Stoller

established 1959

Task Order LM00-502
Control Number 10-0852

August 12, 2010

Mr. Steve Roberts
Ohio EPA
8955 East Main Street
Reynoldsburg, OH 43068

Dear Mr. Roberts:

DMR-QA STUDY 30 RESULTS – FERNALD PRESERVE – NPDES PERMIT NO. OH0009580

Enclosed are copies of the NPDES Permittee Data Report Forms and a copy of the Chemistry/Microbiology and Wet Checklists for each laboratory used by the Fernald Preserve.

If you have any questions, please contact Ms. Mary Sizemore at (513) 648-3166.

Sincerely,

Frank Johnston
Fernald Preserve Site Manager

FLJ/MES:dsm

Enclosure

cc: <u>with enclosure: (electronic)</u>
F. Johnston, Stoller
M. Sizemore, Stoller
C. White, Stoller
S. Donivan, Stoller
K. Gunter, USEPA – Region V
AR Coordinator, Stoller (Thru W. Sumner – (2 copies)
rc-fernald

cc: <u>without enclosure: (electronic)</u>
J. Powell, DOE-LM

The S.M. Stoller Corporation 10995 Hamilton Cleves Highway Harrison, OH 45030 (513) 648-5294 Fax: (513) 648-3252

GEL LAB

Permittee name Fernald Reserve State OH NPDES Permit No. 0009580 EPA Lab Code SC00012

Chemistry/Microbiology Analyte Checklist

DMR-QA Study 30

Analyte Test	Test Required	Laboratory's Graded Result: Acceptable	Laboratory's Graded Result: Not Acceptable (Corrective Action Required)
Microbiology			
E. coli.	☐	☐	☐
Fecal Coliform, MF or MPN	☐	☐	☐
Total Coliform, MF or MPN	☐	☐	☐
Trace Metals			
Aluminum	☐	☐	☐
Antimony	☐	☐	☐
Arsenic	☐	☐	☐
Barium	☐	☐	☐
Beryllium	☐	☐	☐
Cadmium	☐	☐	☐
Chromium, total	☐	☐	☐
Chromium, hexavalent	☐	☐	☐
Cobalt	☐	☐	☐
Copper	☐	☐	☐
Iron	☐	☐	☐
Lead	☐	☐	☐
Manganese	☒	☐	☐
Mercury	☒	☐	☐
Mercury (Low Level)	☒	☐	☐
Molybdenum	☐	☐	☐
Nickel	☐	☐	☐
Selenium	☐	☐	☐
Silver	☐	☐	☐
Thallium	☐	☐	☐
Vanadium	☐	☐	☐
Zinc	☐	☐	☐
Demands			
5-day BOD	☐	☐	☐
5-day Carbonaceous BOD	☒	☐	☐
COD	☐	☐	☐
TOC	☐	☐	☐
Minerals			
Alkalinity, total ($CaCO_3$)	☐	☐	☐
Chloride	☐	☐	☐
Fluoride	☐	☐	☐
Hardness, total ($CaCO_3$)	☐	☐	☐
Specific conductance (25°C)	☐	☐	☐
Sulfate	☐	☐	☐
Total Dissolved Solids (180°C)	☐	☐	☐
Nutrients			
Ammonia as N	☐	☐	☐
Nitrate as N	☐	☐	☐
Nitrite as N	☐	☐	☐
Orthophosphate as P	☐	☐	☐
Total Kjeldahl-Nitrogen as N	☐	☐	☐
Total Phosphorus as P	☐	☐	☐
Misc. Analytes			
Non-Filterable Residue (TSS)	☒	☐	☐
Oil and Grease	☒	☐	☐
pH	☐	☐	☐
Total Cyanide	☐	☐	☐
Total Phenolics (4-AAP)	☐	☐	☐
Total Residual Chlorine	☐	☐	☐
Total Residual Chlorine (Low Level)	☐	☐	☐
Settleable Solids	☐	☐	☐
Turbidity	☐	☐	☐

Signature Mary Sizemore

Date 3-10-10

Use a separate checklist for EACH lab used

Permittee Name: SM Stoller **Permit Number:** OH0009580 **EPA Lab Code:** SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 30

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Minerals			
Alkalinity as CaCO3			
Chloride			
Conductivity at 25°C			
Fluoride			
Potassium			
Sodium			
Sulfate			
Total Dissolved Solids at 180°C			
Total Solids at 105°C			
Hardness			
Non-Filterable Residue (TSS)			
EPA 160.2	☐	☒	☐
SM2540D	☐	☒	☐
Calcium			
Magnesium			
Calcium Hardness as CaCO3			
Total Hardness as CaCO3			
pH			
pH			
Settleable Solids			
Settleable Solids			
Solids Concentrate			
Non-Filterable Residue (TSS)			
Total Dissolved Solids at 180°C			
Total Solids at 105°C			
Solids			
Non-Filterable Residue (TSS)			
Total Dissolved Solids at 180°C			
Total Solids at 105°C			
Simple Nutrients			
Ammonia as N			
Nitrate + Nitrite as N			
Nitrate as N			
ortho-Phosphate as P			
Complex Nutrients			
Total Kjeldahl Nitrogen			

Permittee Name: SM Stoller Permit Number: OH0009580 EPA Lab Code: SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 30

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Total phosphorus as P			
Nitrite Nitrite as N			
Demand BOD CBOD SM5210B COD TOC	☐	☒	☐
Oil & Grease Concentrate Oil & Grease (Gravimetric)			
Oil & Grease Oil & Grease (Gravimetric) EPA 1664A Oil & Grease (Infrared)	☐	☒	☐
Trace Metals Aluminum Antimony Arsenic Barium Beryllium Boron Cadmium Chromium Cobalt Copper Iron Lead Manganese			
EPA 200.7	☐	☒	☐
EPA 200.8	☐	☒	☐
EPA 6010B	☐	☒	☐
EPA 6010C	☐	☒	☐
EPA 6020	☐	☒	☐
EPA 6020A	☐	☒	☐
Molybdenum Nickel Selenium Silver			

Permittee Name: SM Stoller **Permit Number:** OH0009580 **EPA Lab Code:** SC00012

Chemistry/Microbiology Analyte Checklist

DMRQA Study 30

Analyte Test / Method	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Strontium Thallium Vanadium Zinc			
Mercury Mercury			
EPA 1631E	☐	☒	☐
EPA 245.1	☐	☒	☐
EPA 245.2	☐	☒	☐
EPA 7470	☐	☒	☐
EPA 7470A	☐	☒	☐
Low-Level Mercury Low Level Mercury			
Hexavalent Chromium Hexavalent Chromium			
Turbidity Turbidity			
Total Cyanide Cyanide, total			
Total Phenolics (4-AAP) Phenolics, total			
Total Residual Chlorine Total Residual Chlorine			
Low-Level Total Residual Chlorine Low Level Total Residual Chlorine			
WasteWatR™ Coliform MicrobE™ Total Coliforms (MF) Fecal Coliforms (MF) E.coli (MF) Total Coliforms (MPN) Fecal Coliforms (MPN) E.coli (MPN)			

Jannie Shaw-Busby
Print Name

QA Officer
Signature/Title

7/27/10
Date

Use a separate checklist for EACH lab used

Fernald LAB

Permittee name Fernald Preserve State OH NPDES Permit No. 0009580 EPA Lab Code OH01006

Chemistry/Microbiology Analyte Checklist

DMR-QA Study 30

Analyte Test	Test Required	Laboratory's Graded Result	
		Acceptable	Not Acceptable (Corrective Action Required)
Microbiology			
E. coli.	☐	☐	☐
Fecal Coliform, MF or MPN	☐	☐	☐
Total Coliform, MF or MPN	☐	☐	☐
Trace Metals			
Aluminum	☐	☐	☐
Antimony	☐	☐	☐
Arsenic	☐	☐	☐
Barium	☐	☐	☐
Beryllium	☐	☐	☐
Cadmium	☐	☐	☐
Chromium, total	☐	☐	☐
Chromium, hexavalent	☐	☐	☐
Cobalt	☐	☐	☐
Copper	☐	☐	☐
Iron	☐	☐	☐
Lead	☐	☐	☐
Manganese	☐	☐	☐
Mercury	☐	☐	☐
Mercury (Low Level)	☐	☐	☐
Molybdenum	☐	☐	☐
Nickel	☐	☐	☐
Selenium	☐	☐	☐
Silver	☐	☐	☐
Thallium	☐	☐	☐
Vanadium	☐	☐	☐
Zinc	☐	☐	☐
Demands			
5-day BOD	☐	☐	☐
5-day Carbonaceous BOD	☒	☐	☐
COD	☐	☐	☐
TOC	☐	☐	☐
Minerals			
Alkalinity, total ($CaCO_3$)	☐	☐	☐
Chloride	☐	☐	☐
Fluoride	☒	☐	☐
Hardness, total ($CaCO_3$)	☐	☐	☐
Specific conductance (25°C)	☐	☐	☐
Sulfate	☐	☐	☐
Total Dissolved Solids (180°C)	☐	☐	☐
Nutrients			
Ammonia as N	☐	☐	☐
Nitrate as N	☐	☐	☐
Nitrite as N	☐	☐	☐
Orthophosphate as P	☒	☐	☐
Total Kjeldahl-Nitrogen as N	☐	☐	☐
Total Phosphorus as P	☐	☐	☐
Misc. Analytes			
Non-Filterable Residue (TSS)	☒	☐	☐
Oil and Grease	☐	☐	☐
pH	☒	☐	☐
Total Cyanide	☐	☐	☐
Total Phenolics (4-AAP)	☐	☐	☐
Total Residual Chlorine	☐	☐	☐
Total Residual Chlorine (Low Level)	☐	☐	☐
Settleable Solids	☐	☐	☐

Fernald Lab

Permittee name Fernald Preserve State OH NPDES Permit No. 0009580 EPA-Lab Code OH01006

WET Organisms/Test Conditions/End Points Checklist

DMR-QA Study 30

Analyte Number	Organisms / Conditions	End Points	Test Required	Laboratory's Graded Result	
				Acceptable	Not Acceptable (Corrective Action Required)
Test Code 13/EPA Method 2000					
754	Fathead minnow (*Pimephales promelas*) - MHSF 25°C	LC50	☐	☐	☐
Test Code 14/EPA Method 2000					
755	Fathead minnow (*Pimephales promelas*) - 20% DMW	LC50	☐	☐	☐
Test Code 15/EPA Method 1000					
756	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC SURVIVAL	☐	☐	☐
808	Fathead minnow (*Pimephales promelas*) - MHSF	IC25 (ON) GROWTH	☐	☐	☐
810	Fathead minnow (*Pimephales promelas*) - MHSF	NOEC (ON) GROWTH	☐	☐	☐
Test Code 16/EPA Method 1000					
759	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC SURVIVAL	☐	☐	☐
812	Fathead minnow (*Pimephales promelas*) - 20% DMW	IC25 (ON) GROWTH	☐	☐	☐
814	Fathead minnow (*Pimephales promelas*) - 20% DMW	NOEC (ON) GROWTH	☐	☐	☐
Test Code 19/EPA Method 2002					
764	*Ceriodaphnia dubia* - MHSF 25°C	LC50	☐	☐	☐
Test Code 20/EPA Method 2002					
765	*Ceriodaphnia dubia* - 20% DMW 25°C	LC50	☐	☐	☐
Test Code 21/EPA Method 1002					
766	*Ceriodaphnia dubia* - MHSF	NOEC SURVIVAL	☐	☐	☐
767	*Ceriodaphnia dubia* - MHSF	IC25 REPRODUCTION	☐	☐	☐
768	*Ceriodaphnia dubia* - MHSF	NOEC REPRODUCTION	☐	☐	☐
Test Code 22/EPA Method 1002					
769	*Ceriodaphnia dubia* - 20% DMW	NOEC SURVIVAL	☐	☐	☐
770	*Ceriodaphnia dubia* - 20% DMW	IC25 REPRODUCTION	☐	☐	☐
771	*Ceriodaphnia dubia* - 20% DMW	NOEC REPRODUCTION	☐	☐	☐
Test Code 32/EPA Method 2021					
788	*Daphnia magna* - MHSF 25°C	LC50	☐	☐	☐
Test Code 38/EPA Method 2021					
794	*Daphnia pulex* - MHSF 25°C	LC50	☐	☐	☐
Test Code 42/EPA Method 2007					
798	Mysid (*Mysidopsis bahia*) 25°C	LC50	☐	☐	☐
Test Code 43/EPA Method 1007					
799	Mysid (*Mysidopsis bahia*)	NOEC SURVIVAL	☐	☐	☐
816	Mysid (*Mysidopsis bahia*)	IC25 (ON) GROWTH	☐	☐	☐
818	Mysid (*Mysidopsis bahia*)	NOEC (ON) GROWTH	☐	☐	☐
Test Code 44/EPA Method 2006					
803	Inland silverside (*Menidia berylina*) 25°C	LC50	☐	☐	☐
Test Code 45/EPA Method 1006					
824	Inland silverside (*Menidia berylina*)	NOEC SURVIVAL	☐	☐	☐
825	Inland silverside (*Menidia berylina*)	IC25 (ON) GROWTH	☐	☐	☐
826	Inland silverside (*Menidia berylina*)	NOEC (ON) GROWTH	☐	☐	☐
Test Code 46/EPA Method 2004					
804	Sheepshead minnow (*Cyprinodon variegatus*) 25°C	LC50	☐	☐	☐
Test Code 47/EPA Method 1004					
805	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC SURVIVAL	☐	☐	☐
820	Sheepshead minnow (*Cyprinodon variegatus*)	IC25 (ON) GROWTH	☐	☐	☐
822	Sheepshead minnow (*Cyprinodon variegatus*)	NOEC (ON) GROWTH	☐	☐	☐

ERA
A Waters Company

SM Stoller
Preliminary Limits
For Study DMR-QA 30

LABORATORY INFORMATION

SM Stoller 10995 Hamilton-Cleves Hwy Harrison, OH 45030	**Customer ID:** S991968 **Fax:** **Email:** cathy.glassmeyer@lm.doe.gov **Phone:** (513) 648-5927	**USEPA ID:** **Contact:** Kathy Leslie **Contact Title:** **Approval Date:** 5/26/2010	

REGULATORY AGENCY INFORMATION

There are no agencies listed to receive reports.

THIRD PARTY INFORMATION

There are no third parties listed to receive reports.

Study DMR-QA 30
Complete Preliminary Report

Minerals (cat# 581)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Alkalinity as CaCO3	mg/L		80.3	70.8 - 88.7	
Chloride	mg/L		48.0	40.7 - 55.9	
Conductivity at 25°C	µmhos/cm		Study mean	Limits based on study data.	
Fluoride	mg/L	2.31	2.21	1.81 - 2.61	
Potassium	mg/L		27.1	22.4 - 32.3	
Sodium	mg/L		66.0	56.0 - 75.7	
Sulfate	mg/L		27.7	22.0 - 32.6	
Total Dissolved Solids at 180°C	mg/L		Study mean	Limits based on study data.	
Total Solids at 105°C	mg/L		315	274 - 352	

Hardness (cat# 580)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Non-Filterable Residue (TSS)	mg/L		55.6	43.7 - 63.2	
Calcium	mg/L		68.5	61.3 - 77.6	
Magnesium	mg/L		28.9	24.8 - 33.2	
Calcium Hardness as CaCO3	mg/L		171	153 - 194	
Total Hardness as CaCO3	mg/L	280.8	290	255 - 330	

pH (cat# 577)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
pH	S.U.	6.35	6.30	6.10 - 6.50	

Solids Concentrate (cat# 4030)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Non-Filterable Residue (TSS)	mg/L	65.4	66.5	53.3 - 74.8	

Study DMR-QA 30
Complete Preliminary Report

Solids Concentrate (cat# 4030)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Total Dissolved Solids at 180°C	mg/L	384.6	Study mean	Limits based on study data.	
Total Solids at 105°C	mg/L	450.0	452	405 - 497	

Complex Nutrients (cat# 579)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
Total Kjeldahl Nitrogen	mg/L		6.44	4.33 - 8.47	
Total phosphorus as P	mg/L	3.32	3.14	2.55 - 3.78	

Demand (cat# 578)

Analyte	Units	Reported Value	Preliminary Assigned Value	Preliminary Acceptance Limits	Method Description
BOD	mg/L		63.3	31.8 - 94.8	
CBOD	mg/L	51.2	54.5	24.4 - 84.6	
COD	mg/L		102	75.8 - 119	
TOC	mg/L		40.4	33.7 - 46.7	

SAMPLE COLLECTED:	DATE:	TIME:	BADGE NO.:	TEST STARTED:	DATE: 4/1/10	TIME: 0845	BADGE NO.:
	NAME: N/A				NAME: Kathy Leslie		
SAMPLE RECEIVED:	DATE:	TIME:	BADGE NO.:	TEST COMPLETED:	DATE: 4/6/10	TIME: 0900	BADGE NO.:
	NAME: N/A				NAME: Kathy Leslie		

SAMPLE ID	BOTTLE NO.	SAMPLE VOL. (mL)	INITIAL DO	INITIAL DO MIX	5-DAY DO	DIFF.	DIFF. -(B1-B2)F	DILUTION FACTOR	BOD	BOD AVERAGE
BLK	1	300		8.63	8.48	0.15				
↓	2	↓		8.64	8.50	0.14	0.14			
↓	3	↓		8.64	8.50	0.14				
SEED BLK	4	3		8.64	8.06	0.58				
↓	5	↓		8.64	8.03	0.611	0.61			
↓	6	↓		8.64	8.01	0.63				
ERA-WP182 *	7	5		8.70	7.18	~~1.52~~	0.91	60	~~54.6~~	
↓	8	10		8.71	6.43	2.28	1.67	30	50.1	
↓	9	15		8.70	5.73	2.97	2.36	20	47.2	48.1
↓	10	20		8.72	5.02	3.70	3.09	15	46.4	CBOD
↓	11	25		8.72	4.05	4.67	4.06	12	48.7	
↓	12	50		8.71	6.03	~~8.68~~	8.07	6	~~48.4~~	
DMRQA-30 *	13	5		8.73	7.15	~~1.58~~	0.97	60	~~58.2~~	
↓	14	10		8.71	6.36	2.35	1.74	30	52.2	
↓	15	15		8.72	5.51	3.21	2.60	20	52.0	51.2
↓	16	20		8.72	4.76	3.96	3.35	15	50.3	CBOD
↓	17	25		8.72	3.93	4.79	4.18	12	50.2	
↓	18	50		8.70	-0.02	—	—	6	—	
LCS "NOV" *	19	40		8.74	5.89	2.85	2.24	7.5	16.8	
138280	20	40		8.72	5.90	2.82	2.21	7.5	16.6	16.6
↓	21	50		8.72	5.40	3.32	2.71	6	16.3	CBOD

CALCULATION: (B1-B2)f. B = DO of seed water before and after incubation. F = mL of seed concentrate ÷ mL of seed water that produced 40-70% depletion.

13 mL SEED ADDED

CROSSCHECKED BY:	BADGE NO.:	DATE:

FS-F-3481 LOG (10/29/91)

Sizemore, Mary

From: Sizemore, Mary
Sent: Tuesday, August 10, 2010 10:18 AM
To: Sizemore, Mary
Subject: FW: [Fwd: DMR-QA Study 30]

Result from Kathy

-----Original Message-----
From: Leslie, Kathy
Sent: Monday, August 02, 2010 10:55 AM
To: Sizemore, Mary
Cc: Voisard, Karen
Subject: RE: [Fwd: DMR-QA Study 30]

Mary,

You will notice..that there is no CBOD result for my final report because somehow I did not get entered but I did analyze the DMRQA for the CBOD it was 51.2 and the acceptable range was 24.4-84.6. If you need proof that it was ran prior to the results being issued let me know and I can provide you with a copy of my logbook. I did enter it into the DMRQA study but after the reports were issued.

Thanks, Kathy