.4184	3416.6604
04/02/01	2104.0000	2368.6111	1863.4478	1358.2844	2873.7745	3378.9378
04/05/01	2473.0000	2374.1053	1882.5909	1391.0766	2865.6196	3357.1339
05/01/01	2271.0000	2368.9500	1889.9899	1411.0298	2847.9101	3326.8702

FATHEAD MINNOW
LARVAL SURVIVAL AND GROWTH TEST
EPA 600/4-91/002, METHOD 1000.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

Test Type: Reference Toxicant
Date/Time Test Terminated: 5-08-01 1530
Toxicant: Sodium Chloride
Organism Batch Number: 0430
Bio. Log No: 1050
Initial Organism Age: < 24 hours
Date/Time Test Initiated: 5/1/01 1500
Dilution Water Used: Moderately Hard
Dilution Water Batch Number on Day: 1: 017 2: 017 3: 019 4: 019 5: 020 6: 020 7: 020
Time of Day Renewed on Day: 1: 1500 2: 1415 3: 1440 4: 1400 5: 1600 6:

Test Conc. (mg/L)	Test Cont. No.	No. of Live Larvae (Days) Sample Dates 5/1 1	5/1 2	5/1 3	5/1 4	5/5 5	5/5 6	5/5 7	Tin No.	Wt. of Tin & Larvae (mg)	Wt. of Tin (mg)	Total Wt. of Larvae (mg)	Mean Wt. of Larvae Using Start Number (mg)	Mean Wt. of Larvae Using End Number (mg)	Average Wt. for Treatment (mg)
Control	1	10	10	10	10	10	10	~~10~~ 9	1	962.64	959.21	3.43	0.343	0.381	Start No.
	2	10	10	10	10	10	10	10	2	964.95	961.44	3.51	0.351	0.351	0.373
	3	10	10	10	10	10	10	10	3	967.21	963.34	3.87	0.387	0.387	End No.
	4	10	10	10	10	10	10	10	4	970.31	966.20	4.11	0.411	0.411	0.383
1000	5	10	10	10	10	10	10	10	5	973.31	968.25	5.06	0.506	0.506	Start No.
	6	10	10	10	10	10	10	10	6	975.01	970.29	4.72	0.472	0.472	0.496
	7	10	10	10	10	10	10	10	7	973.15	967.66	5.49	0.549	0.549	End No.
	8	10	10	10	10	10	10	10	8	971.06	966.48	4.58	0.458	0.458	0.496
2000	9	10	10	10	10	10	10	9	9	971.29	966.74	4.55	0.455	0.506	Start No.
	10	10	10	10	~~9~~ 10	10	9	9	10	975.69	972.46	3.23	0.323	0.359	0.341
	11	10	10	10	9	9	9	8	11	973.65	970.90	2.75	0.275	0.344	End No.
	12	10	10	10	9	8	8	8	12	966.45	963.35	3.10	0.310	0.389	0.400
4000	13	10	10	10	10	9	8	6	13	962.35	960.09	2.26	0.226	0.377	Start No.
	14	10	10	10	10	10	10	8	14	960.05	957.47	2.58	0.258	0.323	0.232
	15	10	9	9	9	9	9	8	15	966.64	964.15	2.49	0.249	0.311	End No.
	16	10	10	10	10	10	10	8	16	969.94	967.99	1.95	0.195	0.244	0.314
7000	17	9	1	1	0	—	—	—	—						Start No.
	18	8	1	1	0	—	—	—	—						~~0.036~~
	19	7	2	2	1	1	1	1	19	~~974.62~~	971.26	~~3.36~~ 0.36	~~0.336~~ 0.036	0.36	End No.
	20	7	2	1	1	0	—	—	—	971.62					0.36
Analyst		DH	TL	TL	TL	DH				JP	TL	JP	JP	JP	JP

Notes:

Approved By LMS

FATHEAD MINNOW
LARVAL SURVIVAL AND GROWTH TEST
EPA 600/4-91/002, METHOD 1000.0

EnviroData Group

2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

Test Type: Reference Toxicant

Toxicant: Sodium Chloride

Bio. Log No: 1050

Date/Time Test Initiated: 5/1/01 15⁰⁰

Date/Time Test Terminated: 5-8-01 1530

Organism Batch Number: 0430

Initial Organism Age: < 24 hours

Dilution Water Used: Moderately Hard

Test Conc. (mg/L)	Test Cont. No.	No. of Live Larvae (Days) Sample Dates 1 (5/1)	2 (5/1)	3 (5/1)	4	5	6	7	Tin No.	Wt. of Tin & Larvae (mg)	Wt. of Tin (mg)	Total Wt. of Larvae (mg)	Mean Wt. of Larvae Using Start Number (mg)	Mean Wt. of Larvae Using End Number (mg)	Average Wt. for Treatment (mg)
10,000	21	1	0	-											Start No.
	22	2	0	-											
	23	4	0	-											End No.
	24	0	-	-											
															Start No.
															End No.
															Start No.
															End No.
															Start No.
															End No.
Analyst															

Notes:

Approved By LMJ

Larval Fish Survival and Growth Test-Start Growth

Start Date:	05/01/2001 15:00	Test ID:	1050	Sample ID:	REF-Ref Toxicant
End Date:	05/08/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	NACL-Sodium chloride
Sample Date:	05/01/2001	Protocol:	EF-EPA/600/4-91/002	Test Species:	PP-Pimephales promelas
Comments:	May 2001				

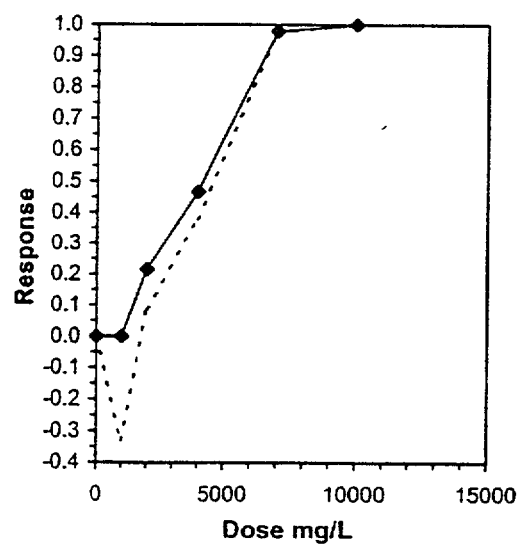
Conc-mg/L	1	2	3	4
Control	0.3430	0.3510	0.3870	0.4110
1000	0.5060	0.4720	0.5490	0.4580
2000	0.4550	0.3230	0.2750	0.3100
4000	0.2260	0.2580	0.2490	0.1950
7000	0.0000	0.0000	0.0360	0.0000
10000	0.0000	0.0000	0.0000	0.0000

			Transform: Untransformed					Isotonic	
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	0.3730	1.0000	0.3730	0.3430	0.4110	8.512	4	0.4346	1.0000
1000	0.4963	1.3304	0.4963	0.4580	0.5490	8.168	4	0.4346	1.0000
2000	0.3408	0.9135	0.3408	0.2750	0.4550	23.131	4	0.3408	0.7840
4000	0.2320	0.6220	0.2320	0.1950	0.2580	12.115	4	0.2320	0.5338
7000	0.0090	0.0241	0.0090	0.0000	0.0360	200.000	4	0.0090	0.0207
10000	0.0000	0.0000	0.0000	0.0000	0.0000	0.000	4	0.0000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.92489	0.868	1.17749	2.46994
Bartlett's Test indicates equal variances (p = 0.16)	6.58079	13.2767		

Linear Interpolation (200 Resamples)

Point	mg/L	SD	95% CL(Exp)		Skew
IC05	1231.49	223.947	1097.53	2769	2.8357
IC10	1462.98	279.633	1195.05	2938.01	1.6271
IC15	1694.47	315.165	1292.58	3124.46	1.1605
IC20	1925.97	351.448	1390.1	3355.94	0.8443
IC25	2271.84	392.486	1419	3476.29	0.3667
IC40	3470.8	280.395	2526.64	4189.59	-0.4478
IC50	4197.59	175.119	3611.89	4685.28	-0.3980



ToxCalc v5.0.23

Reviewed by: LS

CHEMICAL AND PHYSICAL ANALYSIS DATA SHEET / FRESH WATER

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(859) 276-3506

DISCHARGER/LOCATION: Reference Toxicant
BIOLOGY LOG NUMBER: 1050 TEST INITIATION DATE/TIME: 5/1/01 1500
TEST ORGANISM (Check one): ____ *Ceriodaphnia dubia* (Method 1002.0)[1] ✓ *Pimephales promelas* (Method 1000.0)[1]
SAMPLE DATE: Day 1 5/1 Day 2 5/1 Day 3 5/1 Day 4 5/1 Day 5 5/5 Day 6 5/5 Day 7 5/5

EFFLUENT CONC. MG/L	pH (Standard Units) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	7.5	6.9	7.5	6.8	7.5	7.0	7.4	6.9	7.5	6.9	7.6	6.9	7.4	6.8
1000	7.7	7.1	7.6	7.0	7.6	7.2	7.6	7.1	7.7	7.1	7.6	7.1	7.6	7.0
2000	7.7	7.2	7.7	7.1	7.7	7.3	7.6	7.2	7.7	7.2	7.7	7.3	7.7	7.2
4000	7.7	7.2	7.7	7.2	7.7	7.4	7.7	7.3	7.8	7.2	7.7	7.3	7.8	7.4
7000	7.7	7.2	7.7	7.3	7.7	7.4	7.7	7.4	7.8	7.3	7.7	7.4	7.8	7.3
10000	7.7	7.2	7.7	7.3	7.7	—	—	—	—	—	—	—	—	—
Analyst	TL	DH	DH	TL	TL	TL	TL	TL	TL	DH	DH	TL	TL	TL

EFFLUENT CONC. MG/L	DISSOLVED OXYGEN (mg/L) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	8.0	6.4	7.9	6.2	8.0	7.5	7.9	6.6	8.0	6.2	7.8	6.5	8.0	6.8
1000	8.1	6.5	8.0	6.0	8.0	7.5	7.9	6.4	8.0	6.2	7.8	6.5	8.0	7.0
2000	8.1	6.7	7.9	6.1	8.1	7.0	8.0	6.4	8.0	6.3	7.9	6.9	8.0	7.2
4000	8.1	6.9	8.1	6.6	8.1	6.9	8.0	6.7	8.0	6.5	7.9	6.9	8.1	7.0
7000	8.1	6.9	8.1	6.9	8.1	7.2	8.0	6.9	8.0	6.7	7.9	7.1	8.0	6.9
10000	8.0	6.9	8.1	6.9	8.1	—	8.0	—	—	—	—	—	—	—
Analyst	TL	DH	DH	TL	TL	TL	TL	TL	TL	DH	DH	TL	TL	TL

EFFLUENT Mg/l	SPECIFIC CONDUCTANCE (µmhos/cm) TEST DAY 1	2	3	4	5	6	7
Control	342	319	309	310	311	352	307
1000	3500	2880	2250	2250	2500	2700	2620
2000	5350	5730	4130	4120	4420	4920	4710
4000	9350	9390	7740	7860	8200	8570	8540
7000	14400	14460	12890	12960	13250	13600	13610
10000	19000	18810	17570	—	—	—	—
Analyst	TL	DH	TL	TL	TL	DH	TL

EFFLUENT MG/L	TOTAL ALKALINITY (mg/L $CaCO_3$) TEST DAY 1	2	3	4	5	6	7
Control	49	49	56	56	46	46	46
10,000	38						
Analyst	PF	PF	PF	PF	PF	PF	PF

EFFLUENT MG/L	TOTAL HARDNESS (mg/L $CaCO_3$) 1	2	3	4	5	6	7
Control	86	86	83	83	77	77	77
10,000	73						
Analyst	CF	CF	CF	CF	CF	CF	CF

EFFLUENT (%)	TOTAL RESIDUAL CHLORINE (mg/L) TEST DAY 1	2	3	4	5	6	7
~~Control~~							
Analyst							

EFFLUENT (%)	TOTAL AMMONIA (mg/L) 1	2	3	4	5	6	7
~~Control~~							
Analyst							

COMMENTS:

[1]Toxicity Test Method Manual: EPA 600/4-91/002; Method numbers for chemical parameters are listed on appropriate chemical bench sheets.

Sample treatment with Sodium Thiosulfate? ____ Yes ✗ No

Approved by: LS

\biology\forms\chemical-sheet

SHORT-TERM CHRONIC TOXICITY TEST TEMPERATURE RECORD

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Discharger: Reference Toxicant
Location:
Bio Log No.: 1050

Test Initiation Date / Time: 5/01/01 15:00
Test Protocol Temperature: 25 ± 1°C
Test Organism: (circle as appropriate) C. dubia, P. promelas, M. beryllina, M. bahia
Other:

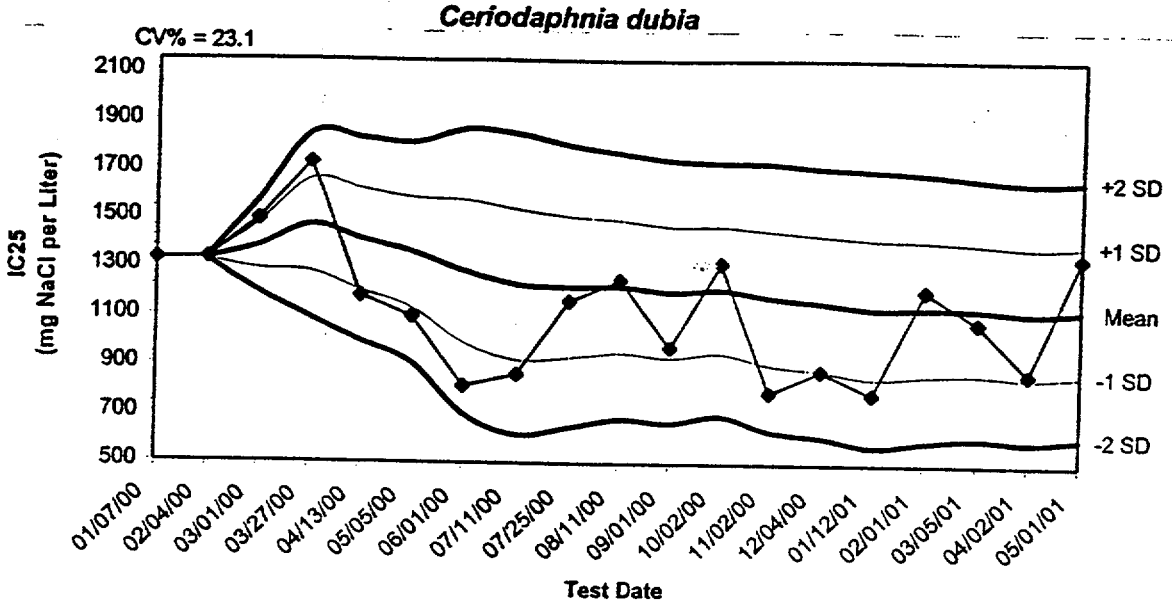
Sample Identification	Temperature (°C)													
	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
~~10~~ Control	25.2	25.2	25.5	25.3	25.3	25.0	25.6	25.2	25.1	25.0	25.2	25.2	25.5	25.3
1000	25.2	25.2	25.5	25.3	25.3	25.0	25.3	25.2	25.1	25.1	25.2	25.1	25.5	25.2
2000	25.2	25.2	25.5	25.3	25.3	24.7	25.2	25.2	25.1	25.2	25.2	24.8	25.5	25.1
4000	25.2	25.2	25.5	25.2	25.3	25.1	25.3	25.2	25.1	25.1	25.2	25.1	25.5	25.2
7000	25.2	25.2	25.5	25.3	25.3	25.1	25.2	25.2	25.2	25.1	25.2	25.2	25.5	25.3
10000	25.2	25.2	25.5	25.3	25.2	—	—	—	—	—	—	—	—	—
Analyst	TL	DH	DH	TL	TL	TL	TL	TL	TL	DH	DH	TL	TL	TL

Comments:

Temp Range °C
25.0-25.5

CHRONIC REFERENCE TOXICANT TEST DATA

Ceriodaphnia dubia



Dates	Values	Mean	-1 SD	-2 SD	+1 SD	+2 SD
01/07/00	1327.0000					
02/04/00	1333.0000	1330.0000	1325.7574	1321.5147	1334.2426	1338.4853
03/01/00	1493.0000	1384.3333	1290.1774	1196.0215	1478.4892	1572.6451
03/27/00	1729.0000	1470.5000	1281.7965	1093.0931	1659.2035	1847.9069
04/13/00	1185.0000	1413.4000	1206.0144	998.6287	1620.7856	1828.1713
05/05/00	1100.0000	1361.1667	1135.8292	910.4918	1586.5041	1811.8416
06/01/00	815.0000	1283.1429	991.7185	700.2942	1574.5672	1865.9915
07/11/00	864.0000	1230.7500	922.9260	615.1019	1538.5740	1846.3981
07/25/00	1167.0000	1223.6667	934.9406	646.2145	1512.3927	1801.1188
08/11/00	1253.0000	1226.6000	954.2284	681.8569	1498.9716	1771.3431
09/01/00	978.0000	1204.0000	934.9535	665.9071	1473.0465	1742.0929
10/02/00	1321.0000	1213.7500	955.0104	696.2707	1472.4896	1731.2293
11/02/00	794.0000	1181.4615	907.7456	634.0296	1455.1775	1728.8935
12/04/00	884.0000	1160.2143	885.4825	610.7507	1434.9461	1709.6779
01/12/01	788.0000	1135.4000	853.7574	572.1148	1417.0426	1698.6852
02/01/01	1211.0000	1140.1250	867.3768	594.6286	1412.8732	1685.6214
03/05/01	1083.0000	1136.7647	872.3142	607.8637	1401.2152	1665.6657
04/02/01	876.0000	1122.2778	858.4635	594.6492	1386.0921	1649.9063
05/01/01	1346.0000	1134.0526	872.5842	611.1159	1395.5210	1656.9894

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET

EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Test Type: Reference Toxicant
Toxicant: Sodium Chloride
Bio. No.: 1049
Date/Time Initial Sample Collected: 5-1-01 1250
Time Renewed on Day 1: N/A 2: 1430 3: 1500
Sample Date on Day 1: 5-1 2: 5-1 3: 5-1

Date/Time Test Initiated: 5-1-01 1630
Date/Time Test Terminated: 5-8-01 1510
Dilution Water Used: Moderately Hard
Source Culture Date: 0420
4: 1830 5: 1545 6: 1610 7:
4: 5-1 5: 5-1 6: 5-1 7: 5-1

NaCl Conc. (mg/L)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		Dilution Water (Top) and Food (Bottom) Batch Numbers									
		017	017	~~017~~ 017	017	017	017	017			
		139	139	140	141	142	142	143			
		1	2	3	4	5	6	7*	8*		
Control (0)	1	0	0	0	11	0	11	14		36	
	2	0	0	0	0	10	12	14		36	
	3	0	0	0	10	0	16	19		45	
	4	0	0	0	9	0	15	15		39	
	5	0	0	0	11	0	15	18		44	
	6	0	0	0	10	0	14	16		40	
	7	0	0	0	0	8	14	16		38	
	8	0	0	0	10	0	14	15		39	
	9	0	0	Ø3	8	0	10	10		31	
	10	0	0	4	0	5	11	0		20	368
No. of Live Adults		10	10	10	10	10	10	10			

NaCl Conc. (mg/L)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		1	2	3	4	5	6	7	8		
600	11	0	0	0	8	0	15	13		36	
	12	0	0	0	7	0	11	15		33	
	13	0	0	0	10	0	15	17		42	
	14	0	0	X	—	—	—	—	—	—	
	15	0	0	3	8	0	12	15		38	
	16	0	0	4	8	0	13	14		~~37~~ 39	
	17	0	0	4	0	7	13	15		39	
	18	0	0	3	9	0	11	16		39	
	19	0	0	3	0	4	12	12		31	
	20	0	0	4	1	9	12	0		26	323
No. of Live Adults		10	10	9Q	9	9	9	9			
Analyst		DH	JP	TL	DH	DH	JP	JP		JP	JP

Comments:

* If necessary

Approved By: LS

pwp\biology\forms\CCD Ref Tox

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET

EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Test Type: Reference Toxicant

Toxicant: Sodium Chloride

Bio. No.: 1049

NaCl Conc. (mg/l)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		1	2	3	4	5	6	7	8		
900	21	0	0	5	8	0	12	14		39	
	22	0	0	0	0	9	12	0		21	
	23	0	0	0	9	0	14	15		38	
	24	0	0	3	10	0	13	16		42	
	25	0	0	5	10	0	13	13		41	
	26	0	0	4	10	0	12	13		39	
	27	0	0	4	8	0	13	13		38	
	28	0	0	3	12	0	14	14		43	
	29	0	0	4	0	8	11	14		37	
	30	0	0	5	0	8	9	12		34	372
No. of Live Adults		10	10	10	10	10	10	10			

NaCl Conc. (mg/L)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult)								Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
		1	2	3	4	5	6	7	8		
1300	31	0	0	5	7	0	10	11		33	
	32	0	0	4	0	8	10	10		32	
	33	0	0	2	10	0	11	11		34	
	34	0	0	0	4	0	6	7		17	
	35	0	0	3	11	0	12	13		39	
	36	0	0	4	7	0	11	11		33	
	37	0	0	3	7	0	12	11		33	
	38	0	0	3	0	8	11	0		22	
	39	0	0	0	6	0	12	12		30	
	40	0	0	5	1	7	11	0		24	297
No. of Live Adults		10	10	10	10	10	10	10			
Analyst		DH	JP	TL	DH	DH	JP	JP		JP	JP

Comments:

Approved By: LS

pwp\biology\forms\CCD Ref Tox

Ceriodaphnia dubia SURVIVAL AND REPRODUCTION TEST DATA SHEET

EPA 600/4-91/002, Method 1002.0

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Test Type: Reference Toxicant

Toxicant: Sodium Chloride

Bio. No.: 1049

NaCl Conc. (mg/L)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
1800	41	0	0	0	0	3	1	0		4	
	42	0	0	0	0	0	5	0		5	
	43	0	0	X	—	—	—	—	—	—	
	44	0	0	0	0	3	7	0		10	
	45	0	0	0	3	0	9	8		20	
	46	0	0	0	2	0	0	1		3	
	47	0	X	—	—	—	—	—	—	—	
	48	0	0	0	0	1	6	8		15	
	49	0	0	0	0	0	0	0		0	
	50	0	0	0	0	5	8	0		13	70
No. of Live Adults		10	9	38	8	8	8	8			

NaCl Conc. (mg/L)	Test Container No.	Number of Live Young For Each Test Day (X denotes dead adult) 1	2	3	4	5	6	7	8	Total No. of Live Young Per Rep.	Total No. of Live Young Per Conc.
2600	51	X	—	—	—	—	—	—	—	—	
	52	0	X	—	—	—	—	—	—	—	
	53	X	—	—	—	—	—	—	—	—	
	54	X	—	—	—	—	—	—	—	—	
	55	X	—	—	—	—	—	—	—	—	
	56	0	0	X	—	—	—	—	—		
	57	0	X	—	—	—	—	—	—	—	
	58	0	X	—	—	—	—	—	—	—	
	59	0	X	—	—	—	—	—	—	—	
	60	0	X	—	—	—	—	—	—	—	—
No. of Live Adults		6	1	0	0	0	0	0			
Analyst		DH	JP	TL	DH	DH	JP	JP		JP	JP

Comments:

Approved By: LS

pwp\biology\forms\CCD Ref Tox

Daphnid Survival and Reproduction Test-Reproduction

Start Date:	05/01/2001 16:30	Test ID:	1049	Sample ID:	REF-Ref Toxicant
End Date:	05/08/2001 15:30	Lab ID:	EDG-Toxicology Laboratory	Sample Type:	NACL-Sodium chloride
Sample Date:	05/01/2001 12:50	Protocol:	EF-EPA/600/4-91/002	Test Species:	CD-Ceriodaphnia dubia
Comments:	May 2001				

Conc-mg/L	1	2	3	4	5	6	7	8	9	10
Control	36.000	36.000	45.000	39.000	44.000	40.000	38.000	39.000	31.000	20.000
600	36.000	33.000	42.000	0.000	38.000	39.000	39.000	39.000	31.000	26.000
900	39.000	21.000	38.000	42.000	41.000	39.000	38.000	43.000	37.000	34.000
1300	33.000	32.000	34.000	17.000	39.000	33.000	33.000	22.000	30.000	24.000
1800	4.000	5.000	0.000	10.000	20.000	3.000	0.000	15.000	0.000	13.000
2600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

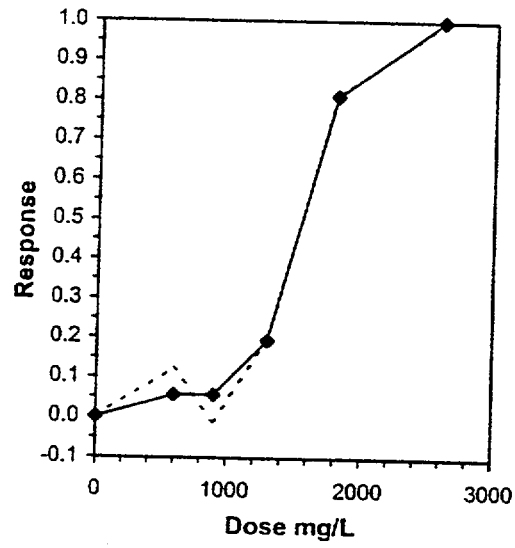
			Transform: Untransformed					Isotonic	
Conc-mg/L	Mean	N-Mean	Mean	Min	Max	CV%	N	Mean	N-Mean
Control	36.800	1.0000	36.800	20.000	45.000	19.376	10	36.800	1.0000
600	32.300	0.8777	32.300	0.000	42.000	38.059	10	34.750	0.9443
900	37.200	1.0109	37.200	21.000	43.000	16.802	10	34.750	0.9443
1300	29.700	0.8071	29.700	17.000	39.000	22.337	10	29.700	0.8071
1800	7.000	0.1902	7.000	0.000	20.000	101.463	10	7.000	0.1902
2600	0.000	0.0000	0.000	0.000	0.000	0.000	10	0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates non-normal distribution (p <= 0.01)	0.88374	0.93	-1.7417	4.98177
Bartlett's Test indicates equal variances (p = 0.19)	6.14661	13.2767		

Linear Interpolation (200 Resamples)

Point	mg/L	SD	95% CL		Skew
IC05*	538.537	353.616	144.679	1197.85	0.0275
IC10	1029.11	303.001	289.357	1325.31	-0.8495
IC15	1174.85	233.828	434.036	1360.33	-1.6778
IC20	1305.73	166.735	578.714	1400.3	-2.8290
IC25	1346.26	80.3174	1165.73	1433.54	-4.3878
IC40	1467.84	40.0626	1393.07	1539.82	0.0433
IC50	1548.9	37.8146	1479.64	1619.26	0.3442

* indicates IC estimate less than the lowest concentration



ToxCalc v5.0.23

Reviewed by: hS

CHEMICAL ANALYSIS DATA SHEET / FRESH WATER

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-29
(859) 276-3506

DISCHARGER/LOCATION: Reference Toxicant / NaCl
BIOLOGY LOG NUMBER: 1049 TEST INITIATION DATE/TIME: 5-1-01 1630
TEST ORGANISM (Check one): X *Ceriodaphnia dubia* (Method 1002.0)[1] ____ *Pimephales promelas* (Method 1000.0)[1]
SAMPLE DATE: Day 1 5-1 Day 2 5-1 Day 3 5-1 Day 4 5-1 Day 5 5-1 Day 6 5-1 Day 7 5-1

EFFLUENT CONC. (%)	pH (Standard Units) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	7.6	7.5	7.6	7.5	7.5	7.4	7.4	7.5	7.5	7.5	7.4	7.4	7.4	7.4
600	7.7	7.7	7.6	7.7	7.6	7.6	7.5	7.6	7.6	7.6	7.5	7.5	7.5	7.5
900	7.7	7.7	7.7	7.7	7.6	7.7	7.6	7.6	7.6	7.6	7.5	7.6	7.5	7.6
1300	7.7	7.7	7.7	7.7	7.6	7.7	7.7	7.6	7.7	7.7	7.6	7.7	7.5	7.6
1800	7.8	7.7	7.8	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.6	7.7	7.6	7.7
2600	7.8	7.7	7.8	7.7	7.7	7.8	7.7	—	—	—	—	—	—	—
Analyst	DH	DH	DH	JP	JP	TL	TL	DH	DH	DH	DH	JP	JP	JP

EFFLUENT CONC. (%)	DISSOLVED OXYGEN (mg/L) TEST DAY 1 PRE	1 POST	2 PRE	2 POST	3 PRE	3 POST	4 PRE	4 POST	5 PRE	5 POST	6 PRE	6 POST	7 PRE	7 POST
Control	8.0	7.9	8.0	8.0	8.0	8.0	8.0	7.7	7.8	7.6	7.8	7.8	7.8	7.7
600	8.1	8.0	8.1	8.0	8.0	8.0	8.0	7.9	7.8	7.7	7.8	7.9	7.9	7.7
900	8.1	8.0	8.1	8.1	8.1	8.0	8.2	7.9	7.8	7.7	7.8	7.9	7.9	7.7
1300	8.1	8.1	8.1	8.1	8.1	8.1	8.1	7.9	7.8	7.7	7.8	7.9	7.9	7.7
1800	8.1	8.1	8.0	8.2	8.1	8.1	8.1	7.9	7.8	7.7	7.8	8.0	7.9	8.0
2600	8.1	8.1	8.0	8.1	8.1	8.1	8.2	—	—	—	—	—	—	—
Analyst	DH	DH	DH	JP	JP	TL	TL	DH	DH	DH	DH	JP	JP	JP

EFFLUENT (%)	SPECIFIC CONDUCTANCE (µmhos/cm) TEST DAY 1	2	3	4	5	6	7
Control	302	303	340	412	290	300	301
600	1494	1494	1598	1508	1467	1453	1420
900	2880	2820	2520	3000	2910	2920	2990
1300	3570	3780	3420	3930	3610	3650	3550
1800	4720	4540	4600	5150	4850	4470	4460
2600	6400	6150	5730	6590	—	—	—
Analyst	DH	DH	JP	TL	DH	DH	JP

EFFLUENT (%)	TOTAL ALKALINITY (mg/L $CaCO_3$) TEST DAY 1	2	3	4	5	6	7
Control	49	49	49	49	49	49	49
2600 45/L	45	45	45	45	45	45	45
Analyst	PF	PF	PF	PF	PF	PF	PF

EFFLUENT (%)	TOTAL HARDNESS (mg/L $CaCO_3$) 1	2	3	4	5	6	7
Control	86	86	86	86	86	86	86
2600 82/L	82	82	82	82	82	82	82
Analyst	CF	CF	CF	CF	CF	CF	CF

EFFLUENT (%)	TOTAL RESIDUAL CHLORINE (mg/L) TEST DAY 1	2	3	4	5	6	7
~~Control~~							
Analyst							

EFFLUENT (%)	TOTAL AMMONIA (mg/L) 1	2	3	4	5	6	7
~~Control~~							
Analyst							

COMMENTS:

Toxicity Test Method Manual: EPA 600/4-91/002; Method numbers for chemical parameters are listed on appropriate chemical bench sheets.

Sample treatment with Sodium Thiosulfate? ____ Yes X No

Approved by: LS

I:\biology\forms\chemical-sheet

SHORT-TERM CHRONIC TOXICITY TEST TEMPERATURE RECORD

EnviroData Group
2520 Regency Road
Lexington, Kentucky 40503-2921
(606) 276-3506

Discharger: Reference Toxicant
Location:
Bio Log No.: 1049

Test Initiation Date / Time: 5-1-01 1630
Test Protocol Temperature: 25 ± 1°C
Test Organism: (circle as appropriate) C. dubia, P. promelas, M. beryllina, M. bahia
Other:

Sample Identification	Temperature (°C)													
	Day 1		Day 2		Day 3		Day 4		Day 5		Day 6		Day 7	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
CONTROL	25.6	25.2	25.5	25.5	25.4	25.1	25.6	25.1	25.5	25.0	25.4	25.1	25.0	25.5
600	25.6	25.2	25.5	25.6	25.4	25.0	25.6	25.1	25.5	25.1	25.4	25.1	25.1	25.5
900	25.6	25.2	25.5	25.6	25.6	25.2	25.6	25.1	25.5	25.1	25.4	25.2	25.1	25.5
1300	25.6	25.2	25.5	25.6	25.5	25.2	25.7	25.1	25.5	25.1	25.4	25.2	25.2	25.4
1800	25.6	25.2	25.5	25.6	25.5	25.2	25.7	25.1	25.5	25.1	25.4	25.3	25.3	25.4
2600	25.6	25.2	25.5	25.5	25.6	25.3	25.7	—	—	—	—	—	—	—
Analyst	DH	DH	DH	JP	JP	TL	TL	DH	klb	DH	DH	JP	JP	JP

Comments:

Temp Range °C
25.0 - 25.7