



Michigan Department of Natural Resources – Procurement Services
 P.O. Box 30028, Lansing, MI 48909
 OR
 525 W. Allegan, Lansing, MI 48933

NOTICE OF CONTRACT NO. 19000001012
Between
STATE OF MICHIGAN
and

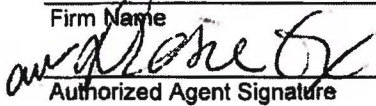
Required by authority of 1984 PA 431, as amended.

Name and Address of Contractor Michigan State University Office of Sponsored Programs 426 Auditorium Rd., Rm 2 301 Administration Building East Lansing, MI 48824-2601	Primary Contact Diane Cox	
	Email Coxd@osp.msu.edu	
	Telephone (517) 884-4243	VCUST: V00048200
	(Empty space)	

State Contact	Division	Name	Telephone	Email
Contract Compliance Inspector	Fisheries	Marisa Lay	(517)284-5837	laym@michigan.gov
Contract Administrator	Finance and Operations	Kip Conley	(517)284-5975	Conleyk1@michigan.gov

Contract Summary			
Description (Provide a basic but comprehensive description of services) Fish health testing services			
Initial Term 7 Years	Effective Date 8/1/2019	Initial Expiration Date 7/31/2026	Available Options Three 1-year option
Payment Terms Net 30	F.O.B. N/A	Shipped N/A	Shipped From N/A
Minimum Delivery Requirements N/A	Alternate Payment Options <input type="checkbox"/> P-Card <input type="checkbox"/> Direct Voucher (DV)		Available to MiDeal Participants <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
ESTIMATED CONTRACT VALUE AT TIME OF EXECUTION: \$1,960,000.00			

FOR THE CONTRACTOR:

Michigan State University
 Firm Name

 Authorized Agent Signature
 Diane L. Cox, Sponsored Programs Manager
 Authorized Agent (Print or Type)
 12 Aug 19
 Date

FOR THE STATE:


 Signature
 Laura Gyorkos, Manager
 Name/Title
 DNR Finance and Operations/Procurement
 Division/Section
 8/28/19
 Date

STATE OF MICHIGAN TERMS AND CONDITIONS

I-A PURPOSE

This contract consists of the State of Michigan's (State) terms and conditions and the work statement. This contract constitutes the complete and exclusive agreement and understanding of the parties as it relates to this transaction. This contract supersedes all proposals, or other prior agreements, and all other communications between the parties relating to this transaction. If there is a conflict between the State's terms and conditions and the Contractor's Proposal, the State's terms and conditions shall take precedence.

The purpose of this contract is to obtain the services of the Department of Fisheries and Wildlife at Michigan State University to conduct research titled: Fish Health Testing in Michigan in collaboration with Fisheries Division of the Michigan Department of Natural Resources (DNR).

I-B ISSUING OFFICE/CONTRACT ADMINISTRATOR

This contract is issued by the State of Michigan, Department of Natural Resources, Finance and Operations Division (FOD) for Fisheries Division (FD).

FOD is the only office authorized to change, modify, amend, alter, and clarify, etc., the prices, specifications, terms, and conditions of this contract. All requests for changes, modifications, amendments, etc. must be addressed to:

Kip Conley, DNR, FOD
3rd Floor, Constitution Hall
P.O. Box 30028
Lansing, MI 48909
(517) 284-5975

I-C CONTRACT STAFFING

Upon receipt of the properly executed contract agreement, it is anticipated that the person named below or any other person so designated be authorized to oversee the contract on a day-to-day basis during the term of the contract. However, oversight of this contract implies no authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions, and specifications of this contract.

The DNR Project Manager is:

Gary Whelan
Department of Natural Resources
Fisheries Division
P.O. Box 30446
Lansing, MI 48909
Telephone: (517) 284-5840
Fax: (517) 373-0381
Email: WhelanG@michigan.gov

The MSU Principal Investigator (MSU-PI) for this project is listed below. This person is responsible for the administration and research of the project. The MSU-PI does not have the authority to change, modify, clarify, amend, or otherwise alter the prices, terms, conditions, and specifications of the contract as that authority is retained by MSU - Office of Sponsored Programs.

Dr. Tom Loch, Professor
Departments of Pathobiology and Diagnostic Investigation and
Fisheries and Wildlife
Michigan State University
Aquatic Animal Health Laboratory
1129 Farm Lane, Rm 340G
East Lansing, MI 48824
Telephone: 517-884-2019
Email: lochthom@msu.edu

Michelle Gunn, AAHL Laboratory Manager
Department of Pathobiology and Diagnostic Investigation
Michigan State University
Aquatic Animal Health Laboratory
1129 Farm Lane, Rm 340G
East Lansing, MI 48824
Telephone: 517-884-2018
Email: gunnmich@cvm.msu.edu

I-D CONTRACT COMPLIANCE INSPECTOR

Marisa Lay
Financial Analyst, DNR, Fisheries Division
P. O. Box 30446
Lansing, MI 48909
Telephone: (517) 284-5837
Email: Laym@michigan.gov

I-E PROGRAM OF WORK

A. Problem/Need:

Michigan waters support a diverse and economically important fisheries resource base. As a steward of this public trust resource, Michigan's Department of Natural Resources (DNR) manages the state's inland and Great Lakes fisheries and strives to maintain stocks of healthy fish and the other aquatic life that fish depend on for their production. The Fish Production Program (FPP) of Michigan DNR supports fisheries rehabilitation by providing hatchery-reared fish for stocking of public waters.

Key components of meeting requirements for healthy fish are to:

- a. routinely monitor the health of hatchery-reared fish stocks
- b. to detect potential pathogens
- c. to effectively treat disease outbreaks in the state production system.

Wild fish populations are routinely examined to determine the health of existing stocks, to determine potential disease threat, and evaluate the effects of stress and other environmental factors on the expression of fish and other aquatic animal diseases. Laboratory and field studies are designed to verify and explain trends identified during routine fish health monitoring. DNR is adequately staffed to collect the needed samples for routine fish health investigations but presently lacks the capabilities and resources to

conduct intensive epidemiological studies and laboratory analyses. These elements are essential to meeting the DNR's responsibilities as public trustees for the aquatic resources of the state.

B. Objectives:

- 1) Work with DNR and the Great Lakes Fish Health Committee to help develop fish health guidelines and policies governing wild fish management, broodstock development and management, hatchery production, and fish stocking for the Fisheries Division's Fish Production Program of the Michigan Department of Natural Resources.
- 2) Assess prevalence, intensity, and pathways of transmission of aquatic animal diseases in Michigan's Great Lakes and inland waters to protect Michigan's aquatic resources.
- 3) Collect, analyze, and interpret data regarding distribution and infection intensity of pathogens affecting both inland and Great Lakes sport fisheries to facilitate proper management of the state's public trust resources.
- 4) Identify emerging diseases of importance to fish reproduction and survival and develop guidelines and policies to prevent their spread within Michigan Great Lakes and inland waters.
- 5) Provide guidance regarding the vaccination and drug administration to hatchery propagated fish.

C. Justification

Much of the historical biological diversity represented by Michigan's inland and Great Lakes fisheries has been altered by and/or lost due to habitat damage, the introduction of non-indigenous species, overfishing, and diseases. Diseases such as Viral Hemorrhagic Septicemia (VHS) and Bacterial Kidney Disease (BKD) have become widespread in the Great Lakes basin and have caused considerable losses. Undoubtedly, the keys to preventing further degradation of fisheries in the Great Lakes basin and developing effective management strategies depend on improved identification of fish pathogens in the lakes and hatcheries, elucidation of disease transmission pathways, and determination of direct effects on fish survival, growth, and reproduction. A reliable assessment of fish health can best be achieved through the implementation of a rigorous monitoring program. The program must have the capacity to identify the presence of pathogens and to evaluate the effect of diseases on the general health of fish populations. There have been several major impediments to the development of an effective disease-monitoring program in the Great Lakes basin. First, a documented archive of fish disease in the region is not available but is under development currently. Second, sensitive diagnostic reagents and tests have not been developed to locally isolate pathogens. Third, there has been a paucity of disease studies or monitoring of large feral populations. Despite these constraints, FPP is using all available measures to ensure that fish reared for stocking are free of diseases. For example, FPP screens spawning and hatchery-produced fish to effect a reduction in vertical transmission of infectious diseases, particularly BKD caused by *Renibacterium*. However, there is a clear need to continuously revise and update fish health policy, procedure, analytical methods, and control measures adopted in DNR weirs and hatcheries. Management efforts to prevent introduction of new diseases and to limit the spread of disease organisms including largemouth bass virus (LMBv), Piscirickettsia sp., and VHSV must be continued. Recent changes in species and life stages affected by LMBv are example of why a greater fundamental understanding of disease dynamics, life cycle of pathogens, historical pathogen data, and host defense mechanisms of the fish populations at risk is needed for effective management of the fisheries. In brief, long-term management of Michigan's Great Lakes and inland fisheries must be based on sound disease control policies and implementation strategies.

D. Expected Results and Benefits:

State of the art diagnostic services and professional consultation will enable the DNR to control extant and emerging diseases both in fish hatcheries and in wild fish populations. Timely reports of fish health analyses will minimize the potential of transfer of diseases vertically within the hatcheries, between hatchery and natural waters, and between natural waters. A key potential outcome of this work will be to begin to develop

methods to manage natural mortality rates in aquatic species, an outcome that will revolutionize fisheries management.

E. Background:

Critical to the development of improved fish disease control strategy in Michigan is the ability to rapidly respond to potential disease problems. The Fisheries Division of the Michigan DNR recognized this need in the 1950s and established a fish health diagnostic laboratory on the premises of the Wolf Lake State Fish Hatchery by the 1970s. Most of the historic monitoring programs in Michigan targeted two diseases; Bacterial Kidney Disease, caused by *R. salmoninarum*, and Whirling Disease, caused by *Myxobolus cerebralis*. Mr. John Hnath directed the DNR diagnostic lab for three decades and retired on July 1, 2002. Since that time, the Michigan State University – Aquatic Animal Health Laboratory (MSU AAHL) has been providing all fish health inspections and diagnostics for DNR Fisheries Division. As an international leader in the field of aquatic animal health, the MSU AAHL is dedicated to the investigation of diseases of aquatic animals and responds to the needs of Michigan DNR and the Great Lakes Fishery Commission. Currently, this lab has the capability to perform all conventional diagnostic assays and provides needed services in education, research, and outreach. Protocols used for monitoring and disease diagnosis, certification, and notification are those approved by the American Fishery Society and the Great Lakes Fishery Commission. This facility is ready and able to provide the needed expertise and advanced techniques to assist the DNR with a range of fish health research problems.

F. Procedures:

Job 1. Historical Pathogen Review:

Continue developing background fish health information concerning historical fish pathogen data, wild and hatchery fish, and hatchery operations for all fish species currently in production in the state of Michigan to include the disease susceptibility/resistance traits of these fish. Reimbursable costs for this job include preparation and production of final documents with all cost estimations provided in advance.

Job 2. Broodstock Plan Analysis:

Review the DNR's broodstock management plan, provide fish health input on revised sections of the broodstock management plan as they become available, and provide recommendations for improving the fish health of these key assets.

Job 3. Fish Health Inspection Policy Analysis:

Review and provide recommendations on general guidelines and policies governing fish health inspections for the FPP of the DNR.

Job 4. Wild Fish Pathogen and Emerging Disease Analysis:

Assist DNR in identifying existing and emerging diseases in fish stocks and assessing their effect on fish stocks in the state. Conduct fish health inspection and advanced diagnostic assays to detect emerging diseases such as largemouth bass virus, *Nucleospora salmonis*, viral hemorrhagic septicemia virus, *Flavobacterium* spp., microsporidians, Salmonid herpesvirus 3, and other pathogens as needed.

Job 5. Species Fish Health Analysis:

Conduct fish health inspections and advanced diagnostic assays on coldwater and coolwater species in both hatchery and wild populations.

Job 6. Management Recommendations:

Provide recommendations on the proper fish health management of wild fish stocks, on existing and future broodstocks, and on current hatchery operations. Work with Hatchery Biologists, fish health staff, and other support staff to identify aspects of hatchery operations that could be improved to enhance broodstock selection and control the transmission of diseases. Conduct coordinated fish health inspections for all state fish production facilities annually, followed by

debriefing sessions with available staff, and conduct fish health inspections of wild fish as required by DNR. See Section G for detailed requirements.

Job 7. Write annual report:

Requirements for the annual report are outlined in Appendix A, Section A.7.ii

Job 8. Write final report:

Final report should summarize work done throughout the contract period as it relates to Jobs 1-5 above.

G. Contract Requirements for Fish Health Analysis:

The following is a summary of the fish health work needed by the DNR on an annual basis. The numbers of cases by type have been estimated after reviewing the case history provided in Table 1 and evaluating needs based on most recent health histories and expected health trends. A case is generally defined as a group of fish of the same age and species, from the same water source and location, submitted together on the same day for the same purpose of disease investigation. The 200 annual cases requested represent the highest number of cases the DNR would submit for testing under the base-contract funding according to the appended price list of MSU-Aquatic Animal Healthy Laboratory (Appendix D). The composition of the total is estimated for each case type and is based on standard testing that is done annually as well as some estimates for other types of cases. The total number of cases contracted will not exceed the estimated number, but the number of any particular type may change to accommodate needs for that year, as long as the total costs of all submissions do not exceed the base contract amount within the fiscal year. Additional cases could be added by modifying this contract using similar costs per sample as indicated in this contract or by special research projects funded by Fisheries Division or outside funding sources.

Table 1. Fish Health Case History for State of Michigan 2014-2018

Case Type	FY2014	FY2015	FY2016	FY2017	FY2018
Inspection-Broodstock-Wild	15	17	16	10	13
Inspection-Broodstock-Captive	51	23	72	49	57
Diagnostic-Broodstock-Captive	3	2	1	1	1
Inspection-Fish Production	87	60	49	51	60
Diagnostic-Fish Production	13	11	15	7	13
Diagnostic-Fish Production-Other	0	12	6	0	6
Diagnostic-Wild-Clinical	0	1	3	1	5
Diagnostic-Wild-VHS	0	0	0	0	0
Diagnostic-Wild-Fish Kills	0	1	3	53	10
Inspection-Wild	29	22	25	9	13
Inspection-Wild-EEDv	0	0	0	0	3
Diagnostic-Wild-Transfers	0	5	1	1	4
Diagnostic-Wild-Future Broodstock	0	0	0	0	0
Total	198	154	191	182	185

An outline of the responsibilities and deliverables for the MSU AAHL and the DNR are outlined in Appendix A.

A calendar outlining the approximate timing for required annual DNR fish health work is provided in Appendix B. The actual dates for annual fish health work are determined by stocking and spawning dates, which can vary each year. Actual dates will be developed annually by the DNR Fish Health Coordinator in consultation with the Michigan State University Aquatic Animal Health Laboratory Liaison.

Annual testing required: The DNR will annually submit up to 200 cases, which includes up to 150 cases for Fish Production and 13 for wild fish; which are required annual inspections; the other 37 cases are optional, at the discretion of the DNR, as funding allows. A breakdown by estimated case type is outlined below.

- Fish Production: The DNR will annually submit up to 150 cases that include required annual production and broodstock inspections for fish in hatcheries and rearing ponds, BKD screening for select captive broodstock to manage BKD in hatcheries, and diagnostics for production fish and captive broodstocks in hatcheries.
 - Full Inspection Cases
 - Production—35 cases of 60 fish each
 - Broodstock—15 cases of 10 or 60 fish each; this includes mature broodstock currently used for spawning (10 fish submitted per case) and future immature brood lots (60 fish submitted per case).
 - Virology Only Cases
 - Production—30 cases of 60 fish each; this includes walleye and northern pike fry/fingerlings from rearing ponds and musky fry/fingerlings from Wolf Lake SFH
 - Broodstock—10 cases; up to 60 gamete samples per case for mature broodstocks where sacrifice of 60 individuals for full inspection is not desired.
 - BKD Screening Cases (for individual spawning adults)
 - Up to 25 cases of up to 120 gamete samples per case where results needed the same day the samples are received.
 - Cases could include Atlantic salmon, Assinica brook trout, Eagle Lake rainbow trout, Lake Superior lake trout, Sturgeon River brown trout, and Wild Rose brown trout.
 - BKD screening done using QELISA test
 - Results of testing needed the day the samples are received.
 - Diagnostic Cases (case numbers estimated based on case history for past 4 years)
 - Production—25 cases up to 20 fish each
 - Broodstock—10 cases up to 10 fish each
- Wild Fish: The DNR will annually submit up to 50 cases that include salmonid and coolwater broodstock inspections (required) and optional cases as determined by DNR
 - Full Inspection Cases
 - Feral salmonid broodstock—Up to 4 cases of 60 fish each
 - Salmon—Little Manistee River Weir, Swan River Weir, Platte River Weir
 - Steelhead—Little Manistee River Weir
 - Feral coolwater broodstock—9 cases of 60 fish or non-lethal samples (gametes, blood, mucus, feces) from 60 fish
 - Walleye—Little Bay de Noc, Muskegon River, and Tittabawasee River
 - Muskellunge—Detroit River, Lake Hudson, and Thornapple Lake; Up to 10 whole fish for full inspection and non-lethal samples from remainder of fish spawned for each location.
 - Lake Sturgeon—Black R., Sturgeon R. and one other location; non-lethal samples only from up to three locations.

- Optional cases—Up to 37 cases that can include fish kills, inspections, diagnostics, transfers, and emerging pathogens; the actual number and tests for each category listed below to be determined by DNR as needs arise.
- Other fish health services:
 - Veterinary services support
 - Disease treatment recommendations that include dosage, length of treatment, and withdrawal time due 5 days after lab receives samples.
 - Prescriptions for off-label drug or chemical treatments to be provided when treatment recommendations require the use of off-label drugs or chemical treatments
 - Vaccines*—recommendations for appropriate vaccinations. Development of an autologous vaccine specific to pathogen strains found in Michigan facilities will be charged separately, according to Appendix D.
 - Pathogen control strategies for fish production facilities
 - Molecular and Histopathology testing
 - PCR and histopathology testing as required by protocols outlined in Attachment A, Section IV. A. a
 - PCR and histopathology testing as agreed upon between MDNR and the PI —up to 10 cases per year
 - Investigational New Animal Drug (INAD) Coordination
 - Lab coordinator/liaison will handle all DNR INAD needs and requirements
 - Review all INAD paperwork submitted for completeness.
 - Sign all INAD paperwork and send to the Aquatic Animal Drug Approval Partnership (AADAP) office.
 - Review, sign, and send all requests for study numbers to AADAP the day they are received from DNR.
 - Review, sign, and send all drug receipts and study results within 10 days of study conclusion to AADAP office.
 - Consultation for unique fish health issues — unlimited
 - Other
 - Travel to Fish Production facilities and broodstock weirs for sample collection or where site evaluation due to disease issues is needed.
 - The DNR shall provide the Michigan State University Aquatic Animal Health Laboratory a vehicle for such travel or will make other agreed upon arrangements for required travel to fulfill this contract.
- Pathogen testing
 - Protocols
 - All protocols used for monitoring and disease diagnosis, certification, and notification must be those approved by the American Fishery Society and OIE. All protocols must also follow the recommendations of the Great Lakes Fishery Commission – Great Lakes Fish Health Committee and the Great Lakes Fish Health Model Program.
 - Any deviation from this specification must be agreed upon by both the DNR contract administrators and the MSU Aquatic Animal Health Laboratory PI.
 - Required testing
 - Tests required by type of case and species are listed in Appendix C
 - If species is not listed, DNR will provide testing requirements at time of sample submission on fish health request form.
 - Any deviation from this specification must be agreed upon by both the DNR contract administrators and the MSU Aquatic Animal Health Laboratory PI.

H. Geographic Location: Departments of Pathobiology and Diagnostic Investigation and Fisheries and Wildlife, Aquatic Animal Health Laboratory, Michigan State University, East Lansing, MI

(Attachments: Appendix A-Responsibilities and Deliverables, Appendix B-Calendar, and Appendix C Pathogens, Appendix D-Aquatic Animal Health Laboratory Fee Schedule)

I-F DELIVERABLES

See Appendix A

I-G PROJECT CONTROL AND REPORTS

The Contractor will carry out this project under the direction and control of the DNR, Fisheries Division.

The DNR Project Manager will meet as needed with the PI for the purpose of reviewing progress and providing necessary guidance in solving problems that arise.

The PI will submit deliverables as listed in Section I-F above, and identify any problems, real or anticipated, which should be brought to the attention of the DNR Project Manager to insure that the contract remains on schedule and will be completed as scheduled.

I-H PRICE PROPOSAL

This is a fixed price contract, and Contractor may invoice at the end of each fiscal quarter (December 31, March 31, June 30, and September 30) for 25% of the annual DNR contribution to the study (the contract cost). Contractor's fiscal contribution to this study (20%) is the waiver of normal overhead charges per the Agreement between MSU and DNR, executed in 2013.

I-I MODIFICATIONS OF CONTRACT

This contract may be modified if any changes proposed by either party are requested in writing and mutually agreed to by the official representative of the Contractor shown in this contract and the DNR contract administrator. This request is not valid until it is signed by all parties, a Contract Change Notice is issued by the Issuing Office, and a Purchase Order is issued by the DNR.

I-J NO WAIVER OF DEFAULT

The failure of a party to insist upon strict adherence to any term of this contract shall not be considered a waiver or deprive the party of the right thereafter to insist upon strict adherence to that term, or any other term, of this contract.

I-K SEVERABILITY

Each provision of this contract shall be deemed severable from all other provisions, and if one or more of the provisions shall be declared invalid, the remaining provisions of this contract shall remain in full force and effect.

I-L HEADINGS

Captions and headings used in this contract are for information and organization purposes. Captions and headings, including inaccurate references, do not, in any way, define or limit the requirements or terms and conditions of this contract.

I-M RELATIONSHIP OF THE PARTIES

The relationship between the State and the Contractor is that of client and independent contractor. No agent, employee, or servant of the Contractor or any of its subcontractors shall be or shall be deemed an employee, agent, or servant of the State for any reason.

I-N COST LIABILITY

The State of Michigan assumes no responsibility or liability for costs incurred by the Contractor prior to the signing this contract. Total liability of the State is limited to the terms and conditions of this contract.

I-O CONTRACTOR RESPONSIBILITIES

The Contractor is responsible for the performance of all of its obligations under this contract, whether the obligations are performed by the Contractor or a subcontractor. The State reserves the right to approve any subcontractor hired to perform the Contractor's obligations under this contract, and the right to require the Contractor to replace any subcontractor deemed unacceptable by the State. The Contractor is exclusively responsible for adherence by subcontractors to all provisions of this contract. Further, the State will consider the Contractor to be the sole point of contact with regard to contractual matters, including but not limited to payment of any and all costs resulting from the contract.

I-P INFORMATION RELEASE / OWNERSHIP

News Releases

News releases pertaining to this Contract or the services, study, data, or project to which it relates will not be made without prior written State approval, which will not be unduly withheld. MSU may publish information concerning the award of this in the MSU Board of Trustees report only, without prior written consent.

Publication

The Contractor will not use, release, publish or present any analyses, findings, results, or techniques developed under this agreement, or any information derived therefrom until such analyses, findings, or techniques have been reported to the State in the manner prescribed by this agreement. The Contractor will provide the State, for its review, copies of all presentations or articles being submitted for publication at least forty-five (45) days in advance. The State will review the proposed publication and provide comments. A response shall be provided to the Contractor within forty-five (45) days; otherwise, the Contractor may assume that the State has no comments. The Contractor agrees to address any concerns or issues identified by the State with respect to the State-supplied information prior to submission for publication or presentation.

Acknowledgement of State Participation/Support

All publications or oral presentations concerning the analyses, findings, results, or techniques developed under this contract will contain an acknowledgement, of the State's participation and support unless the State requests in writing that their participation and support not be acknowledged. Furthermore, Contractor may not receive fees for any article in excess of the cost of preparation of published article and excluding the cost of the research and compilation that was compensated under the contract.

Ownership of Samples\Equipment

Any samples provided by the DNR for use under this contract will remain the sole property of the DNR and must be returned upon the request of the DNR Project Manager

At the end of the project period, the DNR will retain ownership of any supplies/equipment purchased with funding under this contract and for the purposes of the project which are not consumed while completing the project. The supplies/equipment must be returned to the State upon the request of the DNR Project Manager.

I-Q DISCLOSURE

All information in this contract is subject to the provisions of the Freedom of Information Act, 1976 Public Act No. 442, as amended, MCL 15.231, et seq.

I-R ACCOUNTING RECORDS

The Contractor will be required to maintain project records pertaining to Appendix A 'Work Statement' for three (3) years from the expiration date of this contract, which access shall be made available to the State upon reasonable notice to Contractor.

I-S AUDIT OF CONTRACT COMPLIANCE

The Contractor agrees that the State may, upon 24-hour notice, perform an audit at Contractor's location(s) to determine if the Contractor is complying with the requirements of this contract. The Contractor agrees to cooperate with the State during the audit and produce all records and documentation that verifies compliance with the requirements of this contract.

I-T SAFETY AND ACCIDENT PREVENTION

In performing work under this contract on State premises, the Contractor shall conform to any specific safety requirements contained in this contract or as required by law or regulation. The Contractor shall take any additional precautions as the State may reasonably require for safety and accident prevention purposes. Any violation of such safety requirements, rules, laws, or regulations shall be a material breach of this contract and shall be grounds for cancellation of this contract in accordance with the Cancellation provisions contained herein.

I-U TAXES

Employment Taxes

Contractors are expected to collect and pay all applicable federal, state, and local employment taxes.

Sales and Use Taxes Contractors are required to be registered to remit sales and use taxes on taxable sales of tangible personal property or services delivered into the State.

I-V GENERAL INDEMNIFICATION

Each party to this contract must seek its own legal representative and bear its own costs; including judgments, in any litigation that may arise from performance specific to each party's responsibilities. It is specifically understood and agreed that neither party will indemnify the other party in such litigation.

I-W INSURANCE REQUIREMENTS

The Contractor shall purchase and maintain such insurance as will protect them from claims set forth below which may arise out of, or result from, the Contractor's operations under the Contract (Purchase Order), whether such operations be by themselves or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

NOTE: CONTRACTOR MAY SUBMIT EVIDENCE OF SELF-INSURANCE AND/OR AMENDMENT OF EXISTING LIABILITY COVERAGE IN FULFILLMENT OF ABOVE PROVISIONS, IF THE STATE ACCEPTS THE EVIDENCE OR AMENDED LIABILITY COVERAGE AS PROVIDING COMPARABLE PROTECTION OF THE STATE'S INTEREST.

The Contractor is required to provide proof of the minimum levels of insurance coverage as indicated below. The purpose of this coverage shall be to protect the State from claims which may arise out of, or result from, the Contractor's performance of services under the terms of this Contract, whether such services are performed by the Contractor, or by any subcontractor, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable.

The Contractor waives all rights against the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents for recovery of damages to the extent these damages are covered by the insurance policies the Contractor is required to maintain pursuant to this contract, unless such damages are the result of the negligence or omission of the State of Michigan.

The insurance shall be written for not less than any minimum coverage herein specified or required by law, whichever is greater.

BEFORE THE CONTRACT IS SIGNED BY BOTH PARTIES OR BEFORE THE PURCHASE ORDER IS ISSUED BY THE STATE, THE CONTRACTOR MUST FURNISH TO THE DNR, FS, CERTIFICATE(S) OF INSURANCE VERIFYING INSURANCE COVERAGE. THE CERTIFICATE MUST BE ON THE STANDARD "ACCORD" FORM. THE CONTRACT OR PURCHASE ORDER NUMBER MUST BE SHOWN ON THE CERTIFICATE OF INSURANCE TO ASSURE CORRECT FILING. All such Certificate(s) shall contain a provision indicating that coverage afforded under the policies WILL NOT BE CANCELLED OR MATERIALLY CHANGED without prior written notice having been given to the DNR, FS. Such NOTICE must include the CONTRACT NUMBER affected.

The Contractor is required to provide the type and amount of insurance checked () below:

- 1. Commercial General Liability with the following minimum coverage:
\$2,000,000 General Aggregate Limit other than Products/Completed Operations
\$2,000,000 Products/Completed Operations Aggregate Limit
\$1,000,000 Personal & Advertising Injury Limit
\$1,000,000 Each Occurrence Limit
\$500,000 Fire Damage Limit (any one fire)
- 2. If a motor vehicle is used to provide services or products under this Contract, the Contractor must have vehicle liability insurance for bodily injury and property damage as required by law.
- 3. Worker's disability compensation, disability benefit or other similar employee benefit act with minimum statutory limits. NOTE: (1) If coverage is provided by a State fund or if Contractor has qualified as a self-insurer, separate certification must be furnished that coverage is in the state fund or that Contractor has approval to be a self-insurer; (2) Any citing of a policy of insurance must include a listing of the States where that policy's coverage is applicable; and (3) Any policy of insurance must contain a provision or endorsement providing that the insurers' rights of subrogation are waived. This provision shall not be applicable where prohibited or limited by the laws of the jurisdiction in which the work is to be performed.
- 4. Employers liability insurance with the following minimum limits:
\$100,000 each accident
\$100,000 each employee by disease
\$500,000 aggregate disease

I-X NOTICE AND RIGHT TO CURE

In the event of a curable breach by the Contractor, the State shall provide the Contractor written notice of the breach and a time period to cure said breach described in the notice. This section requiring notice and an opportunity to cure shall not be applicable in the event of successive or repeated breaches of the same

nature or if the State determines in its sole discretion that the breach poses a serious and imminent threat to the health or safety of any person or the imminent loss, damage or destruction of any real or tangible personal property.

I-Y CANCELLATION

The State may cancel this contract without further liability or penalty to the State, its departments, divisions, agencies, offices, commissions, officers, agents, and employees for any of the following reasons:

1. **Material Breach by the Contractor.** In the event that the Contractor breaches any of its material duties or obligations under this contract, which are either not capable of or subject to being cured, or are not cured within the time period specified in the written notice of breach provided by the State, or pose a serious and imminent threat to the health and safety of any person, or the imminent loss, damage or destruction of any real or tangible personal property, the State may, having provided written notice of cancellation to the Contractor, cancel this contract in whole or in part, for cause, as of the date specified in the notice of cancellation.

In the event the State chooses to partially cancel this contract for cause charges payable under this contract will be equitably adjusted to reflect those services that are cancelled. In the event this contract is cancelled for cause pursuant to this section, and it is therefore determined, for any reason, that the Contractor was not in breach of contract pursuant to the provisions of this section, that cancellation for cause shall be deemed to have been a cancellation for convenience, effective as of the same date, and the rights and obligations of the parties shall be limited to that otherwise provided in this contract for a cancellation for convenience.

2. **Cancellation for Convenience by the State.** The State may cancel this contract for its convenience, in whole or part, if the State determines that such a cancellation is in the State's best interest. Reasons for such cancellation shall be left to the sole discretion of the State and may include, but not necessarily be limited to (a) the State no longer needs the services or products specified in this contract, (b) relocation of office, program changes, changes in laws, rules, or regulations make performance of the services under this contract no longer practical or feasible, and (c) unacceptable prices for additional services requested by the State. The State may cancel this contract for its convenience, in whole or in part, by giving the Contractor written notice 30 days prior to the date of cancellation. If the State chooses to cancel this contract in part, the charges payable under this contract shall be equitably adjusted to reflect those services that are cancelled.
3. **Non-Appropriation.** The State may cancel this contract in the event that funds to enable the State to effect continued payment under this contract are not appropriated or otherwise made available. The Contractor acknowledges that, if this contract extends for several fiscal years, continuation of this contract is subject to annual appropriation or availability of funds for this contract. If funds are not appropriated or otherwise made available, the State shall have the right to cancel this contract at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of cancellation to the Contractor. The State shall give the Contractor written notice of such non-appropriation or unavailability within 30 days after it receives notice of such non-appropriation or unavailability.
4. **Criminal Conviction.** In the event the Contractor, an officer of the Contractor, or an owner of a 25% or greater share of the Contractor, is convicted of a criminal offense incident to the application for or performance of a State, public or private contract or subcontract; or convicted of a criminal offense including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, attempting to influence a public employee to breach the ethical conduct standards for State of Michigan employees; convicted under State or federal antitrust statutes; or convicted of any other criminal offense which in the sole discretion of the State, reflects upon the contractor's business integrity, the State may cancel this contract.

5. **Approvals Rescinded.** In the event any final administrative or judicial decision or adjudication disapproves a previously approved request for purchase of personal services pursuant to Article 11, Section 5 of the Michigan Constitution of 1963, and Chapter 7 of the Civil Service Rules, the State may cancel this contract. Notwithstanding any other provision of this contract to the contrary, the State Personnel Director is authorized to disapprove contractual disbursements for personal services if the Director determines that disbursements under this contract violate Article 11, Section 5 of the Michigan Constitution or violate applicable Civil Service rules or regulations. Cancellation may be in whole or in part and may be immediate as of the date of the written notice to the Contractor or may be effective as of the date stated in such written notice.

I-Z ASSIGNMENT

The Contractor shall not have the right to assign this contract or to assign or delegate any of its duties or obligations under this contract to any other party (whether by operation of law or otherwise), without the prior written consent of the State. Any purported assignment in violation of this section shall be null and void. Further, the Contractor may not assign the right to receive money due under this contract without the prior written consent of DNR Financial Services.

I-AA DELEGATION

The Contractor shall not delegate any duties or obligations under this contract to a subcontractor other than a subcontractor named in the bid unless DNR Financial Services has given written consent to the delegation.

I-BB NON-DISCRIMINATION CLAUSE

In the performance of any contract or purchase order resulting herefrom, the Contractor agrees not to discriminate against any employee or applicant for employment, with respect to their hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, physical or mental disability unrelated to the individual's ability to perform the duties of the particular job or position. The Contractor further agrees that every subcontract entered into for the performance of any contract or purchase order resulting herefrom will contain a provision requiring non-discrimination in employment, as herein specified, binding upon each subcontractor. This covenant is required pursuant to the Elliot Larsen Civil Rights Act, 1976 Public Act 453, as amended, MCL 37.2101, et seq, and the Persons with Disabilities Civil Rights Act, 1976 Public Act 220, as amended, MCL 37.1101, et seq, and any breach thereof may be regarded as a material breach of the contract or purchase order.

I-CC UNFAIR LABOR PRACTICES

Pursuant to 1980 Public Act 278, as amended, MCL 423.231, et seq, the State shall not award a contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled pursuant to Section 2 of the Act. This information is compiled by the United States National Labor Relations Board.

A Contractor of the State, in relation to the contract, shall not enter into a contract with a subcontractor, manufacturer, or supplier whose name appears in this register. Pursuant to Section 4 of 1980 Public Act 278, MCL 423.324, the State may void any contract if, subsequent to award of the contract, the name of the Contractor as an employer, or the name of the subcontractor, manufacturer or supplier of the Contractor appears in the register.

I-DD SURVIVOR

Any provisions of this contract that impose continuing obligations on the parties shall survive the expiration or cancellation of this contract for any reason.

I-EE PERFORMANCE REVIEWS

DNR may review with the contractor their performance under the contract. Performance reviews shall be conducted quarterly, semi-annually or annually depending on contractor's past performance with the State. Performance reviews shall include, but are not limited to, quality of service being delivered and provided, timeliness, percentage of completion, accuracy of billings, customer service, completion, and submission of required paperwork, and other requirements of the contract.

Upon a finding of poor performance, which has been documented by DNR Financial Services, the Contractor shall be given an opportunity to respond and take corrective action. If corrective action is not taken in a reasonable amount of time as determined by DNR Financial Services, the contract may be canceled for default.

I-FF ELECTRONIC PAYMENT AVAILABILITY

Electronic transfer of funds is available to State contractors. Contractor is required to register with the State electronically at <http://www.cpexpress.state.mi.us>. Public Act 533 of 2004 requires all payments made by the State of Michigan be transitioned to Electronic Funds Transfers (EFT).

I-GG RENEWALS - Reserved

I-HH COMPLIANCE WITH LAWS

The Contractor represents to the best of its knowledge and belief that, in performing the services called for by this Contract, it will not violate any applicable law, rule, or regulation, or any intellectual rights of any third party; including but not limited to, any United States patent, trademark, copyright, or trade secret.

I-II LEGAL EFFECT

Contractor must show acceptance of the Contract by signing the Contract and returning it to the Contract Administrator. The Contractor must not proceed with the performance of the work to be done under the Contract, including the purchase of necessary materials, until both parties have signed the Contract to show acceptance of its terms, and the Contractor receives a Contract release/purchase order that authorizes and defines specific performance requirements.

Federal Provisions Addendum

The provisions in this addendum may apply if the purchase will be paid for in whole or in part with funds obtained from the federal government. If any provision below is not required by federal law for this Contract, then it does not apply and must be disregarded. If any provision below is required to be included in this Contract by federal law, then the applicable provision applies, and the language is not negotiable. If any provision below conflicts with the State's terms and conditions, including any attachments, schedules, or exhibits to the State's Contract, the provisions below take priority to the extent a provision is required by federal law; otherwise, the order of precedence set forth in the Contract applies. Hyperlinks are provided for convenience only; broken hyperlinks will not relieve Contractor from compliance with the law.

1. Federally Assisted Construction Contracts

If this contract is a "**federally assisted construction contract**" as defined in [41 CRF Part 60-1.3](#), and except as otherwise may be provided under [41 CRF Part 60](#), then during performance of this Contract, the Contractor agrees as follows:

(1) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, sexual orientation, gender identity, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, sexual orientation, gender identity, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(2) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, sexual orientation, gender identity, or national origin.

(3) The Contractor will not discharge or in any other manner discriminate against any employee or applicant for employment because such employee or applicant has inquired about, discussed, or disclosed the compensation of the employee or applicant or another employee or applicant. This provision shall not apply to instances in which an employee who has access to the compensation information of other employees or applicants as a part of such employee's essential job functions discloses the compensation of such other employees or applicants to individuals who do not otherwise have access to such information, unless such disclosure is in response to a formal complaint or charge, in furtherance of an investigation, proceeding, hearing, or action, including an investigation conducted by the employer, or is consistent with the Contractor's legal duty to furnish information.

(4) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(5) The Contractor will comply with all provisions of [Executive Order 11246](#) of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(6) The Contractor will furnish all information and reports required by [Executive Order 11246](#) of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will

permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(7) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in [Executive Order 11246](#) of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in [Executive Order 11246](#) of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(8) The Contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs (1) through (8) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of [Executive Order 11246](#) of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance:

Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

2. Davis-Bacon Act (Prevailing Wage)

- a. If applicable, the Contractor (and its Subcontractors) for **prime construction contracts** in excess of \$2,000 must comply with the Davis-Bacon Act ([40 USC 3141-3148](#)) as supplemented by Department of Labor regulations ([29 CFR Part 5](#), "Labor Standards Provisions Applicable to Contracts Covering Federally Financed and Assisted Construction").
- b. The Contractor (and its Subcontractors) shall pay all mechanics and laborers employed directly on the site of the work, unconditionally and at least once a week, and without subsequent deduction or rebate on any account, the full amounts accrued at time of payment, computed at wage rates not less than those stated in the advertised specifications, regardless of any contractual relationship which may be alleged to exist between the Contractor or subcontractor and the laborers and mechanics;
- c. The Contractor will post the scale of wages to be paid in a prominent and easily accessible place at the site of the work;
- d. There may be withheld from the Contractor so much of accrued payments as the contracting officer considers necessary to pay to laborers and mechanics employed by the Contractor or any Subcontractor on the work the difference between the rates of wages required by the Contract to be paid laborers and mechanics on the work and the rates of wages received by the laborers and mechanics and not refunded to the Contractor or Subcontractors or their agents.

3. Copeland "Anti-Kickback" Act

If applicable, the Contractor must comply with the [Copeland "Anti-Kickback" Act \(40 USC 3145\)](#), as supplemented by Department of Labor regulations ([29 CFR Part 3](#), "Contractors and Subcontractors on Public Building or Public Work Financed in Whole or in Part by Loans or Grants from the United States"), which prohibits the Contractor and subrecipients from inducing, by any means, any person employed in the construction, completion, or repair of public work, to give up any part of the compensation to which he or she is otherwise entitled.

4. Contract Work Hours and Safety Standards Act

If the Contract is **in excess of \$100,000** and **involves the employment of mechanics or laborers**, the Contractor must comply with [40 USC 3702](#) and [3704](#), as supplemented by Department of Labor regulations ([29 CFR Part 5](#)), as applicable.

5. Rights to Inventions Made Under a Contract or Agreement

If the Contract is funded by a federal “funding agreement” as defined under 37 CFR §401.2 (a) and the recipient or subrecipient wishes to enter into a contract with a small business firm or nonprofit organization regarding the substitution of parties, assignment or performance of experimental, developmental, or research work under that “funding agreement,” the recipient or subrecipient must comply with 37 CFR Part 401, “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements,” and any implementing regulations issued by the awarding agency.

6. Clean Air Act

If this Contract is **in excess of \$150,000**, the Contractor must comply with all applicable standards, orders, and regulations issued under the Clean Air Act (42 USC 7401-7671q) and the Federal Water Pollution Control Act (33 USC 1251-1387). Violations must be reported to the federal awarding agency and the regional office of the Environmental Protection Agency.

7. Debarment and Suspension

A “contract award” (see [2 CFR 180.220](#)) must not be made to parties listed on the government-wide exclusions in the [System for Award Management](#) (SAM), in accordance with the OMB guidelines at 2 CFR 180 that implement Executive Orders 12549 (3 CFR part 1986 Comp., p. 189) and 12689 (3 CFR part 1989 Comp., p. 235), “Debarment and Suspension.” SAM Exclusions contains the names of parties debarred, suspended, or otherwise excluded by agencies, as well as parties declared ineligible under statutory or regulatory authority other than Executive Order 12549.

8. Byrd Anti-Lobbying Amendment

If this Contract **exceeds \$100,000**, bidders and the Contractor must file the certification required under [31 USC 1352](#).

9. Procurement of Recovered Materials

Under [2 CFR 200.322](#), a non-Federal entity that is a state agency or agency of a political subdivision of a state **and its contractors** must comply with section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act. The requirements of Section 6002 include procuring only items designated in guidelines of the Environmental Protection Agency (EPA) at [40 CFR part 247](#) that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition, where the purchase price of the item exceeds \$10,000 or the value of the quantity acquired during the preceding fiscal year exceeded \$10,000; procuring solid waste management services in a manner that maximizes energy and resource recovery; and establishing an affirmative procurement program for procurement of recovered materials identified in the EPA guidelines.

Byrd Anti-Lobbying Certification

The following certification and disclosure regarding payments to influence certain federal transactions are made under FAR 52.203-11 and 52.203-12 and [31 USC 1352](#), the “Byrd Anti-Lobbying Amendment.” Hyperlinks are provided for convenience only; broken hyperlinks will not relieve Contractor from compliance with the law.

1. [FAR 52.203-12](#), “Limitation on Payments to Influence Certain Federal Transactions” is hereby incorporated by reference into this certification.
2. The bidder, by submitting its proposal hereby certifies to the best of his or her knowledge and belief that:
 - a. No federal **appropriated** funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress on his or her behalf in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any federal contract, grant, loan, or cooperative agreement;
 - b. If any funds **other than federal appropriated funds** (including profit or fee received under a covered federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a member of Congress on his or her behalf **in connection with this solicitation**, the bidder must complete and submit, with its proposal, [OMB standard form LLL, Disclosure of Lobbying Activities](#), to the Solicitation Manager; and
 - c. He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$150,000 must certify and disclose accordingly.
3. This certification is a material representation of fact upon which reliance is placed at the time of Contract award. Submission of this certification and disclosure is a prerequisite for making or entering into this Contract under [31 USC 1352](#). Any person making an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision is subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

Signed by:

[Type name and title]
[Type company name]

Date: 9/13/2018

ATTACHMENT A

Project Title: "Fish health testing services"

Proposed Budget

Proposed Work	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26
Job 1 Historical Pathogen Review	NA	NA	NA	NA	NA	NA	NA
Job 2 Broodstock Plan Analysis	NA	NA	NA	NA	NA	NA	NA
Job 3 Fish Health Inspection Policy Analysis	NA	NA	NA	NA	NA	NA	NA
Job 4 Wild Fish Pathogen and Emerging Disease Analysis	NA	NA	NA	NA	NA	NA	NA
Job 5 Species Fish Health Analysis	NA	NA	NA	NA	NA	NA	NA
Job 6 Write Annual Reports	NA	NA	NA	NA	NA	NA	NA
Job 7 Write Final Report	NA	NA	NA	NA	NA	NA	NA
Contracts	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000
Totals	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000	\$280,000

Appendix A. Responsibilities and Deliverables

A. MSU Aquatic Animal Health Laboratory Deliverables

1. Report form and submissions
 - a. Forms required by DNR for requesting fish health work from MSU AAHL and reporting to the DNR, will be provided by the DNR to MSU AAHL.
 - b. Reports to the DNR will be submitted to the DNR Fish Health Coordinator using the appropriate DNR data format, unless otherwise agreed upon by the parties.
 - c. Results of clinical exams, drug sensitivity, treatment recommendations, bacteriology, virology, BKD screening, VHS only tests, and preliminary reports will be submitted to the DNR Fish Health Coordinator with copies to the respective Area Hatchery Manager and Hatchery Biologists for hatchery cases, via email. Final annual reports will be submitted electronically via email to the DNR Fish Health Coordinator and a hard copy signed by the certifying fish health person will be mailed to the DNR Fish Production Manager and DNR Fish Health Coordinator.
 - d. Reporting time frames are provided below for each case type. If case submissions occur at the end of the fiscal year where final reports will be due after October 15th, they will be considered part of the next fiscal year for invoicing requirements.
2. Inspection Case Reports
 - a. Preliminary Inspection reports are due 6 weeks after receipt of samples.
 - b. Final Inspection reports are due 10 weeks after receipt of samples.
3. Diagnostic Case Reports
 - a. Results of clinical exam due one day after receipt of samples.
 - b. Drug sensitivity and treatment recommendations due 5 days after receipt of samples.
 - c. Results of bacteriology due 14 days after receipt of samples.
 - d. Results of virology and preliminary diagnostic reports are due 6 weeks after receipt of samples.
 - e. Final diagnostic reports are due 10 weeks after receipt of samples.
4. Virology Only Case Reports
 - a. Preliminary virology only reports are due 6 weeks after receipt of samples
 - b. Final virology only reports are due 10 weeks after receipt of samples
5. BKD Screening Case Reports
 - a. Results of BKD testing due either within one week of day samples are received or 10 hours after receipt of samples.
 - b. Final BKD screening report due 2 weeks after testing of samples.
6. VHS Only Case Reports
 - a. Preliminary VHS only report due 28 days after receipt of samples.
 - b. Final VHS only report due 10 weeks after receipt of samples.
7. Other Reports
 - a. Case list—up to date list of all DNR cases submitted to MSU AAHL for the current fiscal year
 - i. Prepared in the format provided by DNR.
 - ii. Due the first of each month and submitted to the DNR Fish Health Coordinator.
 - b. Annual report
 - i. Prepared in the format provided by DNR.
 - ii. A summary of fish health work done by MSU AAHL for DNR for the fiscal year.
 - iii. Includes completed Salmonid Importation and Hatchery Classification forms as required by the Great Lakes Fish Health Committee.

- iv. Due December 1 of the year following the fiscal year and submitted to the DNR Fish Health Coordinator.
 - c. Final Report
 - i. This report will be required if the contract is not renewed at the end of the contract period.
 - ii. Prepared in the format provided by DNR.
 - iii. A summary of all fish health work done by MSU AAHL for DNR during the contract period for Jobs 1-5.
 - iv. Due December 1 of the year following the final fiscal year of the contract, if the contract is not renewed, and submitted to the DNR Fish Health Coordinator.
- 8. Equipment and Vehicles
 - a. Specialized DNR fish health equipment on loan to MSU
 - i. Maintenance of this equipment, including repairs, will be the responsibility of the MSU AAHL
 - ii. Equipment on loan will be returned to the DNR at the end of the contract, in a condition that is similar to the condition at the time of loan.
 - b. A vehicle will be provided for travel related to DNR contracted fish health work or other agreed upon arrangements shall be made for DNR contracted fish health travel. The vehicle shall only be used for DNR required fish health work.
 - i. Travel logs will be faxed to DNR on the first of every month to the DNR Fish Health Coordinator
 - ii. A fuel card is included with the vehicle; receipts for fuel must be retained and sent to the DNR monthly by the 15th of the next month to the DNR Fish Health Coordinator. Maintenance of the vehicle is the responsibility of the MSU AAHL and the costs for the maintenance are covered by the vehicle lease agreement with State of Michigan, Vehicle and Travel Services unit. All vehicle maintenance shall be coordinated with the DNR Fish Health Coordinator

B. DNR Responsibilities

- 1. Coordination of fish health work between DNR and MSU AAHL
 - a. Process requests from DNR
 - i. Requests for non-critical fish health work made to AAHL at least two weeks prior to need.
 - ii. Complete and submit inspection form to AAHL for annual production and broodstock inspections and develop schedule for inspection work with AAHL one month prior to inspections.
 - iii. Complete and submit health history form to AAHL for diagnostic work at the time diagnostic work is requested.
 - iv. Complete and submit disease form-wild fish to AAHL for diagnostic or inspection work on wild fish at the time samples are submitted.
 - b. Sample submission
 - i. Submit samples following MSU AAHL protocols for sample preservation and shipping.
 - c. Distribute reports
 - i. Distribute reports received from MSU AAHL to DNR personnel within one week of receipt.
 - ii. Submit reports to MSU AAHL for groups where treatment was recommended that include results of treatment or justification if treatment was not administered within one week of receipt of report from MSU.
 - d. Assist in managing the fish health database

- e. Manage fish health budget and contract
- 2. Database access
 - a. Provide full access to DNR fish production and fish health databases along with any other relevant information so MSU AAHL has access to information related to fish in hatcheries or wild, including environmental conditions, mortality trends, lot information for hatchery fish, and treatment records for hatchery fish.
- 3. Equipment
 - a. Specialized and available DNR fish health equipment will be made available to loan to the MSU AAHL.
 - b. Maintenance of this equipment, including repairs, will be the responsibility of the MSU AAHL.
 - c. Equipment on loan will be returned to the DNR at the end of the contract, in a condition that is similar to the condition at the time of loan.
- 4. Vehicle
 - a. A vehicle will be provided to the MSU AAHL for travel related to DNR contracted fish health work or other agreed upon arrangements shall be made for DNR contracted fish health travel. The vehicle shall only be used for DNR required fish health work.

Appendix B. Anticipated calendar of required annual fish health work that includes full inspection, virology only and BKD screening (QELISA).

January	February	March	April
Virology Only Gametes-Broodstock Captive Broodstock-Marquette, Oden BKD-Screening-Broodstock QELISA Screening-Oden	Full Inspection-Production Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake	Full Inspection-Production Yearlings-Lake Superior State Univ. Spring fingerlings-Thompson, Wolf Lake	Full Inspection-Broodstock Walleye-Muskegon R.
Virology Only Gametes-Broodstock Captive Broodstock-Marquette, Oden BKD-Screening-Broodstock QELISA Screening-Oden	Full Inspection-Production Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake	Full Inspection-Production Spring fingerlings-Platte	Full Inspection-Broodstock Steelhead-Little Manistee R. Weir
Full Inspection-Production Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake BKD-Screening-Broodstock QELISA Screening-Oden	Full Inspection-Production Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake		Full Inspection-Broodstock Walleye- Little Bay de Noc
Full Inspection-Production and Broodstock Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake Surplus broodstock-Oden	Full Inspection-Production Yearlings- Harrietta, Marquette,Oden, Platte R, Thompson, Wolf Lake Spring fingerlings-Marquette	Full Inspection-Broodstock Walleye-Tittabawasee R.	
May	June	July	August
	VHS Only-Production Fry-Great Lakes Musky-Wolf Lake Spring fingerling-walleye-rearing ponds		Full Inspection-Production Spring Fingerling
	VHS Only-Production Spring fingerling-walleye-rearing ponds		Full Inspection-Broodstock Captive Broodstock-Marquette BKD-Screening-Broodstock QELISA Screening-Oden
Full Inspection and Non-lethal Inspection-Broodstock Great Lakes Musky-Detroit R. (Full and non-lethal) Lake Sturgeon-Black R., Sturgeon R., Other (non-lethal)		Full Inspection-Production Fall fingerlings-lake sturgeon Black River Streamside Sturgeon Facility	BKD-Screening-Broodstock QELISA Screening-Oden
Non-lethal Inspection-Broodstock Great Lakes Musky-Detroit R VHS Only-Production Spring fingerling-walleye-rearing ponds		Full Inspection-Production Fall fingerlings-Harrietta, Marquette, Oden, Platte R., Thompson, Wolf Lake, Marquette	BKD-Screening-Broodstock QELISA Screening-Oden
September	October	November	December
BKD-Screening-Broodstock QELISA Screening-Oden	Full Inspection-Broodstock Chinook-Little Manistee R. Weir BKD-Screening-Broodstock QELISA Screening-Oden	BKD-Screening-Broodstock QELISA Screening-Marquette, Oden	BKD-Screening-Broodstock QELISA Screening-Marquette, Oden
BKD-Screening-Broodstock QELISA Screening-Oden	BKD-Screening-Broodstock QELISA Screening-Oden	BKD-Screening-Broodstock QELISA Screening-Marquette, Oden	BKD-Screening-Broodstock QELISA Screening-Marquette, Oden
	Full Inspection-Broodstock	BKD-Screening-Broodstock	

BKD-Screening-Broodstock QELISA Screening-Oden	Coho-Platte R. Weir BKD-Screening-Broodstock QELISA Screening-Oden	QELISA Screening-Marquette, Oden	
BKD-Screening-Broodstock QELISA Screening-Oden	Full Inspection-Broodstock Captive Broodstock-Oden BKD-Screening-Broodstock QELISA Screening-Marquette		BKD-Screening-Broodstock QELISA Screening-Oden

Appendix C. Required annual full inspection testing by species. Testing for species not listed below or for other purposes, such as wild fish pathogen surveys or VHS only, may not require same level of testing. For work other than full inspections, required tests will be identified by DNR when testing is requested.

Species	VHSv	IHN IPN Rs As Yr	WD ISA	HSP	LMBv	CCV	WSIv WSHv	SVCv KHVv
Salmonids								
Atlantic salmon	X	X	X					
Brook trout	X	X	X					
Brown trout	X	X	X					
Chinook salmon	X	X	X					
Coho salmon	X	X	X					
Lake herring	X	X	X					
Lake trout	X	X	X					
Rainbow trout	X	X	X					
Splake	X	X	X					
Steelhead	X	X	X					
Cool and Warmwater								
Channel catfish	X					X		
Lake sturgeon	X	X					X	
Muskellunge	X	X						
Northern Pike	X	X						
Walleye	X	X		X				
All Others	Tests for other species not listed will be specified when testing is requested.							

Test Codes:

VHSv – Viral Hemorrhagic Septicemia virus	IPN – Infectious Pancreatic Necrosis	WSHv – White Sturgeon Herpesvirus
IHN – Infectious Hematopietic Necrosis	Rs – <i>Renibacterium salmoninarum</i> (BKD)	SVCv – Spring Viremia of Carp
WD – <i>myxobolus cerebralis</i> (whirling disease)	As – <i>Aeromonas salmonicida</i> (furunculosis)	KHVv – Koi Herpesvirus
Yr – <i>Yersinia ruckeri</i> (ERM)	LMBv – Largemouth Bass virus	CCV – Channel catfish virus
HSP – Heterosporis	ISA – Infectious Salmon Anemia	WSIv – White Sturgeon Iridovirus

Appendix D. Aquatic Animal Health Laboratory Fee Schedule

Fish Health Services

Laboratory Service	Fee/lot (lot: 60 fish of a single species and of the same age)	Fee/Sample
Fish Health Certification* package, including dissection, clinical examination, external & GIT parasitological analysis, bacterial pathogens of concern, and identification & verification of isolated notifiable pathogens with serological and/or molecular assays	\$1700/lot \$1200/lot if submitting > 100 cases/year	N/A
DNA testing (Renibacterium salmoninarum, Aeromonas salmonicida, Yersinia ruckeri, HSV, IPNV, IHNV, LMBV, or Nucleospora salmonis)	N/A	\$30/sample per pathogen
Clinical cases: including: clinical and postmortem examination, diagnostics (bacterial, viral, parasite), along with the necessary confirmation and treatment recommendation	\$500, up to 20 fish	N/A
Clinical case: diagnostic/treatment follow-up if needed (viral or bacterial)	\$150	
Whirling Disease testing, including confirmation if necessary	\$400	\$10/sample, minimum 12 samples
Confirmatory histopathology	N/A	\$20/sample
Virus testing (VHSV, LMBV, IHNV, IPNV), minimum 28-day results on Tissue Culture, 2 cell lines, including viral confirmation, 5 fish per pool	\$450, up to 60 fish/lot \$800, up to 120 fish/lot	\$40/pool (maximum 5 samples per pool)
Fish health check for reportable bacterial pathogens only	\$450	\$10/sample, minimum 12 samples
Identification of other non-reportable bacterial pathogens for diagnostic or research purposes	Determined on case by case basis	
Renibacterium salmoninarum (BKD): Q-ELISA, individual fish	\$450, up to 60 fish/lot \$800, up to 120 fish/lot	\$10/sample, minimum 12 samples
Dissections and organ collection for diagnostic assays	\$100	\$1.75/fish
Screen for Heterosporis sp., including Confirmation	\$150	\$3/fish
Parasitic evaluation of skin/gills	\$250	\$5/fish
Development of autologous vaccine	\$1,000/batch	
Consultation	Determined on case by case basis	
Shipping cost	Determined on case by case basis	

*Michigan Fish Health Certifications include testing for reportable fish diseases as listed by the GLFC. If certifications are required for states outside of Michigan, please provide individual requirements for each state at the time of sample submission. Additional testing requirements may increase costs.