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STANDARD OPERATING PROCEDURES (SOPs) - TECHNICAL

Last updated: 7 April 2008

SOP Number	Title	Contact	Date	Misc.
ANA 302.0	Water Sample Collection and Storage for Metal Analysis	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/14/05	
ANA 306.0	Copper Analysis of Water Samples Using the Perkin-Elmer Optima 2000 ICP OES System	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/14/05	
CAP 401.3	1-Dimensional and 2-Dimensional Thin-Layer Chromatography	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 402.3	Dry Ice Homogenization of Fish Tissue	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 407.2	Validation of Analytical Procedures	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 409.0	Determination of Percent Purity of Technical Grade Manufacturing Use & End-Use Baylucide (Niclosamide) & 3 Trifluoromethyl-4 Nitrophenol (TFM) in Lampricide Formulations	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 412.0	Analysis of Thin-Layer Chromatography Plates Imaged on Optical Imaging System & Molecular Dynamics PhosphorImager 455A	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 413.3	Determination of Oxytetracycline in the Edible Tissue of Fish Fillets	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	1/30/03	
CAP 415.1	Determination of Chloramine-T Concentrations in Water Using the Hach Pocket Colorimeter [®] ; DPD Test	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 416.4	Determination of oxytetracycline in fish feed	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 418.0	In Vivo Efficacy of Fungicides: Trout Eggs	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz
CAP 421.2	Determination of Para-Tolueneulfonamide in the Edible Tissue of Fish Fillets	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov		Please contact Jeff Meinertz

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CAP 422.1	Template for Writing Technical Operating Procedures for the Analysis of Analytes	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 424.0	Determination of Oxytetracycline (OTC) in Water	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 601.1	Electrical Euthanasia of Experimental Fish	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 602.6	Dissection & Weighing Procedures for Test Fish	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 604.2	Procedure for Oral Gavage with Pulverized Diet	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 605.1	Procedures for Anesthetizing Experimental Fish	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 606.5	Methods Used to Weigh, Measure & Mark Test Animals	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 607.1	Randomization Procedures for Distributing Fish to Experimental Tanks	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 610.3	Methods Used to Implant a Cannula in the Dorsal Aorta of Salmonids	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 611.1	Measurement of pH & Partial Pressure of Oxygen in Fish Blood Using the Radiometer BMS3Mk2 Blood Micro System	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 612.0	In Vitro Preliminary Screening Procedure	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 613.0	In Vitro Minimum Inhibitor Concentration Procedure	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 614.0	In Vivo Toxicity of Fungicides: Fish Eggs	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz

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CAP 615.0	Culturing the Cladocera, <i>Daphnia magna</i>	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 703.1	Procedure for Weekly Sampling & Analysis of Center Effluent & Well Water in Compliance with the UMESC NPDES Permit	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 706.3	Determination of Total Alkalinity by the Titrimetric (pH 4.5) Method	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 712.2	Determination of Total Hardness	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 725.2	Determination of Ammonia Concentrations in Aqueous Solutions Using the Cole-Parmer Gas - Sensing Ammonia Electrode	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 726.1	Determination of Free Carbon Dioxide Using the Hach Model 16900-01 Digital Titrator	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 727.1	Preparation of Reconstituted Water for Hardness Tests (N/4, N, 4N & 8N)	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 728.1	Determination of hydrogen peroxide concentrations in water with the LaMotte SMART 2 colorimeter	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 901.1	Degassing & Filtering Solvents for Use on HPLC Systems	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 902.2	Use of High Performance Liquid Chromatography Columns	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
CAP 903.3	Verification of Thermometer & Temperature Recorder Calibration	Jeff, Meinertz USGS, UMESC phone: 608-781-6291 jmeinertz@usgs.gov	Please contact Jeff Meinertz
FISH 501.0	Counting Catfish Eggs	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/15/05
FISH 502.0	Feeding Fish	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/13/05

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FISH503.0	Determining Individual Fish Weight	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	6/9/05	
FISH504.0	Determining Tank Weight of Fish	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/27/05	
FISH505.0	Ich Maintenance and Harvest	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/13/05	
HISTO401.0	Necropsy and Collection of Histological Samples	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	9/12/05	
HISTO402.0	Fixing and Preserving Tissue Samples for Histological Analysis	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/31/05	
HISTO403.0	Tissue Processing	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/31/05	
HISTO404.0	Hematoxylin and Eosin (H & E) Staining of Processed Slides	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/31/05	
NUTR701.0	Premixing Formulated Fish Diets with Graded Levels of a Test Article	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/31/05 (unsigned)	Please contact David Straus
NUTR702.0	Continuous Extrusion of Multiple Small-Batch Diets	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/31/05 (unsigned)	Please contact David Straus
MISC 202.2	Handling, Preparation, and Application of Chloramine-T and Controls to Test Tanks	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	12/15/04	
MISC 203.2	Disinfectant Solution	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06	
MISC 207.2	Method to measure and adjust water flow to tanks	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06	
MISC 209.1	Method to verify strength and integrity of chloramine-T before and after the treatment phase of study	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	12/17/04	

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MISC 210.5	Method for collecting and fixing histology samples	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 211.2	Method for preparing Davidson's fixative solution	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 214.2	Animal Room Preparation - Aquaculture Drug Research Lab	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 216.2	Method for interpreting histological samples	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 217.3	Procedures for handling, preparation, and application of Tricaine methanesulfonate (trade name: Tricaine-S) for anesthetization or euthanization of fish	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/22/06
MISC 218.2	Procedure for processing florfenicol-medicated feed using Aquaflor premix	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	11/02/04
MISC 219.6	Method for analyzing AQUI-S with GIBBS reagent	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 222.2	Procedures used to perform an internal examination of fish	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/25/06
MISC 223.1	Method for gram staining tissue imprints	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	11/02/04
MISC 224.1	Procedures used to perform sterile techniques for isolating bacteria	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	11/02/04
MISC 226.1	Netting fish into and out of an anesthetic solution	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 227.1	Environmental Disease	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	11/02/04
MISC 228.0	Nutritional disease of hatchery fish	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	12/16/04

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MISC 229.2	Disinfecting with bleach	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 230.2	Procedure for handling, preparation, and application of AQUI-S for anesthetization of fish	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 231.2	Describe procedures to be used to prepare AQUI-S standard and working stock solutions	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 232.1	General completely randomized design procedures	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 233.1	Constructing a Latin square experimental design	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 234.1	Recut Request	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 235.1	Allocating and transferring fish from holding tanks to test tanks	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 236.1	Procedure for performing gross fish necropsy	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	09/21/06
MISC 237.0	General Randomization procedures (with electronic generation of random numbers)	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	10/10/06
MISC 239.0	Transferring fish from holding tank(s) to test tanks	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	10/10/06
MISC 240.1	Procedures to verify concentrations of hydrogen peroxide (35% PEROX-AID[®]) solutions	Jim Bowker USFWS, AADAP Program phone: 406-994-9910 jim_bowker@fws.gov	04/02/08
SIU 21.1	Observation of fish	Anita Kelly Southern Illinois University phone: 618 453-6099 akelly@siu.edu	9/30/2005
SIU 22.0	Weighing and measuring fish	Anita Kelly Southern Illinois University phone: 618 453-6099 akelly@siu.edu	3/01/2002

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SIU 23.0	Water quality monitoring	Anita Kelly Southern Illinois University phone: 618 453-6099 akelly@siu.edu	9/30/2005	
SIU 24.1	Euthanasia of test fish	Anita Kelly Southern Illinois University phone: 618 453-6099 akelly@siu.edu	9/30/2005	
SIU 25.1	Test organism necropsy and histopathology	Anita Kelly Southern Illinois University phone: 618 453-6099 akelly@siu.edu	10/30/2006	
TOX601.0	Liver Microsome Preparation	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX602.0	Microsome Resuspension	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX603.0	Protein Analysis	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX604.0	Glutathione S-Transferase (GST) Assay	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX605.0	Cytochrome P-450	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX606.0	Uridine Diphosphate Glucuronosyltransferase (UDPGT) Assay	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
TOX607.0	7-Ethoxyresorufin O-Deethylase (EROD) Assay	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	in prep	Please contact David Straus
WQ/WC201.0	Water Quality Measurement	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/27/05	
WQ/WC202.0	Total Alkalinity – Titration Method	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/27/05	
WQ/WC203.0	Total Hardness – Titration Method	David Straus USDA, SNARC phone: 870-673-4483 dstraus@spa.ars.usda.gov	5/27/05	

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WQ/WC204.0 [Flow Rate Measurement](#)

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