



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF  
ENVIRONMENT, GREAT LAKES, AND ENERGY  
LANSING



LIESL EICHLER CLARK  
DIRECTOR

September 18, 2020

VIA E-MAIL

Mr. David P. Gibson Jr., GS13, DAF  
Program Manager  
BRAC Program Management Division  
AFCEC/CIBE  
BRAC Program Management Division  
Bldg. 1, 3515 Southern General McMullin Ave.  
San Antonio, Texas 78266

Subject: Identification of State Applicable or Relevant and Appropriate  
Requirements, Former Wurtsmith Air Force Base; Oscoda, Michigan

Dear Mr. Gibson:

The State of Michigan has received your August 6, 2020, letter requesting the Michigan Department of Environment, Great Lakes, and Energy (EGLE) provide the United States Air Force (Air Force) a list of its identified state applicable and relevant and appropriate requirements (ARARs) and other advisories, criteria, or guidance to be considered that may be useful in developing a remedy at the site (TBCs, "To Be Considered") for the remedial investigation, including the interim remedial actions, for the Former Wurtsmith Air Force Base. The State appreciates your commitment to the Air Force's obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq.*, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 CFR Part 300) regarding compliance with state law for its cleanup at the Former Wurtsmith Air Force Base.

Attached to this letter are two tables of the State's identified ARARs and TBCs: one for the final remedy and one for the multiple proposed interim remedial actions that the Air Force has indicated will be part of the planned Remedial Investigation. These tables list State ARARs as well as State and local TBCs.

As indicated by the Air Force, Section 121(d) of the CERCLA requires that on-site remedial actions attain or waive federal environmental ARARs, or more stringent state environmental ARARs, upon completion of the remedial action. The State has limited its submission of ARARs and TBCs to state and local requirements, consistent with CERCLA's requirement that federal ARARs must be attained or waived, regardless of identification by the State. 42 USC 9621(d)(2).

While state proposed ARARs and TBCs must be timely identified in order to be binding requirements on a cleanup, federal ARARs must be attained or waived regardless of the

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State's identification under Section 121(d)(2). Thus, the Air Force is obligated to comply with federal ARARs regardless of their identification by the State. The State is, however, committed to working with the Air Force to help determine the federal ARARs for the Former Wurtsmith Air Force Base to ensure the cleanup protects the public health, safety, welfare, and the environment.

In addition, as noted by the Air Force in its ARARs request, as the remedy moves through the remedial investigation and feasibility study stages of the CERCLA process, the State will work with the Air Force toward a final ARARs list and reserves its right to add to or clarify the identified ARARs and TBCs.

We value the Air Force following the requirements of CERCLA and the NCP in requesting that the State timely identify ARARs and TBCs to help identify the State requirements early on that must be met in the process of selecting and implementing remedial actions at the Former Wurtsmith Air Force Base that protect public health and environment.

If you have additional questions concerning this matter, please contact me at 517-899-7524; [PlaceB1@Michigan.gov](mailto:PlaceB1@Michigan.gov); or EGLE, Remediation and Redevelopment Division, P.O. Box 30426, Lansing, Michigan 48909-7926.

Sincerely,



Beth Place, Project Manager  
Superfund Section  
Remediation and Redevelopment Division

Attachments

att/cc: Ms. Polly Synk, AG  
Ms. Megen Miller, AG  
Mr. Mike Neller, EGLE  
Mr. David Kline, EGLE  
Mr. John Bradley, EGLE  
Mr. Brad Ermisch, EGLE

## State Chemical-Specific ARARs

<b>STATE ARARs for US AIR FORCE FINAL REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE CHEMICAL-SPECIFIC ARARs</b>				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<p style="text-align: center;"><b>Michigan Natural Resources and Environmental Protection Act (NREPA), Public Act 451, Part 31 - Water Resources Protection</b></p>	<p>Mich. Comp. Laws 324.3101-3133</p>	<p>Prohibits direct or indirect discharge to waters of the state of a substance that is injurious to public health, safety, welfare; to domestic, commercial, industrial, agricultural, recreational, or other uses of waters of the state; to the value or utility of riparian lands; to livestock, wild animals, birds, fish, aquatic life, or to their growth or propagation; and to the value of fish and game.</p> <p>Establishes rules specifying standards for several water quality parameters. Prohibits discharges unless authorized by a permit.</p>	<p>Applicable</p>	<p>Substantive requirements of an NPDES permit must be attained for any discharge to waters of the state as defined in Part 31. Any remedial action that results in the unacceptable discharge of injurious substances will not attain state ARARs.</p>
<p style="text-align: center;"><b>NREPA Part 31 Rules</b></p>	<p>Michigan Administrative Code (Mich. Admin. Code), R. 323.1041-1117 (Part 4 Rules)</p>	<p>The Part 4 Rules specify water quality standards which shall be met in all waters of the state. The rules require that all designated uses of the receiving water be protected, including indigenous aquatic life and wildlife.</p>	<p>Applicable</p>	<p>These rules prescribe water quality standards for surface water for pollutants, including toxic substances, and drive the need to reduce contaminant loading to surface waters and groundwater, and aquatic life and wildlife. Surface water quality standards may be used to assess surface water quality in the vicinity of the Site and as a means to gauge effectiveness of a remedial action.</p>

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<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 323.1201-1221 (Part 8, Water Quality-Based Effluent Limit Development for Toxic Substances Rules)	In accordance with federal WPCA and CWA, the Part 8 Rules establish chemical-specific water quality-based effluent limits (WQBELs) for point-source discharges.	Applicable	These rules establish water quality standards for pollutants for surface waters.  Part 201 requires that remedial actions comply with Part 31 and its promulgated rules. Criteria are applicable to venting groundwater, storm water, and discharge associated with implementing the remedial action.
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 323.2101-2104, 2136-2140, 2142-2145, 2149, 2152-2155, 2160-2161, 2190 (Part 21, Wastewater Discharge Permit Rules)	The Part 21 Rules establish waste effluent discharge system procedures for the NPDES program.	Relevant and Appropriate	Substantive requirements of state discharge permits (including storm water permits) must be attained for remedial actions taking place on site.
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R.323.2201 - 2240 (Part 22, Groundwater Quality Rules)	The Part 22 Rules establish the process for a groundwater discharge permit program and set groundwater classification and associated water quality standards.	Relevant and Appropriate	Substantive requirements will apply to any remedial alternatives that impact groundwater.

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<b>NREPA, Part 55 - Air Pollution Control</b>	Mich. Comp. Laws 324.5501-5542	Authorizes establishment of standards for ambient air quality and for emissions. Authorizes promulgation of rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property. Establishes permitting authority.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., fumes, gas, mist, odor, equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.
<b>Part 55 Rules</b>	Mich. Admin. Code, R. 336.1101-2823	Establishes rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.

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<b>NREPA, Part 201 - Environmental Remediation</b>	Mich. Comp. Laws 324.20101 - 20142	Part 201 requires appropriate response activity to eliminate unacceptable risks to public health, safety, or welfare, or to the environment from environmental contamination at facilities within the state. Authorizes establishment of generic and site-specific cleanup criteria. Part 201 generic criteria apply to hazardous substances or environmental contaminants to identify exceedances except where site-specific criteria are developed. Part 201 provides for the identification, risk assessment, evaluation, remediation, and long-term management of contaminated sites within the State.	Applicable; Relevant and Appropriate	<p>By statute, the [Wurtsmith AFB] is a "facility" as defined in Part 201. Where Michigan's cleanup standards are more stringent than federal requirements, the substantive requirements of Part 201 are applicable.</p> <p>Michigan sets generic criteria for certain per- and polyfluoroalkyl substances (PFAS), which do not have standards under federal law. The criteria for these substances are applicable.</p> <p>If site-specific cleanup criteria are developed, the statutorily required applicable cancer (1 in 100,000) and noncancer (HI=1) risk levels in Michigan's NREPA at Mich. Comp. Laws 324.20120a and 20120b and the use of best available information can be more protective than federal standards and is relevant and appropriate where it is more protective.</p>
<b>NREPA Part 201 rules</b>	Mich. Admin. Code, R. 299.1-299.50; R 299.51001-51021	Part 201 rules set generic site cleanup criteria for hazardous substances in soil and groundwater.	Applicable	By statute, the Wurtsmith AFB is a "facility" as defined in Part 201. Response activities conducted at the site must meet state-established cleanup criteria where more stringent than federal standards.

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<b>Michigan Safe Drinking Water Act (SDWA), Act 399 of 1976; SDWA Rules</b>	Mich. Comp. Laws 325.1001 – 1023; Mich. Admin. Code, R. 325.10101-12820	The act and rules provide maximum contaminant levels for public water supplies.	Applicable; Relevant and Appropriate	Applicable to contaminant impacts to a public water supply. The MCLs are relevant and appropriate to groundwater cleanup actions intended to protect for drinking water use. The Michigan SDWA has established MCLs for seven PFAS compounds: Perfluorononanoic Acid (PFNA) – 6 ng/L Perfluorooctanoic Acid (PFOA) – 8 ng/L Perfluorooctane Sulfonic Acid (PFOS) – 16 ng/L Perfluorohexane Sulfonic Acid (PFHxS) – 51 ng/L Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) (a GenX compound) – 370 ng/L Perfluorobutane Sulfonic Acid (PFBS) – 420 ng/L Perfluorohexanoic Acid (PFHxA) – 400,000 ng/L

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<p><b>MDHHS "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County</b></p>	<p>May 2, 2012. MDCH Issues "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County  <a href="https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html">https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html</a></p>	<p>The Michigan Department of Community Health (now MDHHS) issued a "do not eat" advisory for all fish taken from Clarks Marsh, south of the former Wurtsmith Air Force Base, in Iosco County based on the presence of perfluorinated chemicals (now called PFAS) in fish tissue samples.</p>	<p>TBC (to be considered)</p>	<p>The Do Not Eat Fish advisory for Clarks Marsh is still in place. The fish consumption advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.</p> <p>The Michigan Eat Safe Fish Consumption Guide below details additional requirements for the areas around the Site. Clarks Marsh remains "do not eat" for all species and lengths of fish.</p>



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Michigan Eat Safe Fish Consumption Guide as issued by the Michigan Department of Health and Human Services	MDHHS, 2018. Michigan Eat Safe Fish Consumption Guide for Northeast Michigan <a href="https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf">https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf</a>	MDHHS's Eat Safe Fish Consumption Guides provide fish consumption advice by fish species and fish length. The Eat Safe Fish Guide for Northeast Michigan provides advice for all species of fish, as well as specific advice for various species of fish, and specific advice for specific water bodies. The consumption guidelines are based on data collected and analyzed, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming fish that contain environmental contaminants.	TBC (to be considered)	The Michigan Eat Safe Fish Consumption Guide for Northeast Michigan provides fish consumption advice for AuSable River, Van Etten Creek, Clark's Marsh, Allen Lake, and Van Etten Lake by fish species and fish length. The Eat Safe Fish Guide is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.

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<p><b>Final Health Consultation Guide Regarding PFOS in Fish by the Michigan Department of Health and Human Services</b></p>	<p>MDHHS, 2017. Health Consultation, Perfluorooctane Sulfonate (PFOS) in Fish, Former Wurtsmith Air Force Base  <a href="https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf">https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf</a></p>	<p>The Michigan Department of Health and Human Services (MDHHS) conducted this evaluation for the federal Agency for Toxic Substances and Disease Registry (ATSDR) under a cooperative agreement. ATSDR conducts public health activities (assessments/consultations, advisories, education) at sites of environmental contamination. The purpose of this document is to identify potentially harmful exposures and recommend actions that would minimize those exposures.</p>	<p>TBC (to be considered)</p>	<p>This document discusses the perfluorinated chemical (PFC) contamination at the former Wurtsmith Air Force Base (WAFB) in Oscoda, Michigan, with a focus on perfluorooctane sulfonate (PFOS) levels in fish sampled from nearby waterbodies. The document describes, in brief, the Michigan Department of Health and Human Services (MDHHS) public health hazard determination and resulting emergency Do Not Eat fish consumption advisory due to the elevated PFOS levels in the fish. The document also discusses MDHHS health education outreach actions conducted to-date. Lastly, the document lists conclusions and recommendations to address the continued release of PFCs into the waters surrounding WAFB.</p>

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<p><b>Michigan Department of Health and Human Services' "Do Not Eat" Deer Advisory</b></p>	<p>MDHHS, October 19, 2018. "Do Not Eat" Advisory Issued for Deer Taken within five miles of Clark's Marsh, Oscoda Township.  <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html</a></p>	<p>MDHHS issued a Do Not Eat advisory for deer taken within approximately five miles of Clark's Marsh in Oscoda Township due to high levels of PFOS found in a deer.</p>	<p>TBC (to be considered)</p>	<p>The five-mile radius encircles the Wurtsmith base property and covers what the DNR has estimated to be the expected travel range of deer living in or near the marsh. The area covered by the deer consumption advisory issued can be described as: From Lake Huron west along Aster Street, west on Davison Road, north on Brooks Road, east on Esmond Road, north on Old US 23, north on Wells Road, west on River Road, north on Federal Forest Road 2240, north on Lenard Road, north on Indian Road, and East on E. Kings Corner Road (along the county line) toward Lake to Lake Road, to Lake Huron.</p> <p>The advisory map was updated on September 18, 2019 to identify the advisory with the Public Land Survey System, rather than road names. The advisory includes portions of T24N R08E, T24N R09E, T23N R08E and T23N R09E. The map, including the Section numbers, is available at: <a href="https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf">https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf</a></p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories</p>
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				may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Van Etten Lake Foam Advisory</b>	<p>DHD2, September 1, 2017. “Do Not Eat the Foam” Advisory. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--00.html</a></p> <p>(Actual advisory attached at the end of these ARAR tables)</p>	<p>On September 1, 2017, District Health Department #2 issued a “do not eat the foam” advisory for Van Etten Lake cautioning residents against swallowing the foam.</p>	TBC (to be considered)	<p>The foam advisory provides information urging residents to avoid ingesting the foam at Van Etten Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.</p>
<b>District Health Department No. 2 Cedar Lake Foam Advisory</b>	<p>DHD2, June 30, 2020. Residents should avoid foam on Cedar Lake due to PFAS and reminded to continue avoiding foam on Van Etten Lake.</p> <p><a href="https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf">https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf</a></p>	<p>Urges residents to avoid foam on both Van Etten Lake and Cedar Lake due to high levels of PFAS.</p>	TBC (to be considered)	<p>The foam advisory provides information urging residents to avoid foam at Van Etten Lake and Cedar Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.</p>

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<b>Michigan Department of Health and Human Services Statewide Foam Advisory</b>	MDHHS, July 1, 2020. MDHHS reminds Michiganders to avoid foam on lakes and rivers with high levels of PFAS.  <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html</a>	Urging people to avoid foam on Michigan lakes and rivers statewide known to have PFAS in the water, including best practices of rinsing off foam and bathing after outdoor activities. Helps individuals distinguish natural foam from PFAS foam.	To Be Considered (TBCs)	The foam advisory provides information urging residents to avoid foam statewide at lakes and rivers known to have PFAS in the water. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

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<p><b>Wild Game Advisory as issued by Michigan Department of Health and Human Services</b></p>	<p>DHHS, December 8, 2019. Public Health Advisory for Wildlife from Clark's Marsh.</p> <p><a href="https://www.dhd2.org/wurtsmith-activities">https://www.dhd2.org/wurtsmith-activities</a></p> <p><a href="https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf">https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf</a></p>	<p>Wild Game Advisories apply to various species of game living Clark's Marsh, near the former Wurtsmith Air Force Base. The consumption guidelines are based on testing of game from the area, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming game that contain environmental contaminants.</p>	<p>TBC (to be considered)</p>	<p>The Public Health Advisory for Wildlife provides wild game consumption advice for all resident aquatic and semi-aquatic wildlife taken from Clark's Marsh.</p> <p>The advisory has been posted at Clark's Marsh.</p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories may also be useful as a metric of the effectiveness of the response actions.</p>

## State Action-Specific ARARs

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<b>NREPA, Part 17 - Michigan Environmental Protection Act</b>	Mich. Comp. Laws 324.1701 - 324.1706	Prohibits the pollution, impairment, or destruction of the State's natural resources or the public trust in those resources.	Applicable	Remedial actions must be conducted in a manner that does not pollute, impair or destroy the State's natural resources.
<b>NREPA, Part 31 - Water Resources Protection</b>	Mich. Comp. Laws 324.3101-3133	Prohibition of discharge waste or waste effluent into surface water without approval of the State and establishment of rules; provisions in 3109b allow for mixing zone for discharge of venting groundwater, 3108 prohibits filling or grading of a floodplain unless permitted by the State, and 3109b defines when Part 31 remedial obligations are met.	Applicable	Remedial actions may involve discharges to waters of the state. Substantive requirements of an NPDES permit must be attained. For any remedial action where waste is left in place, the mixing zone criteria shall not be less protective than for point source discharges. For any remedial alternative meeting the requirements of Part 201, Part 31 requirements are satisfied.

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<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R.323.1041 - 1117 (Part 4 rules, Water Quality Standards); R 323.1171 - 1181; R 323.1201 - 323.1221 (Part 8 rules, Water Quality-Based Effluent Limit Development for Toxic Substances); R 323.1311 - 323.1329 (Part 13 rules, Floodplains and Floodways Rules); R 323.2101- 323.2197 (Part 21 rules, Wastewater Discharge Permits); R 323.2201 2240 (Part 22 rules, Groundwater Quality)	Prohibition of discharge waste or waste effluent into surface water without approval of the State and establishment of rules; Part 4 rules specify standards for all waters of the State, and require that all designated uses of the receiving water be protected, including aquatic life and wildlife. Part 8 rules establish water quality-based effluent limits. Part 13 rules regulate activities to occupy, fill, or grade lands in a floodplain, streambed, or channel of a stream. The Part 22 rules set water quality rules applicable to discharges to groundwater.	Applicable	Remedial actions may involve discharges to waters of the state. Substantive requirements of an NPDES permit would need to be met.  Standards are applicable to venting groundwater, storm water, and discharges associated with the remedial action. Regulates discharges to waters of the State or onto the ground or groundwater if uses are potentially injured.



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<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 324.2001 - 324.2009 (Part 5 rules, Spillage of Oil and Pollution Materials)	Set requirements for oil storage and on-land facilities to maintain surveillance and provide adequate protections against loss of pollution materials reaching the waters of the state.	Relevant and appropriate	Substantive requirements may apply. Applies to any temporary or permanent land-based industry, plant, establishment, firm, storage site, or other facility, which receives, processes, manufactures, uses, stores or ships oil or polluting materials and at which there is present an amount of any oil or polluting material equal to or more than its threshold management quantity and which is so situated that loss of polluting materials could directly or indirectly reach the surface or groundwaters of this state, including any facility which discharges through a public sewer system.
<b>NREPA, Part 55 - Air Pollution Control</b>	Mich. Comp. Laws 324.5501-324.5542	Defines air quality standards for potential air emissions sources. Prohibits the emissions of air contaminants in quantities that cause injurious effects to human health, animal life, plant life of significant economic value, and/or property or that interferes with the enjoyment of life or property in the state.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., fumes, gas, mist, odor, equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.

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<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>Part 55 Rules</b>	Mich. Admin. Code, R.336.1101-2823	Establishes rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.
<b>NREPA, Part 91 - Soil Erosion and Sediment Control</b>	Mich. Comp. Laws 324.9101-324.9123a	Establishes rules prescribing soil erosion and sedimentation control plans, procedures, and measures.	Relevant and Appropriate	Applies to actions that results in earth changes where more than one acre of land is affected or the regulated action occurs within 500 feet of a lake or stream. Soil erosion and sedimentation control measures must be implemented and maintained. Substantive requirements of permit, including any local ordinances, must be satisfied.
<b>NREPA Part 91 Rules</b>	Mich. Admin. Code, R. 323.1701-1714	Requirements for owners of land undergoing an earth change. Establishes rules prescribing soil erosion and sedimentation control plans, procedures, and measures.	Relevant and Appropriate	For any remedial action involving an earth change, soil erosion and sedimentation control measures must be implemented and maintained. Substantive requirements of permit, including any local ordinances, must be satisfied

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<b>NREPA, Part 111- Hazardous Waste Management</b>	Mich. Comp. Laws 324.11105	<p>Establishes requirements for hazardous waste generators, transporters, and treatment/storage/disposal facilities.</p> <p>Michigan is a fully-authorized state for RCRA Subtitle C, therefore Part 111 of the NREPA needs to be identified in the Response Proposal as an ARAR.</p> <p>Administrative Rules define hazardous waste based on analytical procedures, usage, and process of generation</p>	Relevant and Appropriate	<p>Response activities may generate waste material that may be classified as hazardous waste from former base operations. Used for characterizing and identifying hazardous wastes and determining appropriate disposal options.</p> <p>Part 111 identifies cleanup standards under Part 201 to satisfy corrective action obligations. Depending on the remedy chosen, Part 111 may be an ARAR for the generation, transport, treatment, storage, and disposal of hazardous wastes from site remediation.</p> <p>Portions of the regulations may be useful as a means of determining onsite handling and transportation requirements, regardless of whether or not the area of removal qualifies as a TSD facility or a generator of hazardous wastes.</p>
<b>Part 111 Rules</b>	Mich. Admin. Code, R. 299.9101-11107	<p>Establishes requirements for hazardous waste generators, transporters, and treatment/storage/disposal facilities. Includes requirements for use of a manifest system (R 299.9608-9609) to track the type and quantity of hazardous waste received by or shipped from a facility.</p>	Relevant and Appropriate	<p>Response activities may generate waste material that may be classified as hazardous waste from former base operations. Used for characterizing and identifying hazardous wastes and determining appropriate disposal options.</p>

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<b>NREPA, Part 115- Solid Waste Management</b>	Mich. Comp. Laws 324 11501-11550	Establishes rules for methods of solid waste disposal and for design/operational standards for disposal areas.	Relevant and Appropriate	If materials generated by remedial activities are "solid waste", substantive requirements of Part 115 for disposal apply to remedial actions involving containment of nonhazardous waste onsite and to remedial actions involving onsite landfilling. Landfills that may be part of the project site and affected by remedial activities must comply with the requirements of Type III landfill standards for final cover and any other relevant closure requirements.
<b>Part 115 Rules</b>	Mich. Admin. Code, R. 299.4101-4922	<p>For onsite disposal facilities: Rules provide specifications for landfill final cover design to minimize erosion and infiltration to protect public health; landfill groundwater monitoring requirements, requirements for hydrogeological monitoring plan, monitoring network, and associated sampling, requirements for final cover materials, and Construction Quality Controls.</p> <p>For offsite disposal: Applies to remedial actions involving containment of nonhazardous waste and arrangements for offsite disposal as part of remedial actions.</p>	<p>If onsite disposal: Relevant and Appropriate</p> <p>If offsite disposal: TBC</p>	<p>If the project site includes landfills regulated under Part 115, the cover design requirements and rule specifications must be met. A design that keeps the final cover from being inundated is capable of limiting erosion and infiltration to the extent necessary to protect human health and the environment. Substantive portions of Construction Quality Control must be met in Remedial Design and Remedial Action.</p> <p>If disposal of non-hazardous waste, including but not limited to disposal of soils and sediments, will occur offsite, the requirements of permits and terms of the applicable county solid waste management plans must be followed.</p>

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<b>NREPA, Part 121 - Liquid Industrial Waste</b>	Mich. Comp. Laws 324.12101 - 324.12118	Imposes requirements on generators for storage, documentation, and handling for onsite liquid waste in preparation for transport, for the use of registered haulers, and for the inspection of vehicles and control of the disposal of wastes.	Relevant and Appropriate	Remedial actions may require transportation and disposal of liquid waste, and the Part 121 requirements apply to the storage and transport of those wastes.
<b>NREPA, Part 201 - Environmental Remediation</b>	Mich. Comp. Laws 324.20101 - 20142	Requires that a remedial action shall satisfy cleanup criteria; requirements for owner of facility, such as preventing exacerbation and exercising due care; restrictions on transfer of real property designated as a facility, and requirements that if residential criteria are not met, land use restrictions must be provided. Actions required upon approval of remedial action plans, elements of remedial action plans; required action if contaminated soil is moved off-site or relocated within the site.	Applicable	The remedial action implemented must meet generic or site-specific cleanup criteria; property cannot be transferred without notification of land use restrictions that apply to the site due to contamination. Actions leaving contamination in place must impose institutional controls to restrict activities that may interfere with the integrity of the remedial action and on activities that may result in unacceptable exposure. Substantive requirements of soil relocation provisions (Mich. Comp. Laws 324.20120c) apply to any movement of contaminated soils onsite. If soils are moved offsite, Part 201 applies outside the context of the remedy and any ARARs.
<b>NREPA Part 201 Rules</b>	Mich. Admin. Code, R.299.1-299.50	Cleanup Criteria Requirements for Remedial Actions and Interim Response Activity Designed to Meet Criteria	Applicable	The remedial action implemented must meet generic or site-specific cleanup criteria, applicable to all environmental media and exposure pathways.

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<b>NREPA Part 201 Rules</b>	Mich. Admin. Code, R. 299.51001-51021	Responsibilities of owners of facilities; Liable parties must provide notice to the department and adjacent land owners in certain situations, such as if hazardous substances emanate beyond the property boundary.	Relevant and Appropriate	For any property for which the USAF is the current owner, the USAF must comply with Part 201 and its implementing rules' due care requirements.
<b>NREPA, Part 301 - Inland Lakes and Streams</b>	Mich. Comp. Laws 324.30101 - 30113	Lists operations that are prohibited and conditions for operations impacting lakes and streams, including mitigation.	Relevant and Appropriate	For remedial alternatives involving placement of structures, fill, or dredging in a river channel or streambeds, the substantive requirements of these regulations may apply.
<b>Part 301 Rules</b>	Mich. Admin. Code, R.281.811-846	Regulates placement of structures, dredging or filling and other activities that may impact lake or stream bottoms and banks.	Relevant and Appropriate	For remedial alternatives involving placement of structures, fill, or dredging in a river channel or streambeds, the substantive requirements of these regulations may apply.
<b>NREPA, Part 303 - Wetland Protection</b>	Mich. Comp. Laws 324.30301 - 30329	Provides for protection and conservation of wetlands, as defined by state law, including establishing rules regarding wetland uses and prohibitions on future use.	Relevant and Appropriate	For certain remedial alternatives, the substantive requirements of Part 303 may be relevant and appropriate if wetlands located on or adjacent to portions of the Site are disturbed.
<b>Part 303 Rules</b>	Mich. Admin. Code, R.281.921-925, R 281.951-281.961	Provides categories and types of wetlands and corresponding mitigation ratios for impacts to varying types of wetlands, as well as availability of wetland banking	Relevant and Appropriate	Ratios and mitigation requirements may inform decisions about work in wetland areas.

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<b>Michigan Public Act 451, Part 307</b>	Mich. Comp. Laws 324.30701 - 324.30723	Applies to dams affected by a circuit court order establishing the level at which the lake is to be maintained. Provides the process for establishing and maintaining a normal level of an inland lake. Requires approval of department of plans for construction, repairs, or replacement of a dam maintained under Part 307; prohibits changing the established normal lake level except as provided in Part 307.	Relevant and Appropriate	Remedial actions may require work that affects dams or impoundments governed by Part 307 and its requirements, including Van Etten Dam and Foote Dam.

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<b>Michigan Public Act 451, Part 315 - Dam Safety</b>	Mich. Comp. Laws 324. 31501 - 324.31529	Applies to dams over 6' in height and over 5 acres are impounded during the design flood. Provides requirements for dam construction and maintenance to ensure that dams are properly constructed, inspected and maintained, and that the owners have adequately prepared for potential emergencies. Permits are required for the construction, enlargement, repair, alternation, removal, abandonment and reconstruction of state regulated dams. Inspection reports are required every three to five years for state regulated dams based on their hazard potential rating.	Relevant and Appropriate	Where dam evaluation and repair, or dam removal, is proposed or required, the substantive requirements of Part 315 will be relevant and appropriate, including for Van Etten Dam and Foote Dam.
<b>Part 315 Rules</b>	Mich. Admin. Code, R. 281.1301-1313	Sets forth process and required content of permits under Part 315, permit categories, inspection schedules, and penalties for noncompliance.	Relevant and Appropriate.	Where dam evaluation and repair, or dam removal, is proposed or required, the substantive requirements of Part 315 will apply.



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<b>NREPA, Part 325 - Great Lakes Submerged Lands; Part 325 Rules</b>	Mich. Comp. Laws 324.32501 – 32516; Mich. Admin. Code, R. 322.1001-1018	For the purpose of preserve and protect the interest of the general public in the lands and waters of the State, prohibits unauthorized excavation, fill, or modification of Great Lakes waters or bottomlands below or lakeward of the natural ordinary high water mark. Provides process for state leases or conveyances and permits for construction of canals, marinas, permanent structures, and other construction.	Relevant and Appropriate	If remedial actions include any proposed construction of structures in Great Lakes waters or bottomlands or modification of those lands or waters, the requirements of Part 325 and the substantive requirements of the permit conditions are required.
<b>NREPA, Part 323 - Shorelands Protection and Management; Part 323 Rules</b>	Mich. Comp. Laws 324.32301-32315; Mich. Admin. Code, R. 281.21-.26	In the absence of an approved local ordinance, any person or agency must first apply for and obtain a permit from EGLE when proposing to dredge, fill, grade, or otherwise alter the soil, alter the natural drainage, or alter the vegetation on a parcel or property within a designated environmental area boundary.	Relevant and Appropriate	Activities that involve dredging, filling, grading, or other alterations to the soil within an environmental boundary.

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<b>NREPA, Part 365 - Endangered Species Act</b>	Mich. Comp. Laws 324.36501-324.36507	Provides for protection of endangered and threatened species; prohibits taking of listed species.	Relevant and Appropriate	Applies to remedial actions that jeopardize threatened or endangered fish, wildlife, or plant species or destroy or adversely modify critical habitat.
<b>Part 365 Rules</b>	Mich. Admin. Code, R. 299.1021 - 1028	Lists fish, wildlife, and plant species that are endangered or threatened.	Relevant and Appropriate	If endangered or threatened species are known to inhabit the project area, or if they are encountered during the remedial activities, the requirements of Part 365 will apply.
<b>NREPA, Part 413, Invasive Species</b>	Mich. Comp. Laws 324.41301 - 41325	Lists nonnative species that are prohibited or restricted in Michigan; provides authority and procedures for State Natural Resources Commission to add or delete from the list. Provides for a permit for introduction of genetically engineered organisms. Provides penalties for violations.	Applicable	For any proposed or required planting, the requirements of Part 413 will apply to the selection or introduction of plant species. Additionally any remedial actions should not introduce a prohibited species, a restricted species, a genetically engineered or nonnative bird, crustacean, fish, insect, mammal, mollusk, or aquatic plant in this state at any specific location where the organism is not already naturalized, unless otherwise allowed by Part 413.
<b>Michigan Public Act 300 of 1949, as amended. Michigan Vehicle Code</b>	Mich. Comp. Laws 257.716 - 257.750	Statute governs the reduction of maximum axle loads during springtime frost periods and provides for the establishment of rules.	Relevant and Appropriate	Remedial action and construction may require heavy loads of equipment, fill dirt, contaminated media, etc. to be transported over roadways; however, this is not allowed during frost periods.

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<b>Michigan Motor Carrier Safety Code</b>	Mich. Comp. Laws 480.11-25	Establishes rules for transportation of hazardous materials. Used to protect the public, first responders to hazardous incidents and the environment from hazardous materials.	Relevant and Appropriate	Applies to remedies involving transportation on public highways; requirements are ARARs for onsite preparatory and planning activities; for offsite activity, the environmental and safety requirements of the Motor Safety Carrier Act apply generally outside the ARAR context.

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<b>NREPA, Part 31 Floodplain provisions</b>	Mich. Comp. Laws 324.3108	Prohibits occupation of floodplains and activities that interfere with streams unless permitted	Relevant and appropriate	Substantive requirements would apply for response actions involving construction or response actions in floodplains
<b>Floodplain rules</b>	Mich. Admin. Code, R. 323.1311-1329	Establishes requirements for alteration or occupation of floodplains and discharges to surface waters.	Relevant and appropriate	Substantive requirements would apply for response actions involving construction or response actions in floodplains
<b>NREPA, Part 301, Inland Lakes and Streams; Part 301 Rules</b>	Mich. Comp. Laws 324.30101-30113; Mich. Admin. Code R. 281.811-845	Regulates dredging or filling of lake or stream bottoms; obstructing or altering flow; and constructing, placing or removing a structure on bottomlands; establishes mitigation requirements. Applies to natural or artificial lakes, ponds or impoundments, and rivers, streams or creeks as defined in Mich. Comp. Laws 324.30101(h) of NREPA, excluding the Great Lakes, Lake St. Clair, and lakes or ponds with surface area < 5 acres.	Relevant and Appropriate	If remedial actions will impact inland lakes or stream bottoms through activities such as shore protection, seawall/sheet piling, placement of riprap, constructing cofferdams, excavating stream banks, and dredging below the OHWM, for example, then such activities would need to meet the substantive requirements of permits. Relevant when remedial action may involve response actions, i.e., construction, excavation or filling within 500 feet of an inland lake or stream

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<b>Part 303, Wetland Protection; Part 303 Rules</b>	Mich. Comp. Laws 324.30301 – 30329; Mich. Admin Code R281.921-925	Prohibits the construction, operation, or maintenance of any use or development in regulated wetlands [324.30301(d)] without a permit. Prohibited activities include draining, dredging, filling, removing soils or minerals, or maintaining a use without a permit or substantive requirements document within a wetland.	Relevant and Appropriate	Substantive requirements would apply if remedial actions will affect regulated wetlands.
<b>NREPA, Part 365, Endangered Species Act</b>	Mich. Comp. Laws 324.36501-324.36507	Provides for protection of endangered and threatened species; prohibits taking of listed species.	Relevant and Appropriate	Applies to remedial actions that jeopardize threatened or endangered fish, wildlife, or plant species or destroy or adversely modify critical habitat.
<b>Part 365 Rules</b>	Mich. Admin. Code, R. 299.1021 - 1028	Lists fish, wildlife, and plant species that are endangered or threatened.	Relevant and Appropriate	If endangered or threatened species are known to inhabit the project area, or if they are encountered during the remedial activities, the requirements of Part 365 will apply.

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<b>NREPA, Part 323 - Shorelands Protection and Management; Part 323 Rules</b>	Mich. Comp. Laws 324.32301-32315; Mich. Admin. Code, R. 281.21-.26	In the absence of an approved local ordinance, any person or agency must first apply for and obtain a permit from EGLE when proposing to dredge, fill, grade, or otherwise alter the soil, alter the natural drainage, or alter the vegetation on a parcel or property within a designated environmental area boundary.	Relevant and Appropriate	Activities that involve dredging, filling, grading, or other alterations to the soil within an environmental boundary.
<b>NREPA, Part 325 - Great Lakes Submerged Lands; Part 325 Rules</b>	Mich. Comp. Laws 324.32501 – 32516; Mich. Admin. Code, R. 322.1001-1018	For the purpose of preserve and protect the interest of the general public in the lands and waters of the State, prohibits unauthorized excavation, fill, or modification of Great Lakes waters or bottomlands below or lakeward of the natural ordinary high water mark. Provides process for state leases or conveyances and permits for construction of canals, marinas, permanent structures, and other construction.	Relevant and Appropriate	If remedial actions include any proposed construction of structures in Great Lakes waters or bottomlands or modification of those lands or waters, the requirements of Part 325 and the substantive requirements of the permit conditions are required.

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<p><b>MDHHS "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County</b></p>	<p>May 2, 2012. MDCH Issues "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County  <a href="https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html">https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html</a></p>	<p>The Michigan Department of Community Health (now MDHHS) issued a "do not eat" advisory for all fish taken from Clarks Marsh, south of the former Wurtsmith Air Force Base, in Iosco County based on the presence of perfluorinated chemicals (now called PFAS) in fish tissue samples.</p>	<p>TBC (to be considered)</p>	<p>The Do Not Eat Fish advisory for Clarks Marsh is still in place. The fish consumption advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.</p> <p>The Michigan Eat Safe Fish Consumption Guide below details additional requirements for the areas around the Site. Clarks Marsh remains "do not eat" for all species and lengths of fish.</p>

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Michigan Eat Safe Fish Consumption Guide as issued by the Michigan Department of Health and Human Services	MDHHS, 2018. Michigan Eat Safe Fish Consumption Guide for Northeast Michigan <a href="https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf">https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf</a>	MDHHS's Eat Safe Fish Consumption Guides provide fish consumption advice by fish species and fish length. The Eat Safe Fish Guide for Northeast Michigan provides advice for all species of fish, as well as specific advice for various species of fish, and specific advice for specific water bodies. The consumption guidelines are based on data collected and analyzed, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming fish that contain environmental contaminants.	TBC (to be considered)	The Michigan Eat Safe Fish Consumption Guide for Northeast Michigan provides fish consumption advice for AuSable River, Van Etten Creek, Clark's Marsh, Allen Lake, and Van Etten Lake by fish species and fish length. The Eat Safe Fish Guide is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.



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<p><b>Final Health Consultation Guide Regarding PFOS in Fish by the Michigan Department of Health and Human Services</b></p>	<p>MDHHS, 2017. Health Consultation, Perfluorooctane Sulfonate (PFOS) in Fish, Former Wurtsmith Air Force Base  <a href="https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf">https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf</a></p>	<p>The Michigan Department of Health and Human Services (MDHHS) conducted this evaluation for the federal Agency for Toxic Substances and Disease Registry (ATSDR) under a cooperative agreement. ATSDR conducts public health activities (assessments/consultations, advisories, education) at sites of environmental contamination. The purpose of this document is to identify potentially harmful exposures and recommend actions that would minimize those exposures.</p>	<p>TBC (to be considered)</p>	<p>This document discusses the perfluorinated chemical (PFC) contamination at the former Wurtsmith Air Force Base (WAFB) in Oscoda, Michigan, with a focus on perfluorooctane sulfonate (PFOS) levels in fish sampled from nearby waterbodies. The document describes, in brief, the Michigan Department of Health and Human Services (MDHHS) public health hazard determination and resulting emergency Do Not Eat fish consumption advisory due to the elevated PFOS levels in the fish. The document also discusses MDHHS health education outreach actions conducted to-date. Lastly, the document lists conclusions and recommendations to address the continued release of PFCs into the waters surrounding WAFB.</p>

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<p style="text-align: center;"><b>Michigan Department of Health and Human Services Resources' "Do Not Eat" Deer Advisory</b></p>	<p>MDHHS, October 19, 2018. "Do Not Eat" Advisory Issued for Deer Taken within five miles of Clark's Marsh, Oscoda Township.  <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html</a></p>	<p>MDHHS issued a Do Not Eat advisory for deer taken within approximately five miles of Clark's Marsh in Oscoda Township due to high levels of PFOS found in a deer.</p>	<p>TBC (to be considered)</p>	<p>The five-mile radius encircles the Wurtsmith base property and covers what the DNR has estimated to be the expected travel range of deer living in or near the marsh. The area covered by the deer consumption advisory issued can be described as: From Lake Huron west along Aster Street, west on Davison Road, north on Brooks Road, east on Esmond Road, north on Old US 23, north on Wells Road, west on River Road, north on Federal Forest Road 2240, north on Lenard Road, north on Indian Road, and East on E. Kings Corner Road (along the county line) toward Lake to Lake Road, to Lake Huron.</p> <p>The advisory map was updated on September 18, 2019 to identify the advisory with the Public Land Survey System, rather than road names. The advisory includes portions of T24N R08E, T24N R09E, T23N R08E and T23N R09E. The map, including the Section numbers, is available at: <a href="https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf">https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf</a></p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories</p>
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Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
				may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Van Etten Lake Foam Advisory</b>	DHD2, September 1, 2017. "Do Not Eat the Foam" Advisory. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--,00.html</a> (Actual advisory attached at the end of these ARAR tables)	On September 1, 2017, District Health Department #2 issued a "do not eat the foam" advisory for Van Etten Lake cautioning residents against swallowing the foam.	TBC (to be considered)	The foam advisory provides information urging residents to avoid ingesting the foam at Van Etten Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Cedar Lake Foam Advisory</b>	DHD2, June 30, 2020. Residents should avoid foam on Cedar Lake due to PFAS and reminded to continue avoiding foam on Van Etten Lake. <a href="https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf">https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf</a>	Urges residents to avoid foam on both Van Etten Lake and Cedar Lake due to high levels of PFAS.	TBC (to be considered)	The foam advisory provides information urging residents to avoid foam at Van Etten Lake and Cedar Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

State Location-Specific ARARs

STATE ARARs for US AIR FORCE FINAL REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE LOCATION-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
Michigan Department of Health and Human Services Statewide Foam Advisory	MDHHS, July 1, 2020. MDHHS reminds Michiganders to avoid foam on lakes and rivers with high levels of PFAS. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html</a>	Urging people to avoid foam on Michigan lakes and rivers statewide known to have PFAS in the water, including best practices of rinsing off foam and bathing after outdoor activities. Helps individuals distinguish natural foam from PFAS foam.	To Be Considered (TBCs)	The foam advisory provides information urging residents to avoid foam statewide at lakes and rivers known to have PFAS in the water. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

State Location-Specific ARARs

STATE ARARs for US AIR FORCE FINAL REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE LOCATION-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<p><b>Wild Game Advisory as issued by Michigan Department of Health and Human Services</b></p>	<p>DHHS, December 8, 2019. Public Health Advisory for Wildlife from Clark's Marsh.</p> <p><a href="https://www.dhd2.org/wurtsmith-activities">https://www.dhd2.org/wurtsmith-activities</a></p> <p><a href="https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf">https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf</a></p>	<p>Wild Game Advisories apply to various species of game living Clark's Marsh, near the former Wurtsmith Air Force Base. The consumption guidelines are based on testing of game from the area, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming game that contain environmental contaminants.</p>	<p>TBC (to be considered)</p>	<p>The Public Health Advisory for Wildlife provides wild game consumption advice for all resident aquatic and semi-aquatic wildlife taken from Clark's Marsh.</p> <p>The advisory has been posted at Clark's Marsh.</p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories may also be useful as a metric of the effectiveness of the response actions.</p>

## State Chemical-Specific ARARs

<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE CHEMICAL-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>Michigan Natural Resources and Environmental Protection Act (NREPA), Public Act 451, Part 31 - Water Resources Protection</b>	Mich. Comp. Laws 324.3101-3133	Prohibits direct or indirect discharge to waters of the state of a substance that is injurious to public health, safety, welfare; to domestic, commercial, industrial, agricultural, recreational, or other uses of waters of the state; to the value or utility of riparian lands; to livestock, wild animals, birds, fish, aquatic life, or to their growth or propagation; and to the value of fish and game. Establishes rules specifying standards for several water quality parameters. Prohibits discharges unless authorized by a permit.	Applicable	Substantive requirements of an NPDES permit must be attained for any discharge to waters of the state as defined in Part 31. Any remedial action that results in the unacceptable discharge of injurious substances will not attain state ARARs.  It is expected that the interim remedy will involve use of a pump and treat system, which involves discharge of substances to waters of the state. These discharges must comply with Part 31 substantive requirements for the relevant contaminant.
<b>NREPA Part 31 Rules</b>	Michigan Administrative Code (Mich. Admin. Code), R. 323.1041-1117 (Part 4 Rules)	The Part 4 Rules specify water quality standards which shall be met in all waters of the state. The rules require that all designated uses of the receiving water be protected, including indigenous aquatic life and wildlife.	Applicable	These rules prescribe water quality standards for surface water for pollutants, including toxic substances, and drive the need to reduce contaminant loading to surface waters and groundwater, and aquatic life and wildlife. Surface water quality standards may be used to assess surface water quality in the vicinity of the Site and as a means to gauge effectiveness of a remedial action.

## State Chemical-Specific ARARs

<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE CHEMICAL-SPECIFIC ARARs</b>				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 323.1201-1221 (Part 8, Water Quality-Based Effluent Limit Development for Toxic Substances Rules)	In accordance with federal WPCA and CWA, the Part 8 Rules establish chemical-specific water quality-based effluent limits (WQBELs) for point-source discharges.	Applicable	These rules establish water quality standards for pollutants for surface waters.  Part 201 requires that remedial actions comply with Part 31 and its promulgated rules. Criteria are applicable to venting groundwater, storm water, and discharge associated with implementing the remedial action.
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 323.2101-2104, 2136-2140, 2142-2145, 2149, 2152-2155, 2160-2161, 2190 (Part 21, Wastewater Discharge Permit Rules)	The Part 21 Rules establish waste effluent discharge system procedures for the NPDES program.	Relevant and Appropriate	Substantive requirements of state discharge permits (including storm water permits) must be attained for remedial actions taking place on site.
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R.323.2201 - 2240 (Part 22, Groundwater Quality Rules)	The Part 22 Rules establish the process for a groundwater discharge permit program and set groundwater classification and associated water quality standards.	Relevant and Appropriate	Substantive requirements will apply to any remedial alternatives that impact groundwater.

State Chemical-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<b>NREPA, Part 55 - Air Pollution Control</b>	Mich. Comp. Laws 324.5501-5542	Authorizes establishment of standards for ambient air quality and for emissions. Authorizes promulgation of rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property. Establishes permitting authority.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., fumes, gas, mist, odor, equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.
<b>Part 55 Rules</b>	Mich. Admin. Code, R. 336.1101-2823	Establishes rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.



State Chemical-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<b>NREPA, Part 201 - Environmental Remediation</b>	Mich. Comp. Laws 324.20101 - 20142	Part 201 requires appropriate response activity to eliminate unacceptable risks to public health, safety, or welfare, or to the environment from environmental contamination at facilities within the state. Authorizes establishment of generic and site-specific cleanup criteria. Part 201 generic criteria apply to hazardous substances or environmental contaminants to identify exceedances except where site-specific criteria are developed. Part 201 provides for the identification, risk assessment, evaluation, remediation, and long-term management of contaminated sites within the State.	Applicable; Relevant and Appropriate	<p>By statute, the [Wurtsmith AFB] is a "facility" as defined in Part 201. Where Michigan's cleanup standards are more stringent than federal requirements, the substantive requirements of Part 201 are applicable.</p> <p>Michigan sets generic criteria for certain per- and polyfluoroalkyl substances (PFAS), which do not have standards under federal law. The criteria for these substances are applicable.</p> <p>If site-specific cleanup criteria are developed, the statutorily required applicable cancer (1 in 100,000) and noncancer (HI=1) risk levels in Michigan's NREPA at Mich. Comp. Laws 324.20120a and 20120b and the use of best available information can be more protective than federal standards and is relevant and appropriate where it is more protective.</p>
<b>NREPA Part 201 rules</b>	Mich. Admin. Code, R. 299.1-299.50; R 299.51001-51021	Part 201 rules set generic site cleanup criteria for hazardous substances in soil and groundwater.	Applicable	By statute, the Wurtsmith AFB is a "facility" as defined in Part 201. Response activities conducted at the site must meet state-established cleanup criteria where more stringent than federal standards.

State Chemical-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<b>Michigan Safe Drinking Water Act (SDWA), Act 399 of 1976; SDWA Rules</b>	Mich. Comp. Laws 325.1001 – 1023; Mich. Admin. Code, R. 325.10101-12820	The act and rules provide maximum contaminant levels for public water supplies.	Applicable; Relevant and Appropriate	Applicable to contaminant impacts to a public water supply. The MCLs are relevant and appropriate to groundwater cleanup actions intended to protect for drinking water use. The Michigan SDWA has established MCLs for seven PFAS compounds: Perfluorononanoic Acid (PFNA) – 6 ng/L Perfluorooctanoic Acid (PFOA) – 8 ng/L Perfluorooctane Sulfonic Acid (PFOS) – 16 ng/L Perfluorohexane Sulfonic Acid (PFHxS) – 51 ng/L Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) (a GenX compound) – 370 ng/L Perfluorobutane Sulfonic Acid (PFBS) – 420 ng/L Perfluorohexanoic Acid (PFHxA) – 400,000 ng/L

State Chemical-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<p><b>MDHHS "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County</b></p>	<p>May 2, 2012. MDCH Issues "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County  <a href="https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html">https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html</a></p>	<p>The Michigan Department of Community Health (now MDHHS) issued a "do not eat" advisory for all fish taken from Clarks Marsh, south of the former Wurtsmith Air Force Base, in Iosco County based on the presence of perfluorinated chemicals (now called PFAS) in fish tissue samples.</p>	<p>TBC (to be considered)</p>	<p>The Do Not Eat Fish advisory for Clarks Marsh is still in place. The fish consumption advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.</p> <p>The Michigan Eat Safe Fish Consumption Guide below details additional requirements for the areas around the Site. Clarks Marsh remains "do not eat" for all species and lengths of fish.</p>

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STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
Michigan Eat Safe Fish Consumption Guide as issued by the Michigan Department of Health and Human Services	MDHHS, 2018. Michigan Eat Safe Fish Consumption Guide for Northeast Michigan <a href="https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf">https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf</a>	MDHHS's Eat Safe Fish Consumption Guides provide fish consumption advice by fish species and fish length. The Eat Safe Fish Guide for Northeast Michigan provides advice for all species of fish, as well as specific advice for various species of fish, and specific advice for specific water bodies. The consumption guidelines are based on data collected and analyzed, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming fish that contain environmental contaminants.	TBC (to be considered)	The Michigan Eat Safe Fish Consumption Guide for Northeast Michigan provides fish consumption advice for AuSable River, Van Etten Creek, Clark's Marsh, Allen Lake, and Van Etten Lake by fish species and fish length. The Eat Safe Fish Guide is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.

## State Chemical-Specific ARARs

<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE CHEMICAL-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>Final Health Consultation Guide Regarding PFOS in Fish by the Michigan Department of Health and Human Services</b>	MDHHS, 2017. Health Consultation, Perfluorooctane Sulfonate (PFOS) in Fish, Former Wurtsmith Air Force Base <a href="https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf">https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf</a>	The Michigan Department of Health and Human Services (MDHHS) conducted this evaluation for the federal Agency for Toxic Substances and Disease Registry (ATSDR) under a cooperative agreement. ATSDR conducts public health activities (assessments/consultations, advisories, education) at sites of environmental contamination. The purpose of this document is to identify potentially harmful exposures and recommend actions that would minimize those exposures.	TBC (to be considered)	This document discusses the perfluorinated chemical (PFC) contamination at the former Wurtsmith Air Force Base (WAFB) in Oscoda, Michigan, with a focus on perfluorooctane sulfonate (PFOS) levels in fish sampled from nearby waterbodies. The document describes, in brief, the Michigan Department of Health and Human Services (MDHHS) public health hazard determination and resulting emergency Do Not Eat fish consumption advisory due to the elevated PFOS levels in the fish. The document also discusses MDHHS health education outreach actions conducted to-date. Lastly, the document lists conclusions and recommendations to address the continued release of PFCs into the waters surrounding WAFB.

State Chemical-Specific ARARs

<p><b>Michigan Department of Health and Human Services' "Do Not Eat" Deer Advisory</b></p>	<p>MDHHS, October 19, 2018. "Do Not Eat" Advisory Issued for Deer Taken within five miles of Clark's Marsh, Oscoda Township.  <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html</a></p>	<p>MDHHS issued a Do Not Eat advisory for deer taken within approximately five miles of Clark's Marsh in Oscoda Township due to high levels of PFOS found in a deer.</p>	<p>TBC (to be considered)</p>	<p>The five-mile radius encircles the Wurtsmith base property and covers what the DNR has estimated to be the expected travel range of deer living in or near the marsh. The area covered by the deer consumption advisory issued can be described as: From Lake Huron west along Aster Street, west on Davison Road, north on Brooks Road, east on Esmond Road, north on Old US 23, north on Wells Road, west on River Road, north on Federal Forest Road 2240, north on Lenard Road, north on Indian Road, and East on E. Kings Corner Road (along the county line) toward Lake to Lake Road, to Lake Huron.</p> <p>The advisory map was updated on September 18, 2019 to identify the advisory with the Public Land Survey System, rather than road names. The advisory includes portions of T24N R08E, T24N R09E, T23N R08E and T23N R09E. The map, including the Section numbers, is available at: <a href="https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf">https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf</a></p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories</p>
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## State Chemical-Specific ARARs

<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE CHEMICAL-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
				may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Van Etten Lake Foam Advisory</b>	DHD2, September 1, 2017. "Do Not Eat the Foam" Advisory. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--00.html</a> (Actual advisory attached at the end of these ARAR tables)	On September 1, 2017, District Health Department #2 issued a "do not eat the foam" advisory for Van Etten Lake cautioning residents against swallowing the foam.	TBC (to be considered)	The foam advisory provides information urging residents to avoid ingesting the foam at Van Etten Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Cedar Lake Foam Advisory</b>	DHD2, June 30, 2020. Residents should avoid foam on Cedar Lake due to PFAS and reminded to continue avoiding foam on Van Etten Lake. <a href="https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf">https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf</a>	Urges residents to avoid foam on both Van Etten Lake and Cedar Lake due to high levels of PFAS.	TBC (to be considered)	The foam advisory provides information urging residents to avoid foam at Van Etten Lake and Cedar Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

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STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
Michigan Department of Health and Human Services Statewide Foam Advisory	MDHHS, July 1, 2020. MDHHS reminds Michiganders to avoid foam on lakes and rivers with high levels of PFAS. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html</a>	Urging people to avoid foam on Michigan lakes and rivers statewide known to have PFAS in the water, including best practices of rinsing off foam and bathing after outdoor activities. Helps individuals distinguish natural foam from PFAS foam.	To Be Considered (TBCs)	The foam advisory provides information urging residents to avoid foam statewide at lakes and rivers known to have PFAS in the water. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.



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STATE CHEMICAL-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<p><b>Wild Game Advisory as issued by Michigan Department of Health and Human Services</b></p>	<p>DHHS, December 8, 2019. Public Health Advisory for Wildlife from Clark's Marsh.</p> <p><a href="https://www.dhd2.org/wurtsmith-activities">https://www.dhd2.org/wurtsmith-activities</a></p> <p><a href="https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf">https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf</a></p>	<p>Wild Game Advisories apply to various species of game living Clark's Marsh, near the former Wurtsmith Air Force Base. The consumption guidelines are based on testing of game from the area, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming game that contain environmental contaminants.</p>	<p>TBC (to be considered)</p>	<p>The Public Health Advisory for Wildlife provides wild game consumption advice for all resident aquatic and semi-aquatic wildlife taken from Clark's Marsh.</p> <p>The advisory has been posted at Clark's Marsh.</p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories may also be useful as a metric of the effectiveness of the response actions.</p>

State Action-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE ACTION-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<b>NREPA, Part 17 - Michigan Environmental Protection Act</b>	Mich. Comp. Laws 324.1701 - 324.1706	Prohibits the pollution, impairment, or destruction of the State's natural resources or the public trust in those resources.	Applicable	Remedial actions must be conducted in a manner that does not pollute, impair or destroy the State's natural resources.
<b>NREPA, Part 31 - Water Resources Protection</b>	Mich. Comp. Laws 324.3101-3133	Prohibition of discharge waste or waste effluent into surface water without approval of the State and establishment of rules; provisions in 3109b allow for mixing zone for discharge of venting groundwater, 3108 prohibits filling or grading of a floodplain unless permitted by the State, and 3109b defines when Part 31 remedial obligations are met.	Applicable	Remedial actions may involve discharges to waters of the state. Substantive requirements of an NPDES permit must be attained. For any remedial action where waste is left in place, the mixing zone criteria shall not be less protective than for point source discharges. For any remedial alternative meeting the requirements of Part 201, Part 31 requirements are satisfied.

## State Action-Specific ARARs

<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R.323.1041 - 1117 (Part 4 rules, Water Quality Standards); R 323.1171 - 1181; R 323.1201 - 323.1221 (Part 8 rules, Water Quality-Based Effluent Limit Development for Toxic Substances); R 323.1311 - 323.1329 (Part 13 rules, Floodplains and Floodways Rules); R 323.2101- 323.2197 (Part 21 rules, Wastewater Discharge Permits); R 323.2201 2240 (Part 22 rules, Groundwater Quality)	Prohibition of discharge waste or waste effluent into surface water without approval of the State and establishment of rules; Part 4 rules specify standards for all waters of the State, and require that all designated uses of the receiving water be protected, including aquatic life and wildlife. Part 8 rules establish water quality-based effluent limits. Part 13 rules regulate activities to occupy, fill, or grade lands in a floodplain, streambed, or channel of a stream. The Part 22 rules set water quality rules applicable to discharges to groundwater.	Applicable	<p style="text-align: center;">Remedial actions may involve discharges to waters of the state. Substantive requirements of an NPDES permit would need to be met.</p> <p style="text-align: center;">Standards are applicable to venting groundwater, storm water, and discharges associated with the remedial action. Regulates discharges to waters of the State or onto the ground or groundwater if uses are potentially injured.</p>

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<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA Part 31 Rules</b>	Mich. Admin. Code, R. 324.2001 - 324.2009 (Part 5 rules, Spillage of Oil and Pollution Materials)	Set requirements for oil storage and on-land facilities to maintain surveillance and provide adequate protections against loss of pollution materials reaching the waters of the state.	Relevant and appropriate	Substantive requirements may apply. Applies to any temporary or permanent land-based industry, plant, establishment, firm, storage site, or other facility, which receives, processes, manufactures, uses, stores or ships oil or polluting materials and at which there is present an amount of any oil or polluting material equal to or more than its threshold management quantity and which is so situated that loss of polluting materials could directly or indirectly reach the surface or groundwaters of this state, including any facility which discharges through a public sewer system.
<b>NREPA, Part 55 - Air Pollution Control</b>	Mich. Comp. Laws 324.5501-324.5542	Defines air quality standards for potential air emissions sources. Prohibits the emissions of air contaminants in quantities that cause injurious effects to human health, animal life, plant life of significant economic value, and/or property or that interferes with the enjoyment of life or property in the state.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., fumes, gas, mist, odor, equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.

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<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>Part 55 Rules</b>	Mich. Admin. Code, R.336.1101-2823	Establishes rules prohibiting the emission of air contaminants in quantities which cause injurious effects to human health, animal life, plant life or significant economic value, and/or property.	Relevant and Appropriate	Rules apply to remedial alternatives that generate air emissions (e.g., equipment emissions and dust from excavation, soil stabilization, or compaction). Air emissions must comply with substantive requirements of permits and monitoring would be required.
<b>NREPA, Part 91 - Soil Erosion and Sediment Control</b>	Mich. Comp. Laws 324.9101-324.9123a	Establishes rules prescribing soil erosion and sedimentation control plans, procedures, and measures.	Relevant and Appropriate	Applies to actions that results in earth changes where more than one acre of land is affected or the regulated action occurs within 500 feet of a lake or stream. Soil erosion and sedimentation control measures must be implemented and maintained. Substantive requirements of permit, including any local ordinances, must be satisfied.
<b>NREPA Part 91 Rules</b>	Mich. Admin. Code, R. 323.1701-1714	Requirements for owners of land undergoing an earth change. Establishes rules prescribing soil erosion and sedimentation control plans, procedures, and measures.	Relevant and Appropriate	For any remedial action involving an earth change, soil erosion and sedimentation control measures must be implemented and maintained. Substantive requirements of permit, including any local ordinances, must be satisfied

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<b>STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE</b>				
<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA, Part 111- Hazardous Waste Management</b>	Mich. Comp. Laws 324.11105	<p>Establishes requirements for hazardous waste generators, transporters, and treatment/storage/disposal facilities.</p> <p>Michigan is a fully-authorized state for RCRA Subtitle C, therefore Part 111 of the NREPA needs to be identified in the Response Proposal as an ARAR.</p> <p>Administrative Rules define hazardous waste based on analytical procedures, usage, and process of generation</p>	Relevant and Appropriate	<p>Response activities may generate waste material that may be classified as hazardous waste from former base operations. Used for characterizing and identifying hazardous wastes and determining appropriate disposal options.</p> <p>Part 111 identifies cleanup standards under Part 201 to satisfy corrective action obligations. Depending on the remedy chosen, Part 111 may be an ARAR for the generation, transport, treatment, storage, and disposal of hazardous wastes from site remediation.</p> <p>Portions of the regulations may be useful as a means of determining onsite handling and transportation requirements, regardless of whether or not the area of removal qualifies as a TSD facility or a generator of hazardous wastes.</p>
<b>Part 111 Rules</b>	Mich. Admin. Code, R. 299.9101-11107	<p>Establishes requirements for hazardous waste generators, transporters, and treatment/storage/disposal facilities. Includes requirements for use of a manifest system (R 299.9608-9609) to track the type and quantity of hazardous waste received by or shipped from a facility.</p>	Relevant and Appropriate	<p>Response activities may generate waste material that may be classified as hazardous waste from former base operations. Used for characterizing and identifying hazardous wastes and determining appropriate disposal options.</p>

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<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA, Part 115- Solid Waste Management</b>	Mich. Comp. Laws 324 11501-11550	Establishes rules for methods of solid waste disposal and for design/operational standards for disposal areas.	Relevant and Appropriate	If materials generated by remedial activities are "solid waste", substantive requirements of Part 115 for disposal apply to remedial actions involving containment of nonhazardous waste onsite and to remedial actions involving onsite landfilling. Landfills that may be part of the project site and affected by remedial activities must comply with the requirements of Type III landfill standards for final cover and any other relevant closure requirements.
<b>Part 115 Rules</b>	Mich. Admin. Code, R. 299.4101-4922	<p>For onsite disposal facilities: Rules provide specifications for landfill final cover design to minimize erosion and infiltration to protect public health; landfill groundwater monitoring requirements, requirements for hydrogeological monitoring plan, monitoring network, and associated sampling, requirements for final cover materials, and Construction Quality Controls.</p> <p>For offsite disposal: Applies to remedial actions involving containment of nonhazardous waste and arrangements for offsite disposal as part of remedial actions.</p>	<p>If onsite disposal: Relevant and Appropriate</p> <p>If offsite disposal: TBC</p>	<p>If the project site includes landfills regulated under Part 115, the cover design requirements and rule specifications must be met. A design that keeps the final cover from being inundated is capable of limiting erosion and infiltration to the extent necessary to protect human health and the environment. Substantive portions of Construction Quality Control must be met in Remedial Design and Remedial Action.</p> <p>If disposal of non-hazardous waste, including but not limited to disposal of soils and sediments, will occur offsite, the requirements of permits and terms of the applicable county solid waste management plans must be followed.</p>

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<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA, Part 121 - Liquid Industrial Waste</b>	Mich. Comp. Laws 324.12101 - 324.12118	Imposes requirements on generators for storage, documentation, and handling for onsite liquid waste in preparation for transport, for the use of registered haulers, and for the inspection of vehicles and control of the disposal of wastes.	Relevant and Appropriate	Remedial actions may require transportation and disposal of liquid waste, and the Part 121 requirements apply to the storage and transport of those wastes.
<b>NREPA, Part 201 - Environmental Remediation</b>	Mich. Comp. Laws 324.20101 - 20142	Requires that a remedial action shall satisfy cleanup criteria; requirements for owner of facility, such as preventing exacerbation and exercising due care; restrictions on transfer of real property designated as a facility, and requirements that if residential criteria are not met, land use restrictions must be provided. Actions required upon approval of remedial action plans, elements of remedial action plans; required action if contaminated soil is moved off-site or relocated within the site.	Applicable	The remedial action implemented must meet generic or site-specific cleanup criteria; property cannot be transferred without notification of land use restrictions that apply to the site due to contamination. Actions leaving contamination in place must impose institutional controls to restrict activities that may interfere with the integrity of the remedial action and on activities that may result in unacceptable exposure. Substantive requirements of soil relocation provisions (Mich. Comp. Laws 324.20120c) apply to any movement of contaminated soils onsite. If soils are moved offsite, Part 201 applies outside the context of the remedy and any ARARs.
<b>NREPA Part 201 Rules</b>	Mich. Admin. Code, R.299.1-299.50	Cleanup Criteria Requirements for Remedial Actions and Interim Response Activity Designed to Meet Criteria	Applicable	The remedial action implemented must meet generic or site-specific cleanup criteria, applicable to all environmental media and exposure pathways.



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<b>STATE ACTION-SPECIFIC ARARs</b>				
<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA Part 201 Rules</b>	Mich. Admin. Code, R. 299.51001-51021	Responsibilities of owners of facilities; Liable parties must provide notice to the department and adjacent land owners in certain situations, such as if hazardous substances emanate beyond the property boundary.	Relevant and Appropriate	For any property for which the USAF is the current owner, the USAF must comply with Part 201 and its implementing rules' due care requirements.
<b>NREPA, Part 301 - Inland Lakes and Streams</b>	Mich. Comp. Laws 324.30101 - 30113	Lists operations that are prohibited and conditions for operations impacting lakes and streams, including mitigation.	Relevant and Appropriate	For remedial alternatives involving placement of structures, fill, or dredging in a river channel or streambeds, the substantive requirements of these regulations may apply.
<b>Part 301 Rules</b>	Mich. Admin. Code, R.281.811-846	Regulates placement of structures, dredging or filling and other activities that may impact lake or stream bottoms and banks.	Relevant and Appropriate	For remedial alternatives involving placement of structures, fill, or dredging in a river channel or streambeds, the substantive requirements of these regulations may apply.
<b>NREPA, Part 303 - Wetland Protection</b>	Mich. Comp. Laws 324.30301 - 30329	Provides for protection and conservation of wetlands, as defined by state law, including establishing rules regarding wetland uses and prohibitions on future use.	Relevant and Appropriate	For certain remedial alternatives, the substantive requirements of Part 303 may be relevant and appropriate if wetlands located on or adjacent to portions of the Site are disturbed.
<b>Part 303 Rules</b>	Mich. Admin. Code, R.281.921-925, R 281.951-281.961	Provides categories and types of wetlands and corresponding mitigation ratios for impacts to varying types of wetlands, as well as availability of wetland banking	Relevant and Appropriate	Ratios and mitigation requirements may inform decisions about work in wetland areas.

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<b>Michigan Public Act 451, Part 307</b>	Mich. Comp. Laws 324.30701 - 324.30723	Applies to dams affected by a circuit court order establishing the level at which the lake is to be maintained. Provides the process for establishing and maintaining a normal level of an inland lake. Requires approval of department of plans for construction, repairs, or replacement of a dam maintained under Part 307; prohibits changing the established normal lake level except as provided in Part 307.	Relevant and Appropriate	Remedial actions may require work that affects dams or impoundments governed by Part 307 and its requirements, including Van Etten Dam and Foote Dam.

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<b>Michigan Public Act 451, Part 315 - Dam Safety</b>	Mich. Comp. Laws 324. 31501 - 324.31529	Applies to dams over 6' in height and over 5 acres are impounded during the design flood. Provides requirements for dam construction and maintenance to ensure that dams are properly constructed, inspected and maintained, and that the owners have adequately prepared for potential emergencies. Permits are required for the construction, enlargement, repair, alternation, removal, abandonment and reconstruction of state regulated dams. Inspection reports are required every three to five years for state regulated dams based on their hazard potential rating.	Relevant and Appropriate	Where dam evaluation and repair, or dam removal, is proposed or required, the substantive requirements of Part 315 will be relevant and appropriate, including for Van Etten Dam and Foote Dam.
<b>Part 315 Rules</b>	Mich. Admin. Code, R. 281.1301-1313	Sets forth process and required content of permits under Part 315, permit categories, inspection schedules, and penalties for noncompliance.	Relevant and Appropriate.	Where dam evaluation and repair, or dam removal, is proposed or required, the substantive requirements of Part 315 will apply.

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<b>Statute or Regulation</b>	<b>Citation</b>	<b>Description</b>	<b>ARAR/TBC</b>	<b>Rationale</b>
<b>NREPA, Part 365 - Endangered Species Act</b>	Mich. Comp. Laws 324.36501-324.36507	Provides for protection of endangered and threatened species; prohibits taking of listed species.	Relevant and Appropriate	Applies to remedial actions that jeopardize threatened or endangered fish, wildlife, or plant species or destroy or adversely modify critical habitat.
<b>Part 365 Rules</b>	Mich. Admin. Code, R. 299.1021 - 1028	Lists fish, wildlife, and plant species that are endangered or threatened.	Relevant and Appropriate	If endangered or threatened species are known to inhabit the project area, or if they are encountered during the remedial activities, the requirements of Part 365 will apply.
<b>NREPA, Part 413, Invasive Species</b>	Mich. Comp. Laws 324.41301 - 41325	Lists nonnative species that are prohibited or restricted in Michigan; provides authority and procedures for State Natural Resources Commission to add or delete from the list. Provides for a permit for introduction of genetically engineered organisms. Provides penalties for violations.	Applicable	For any proposed or required planting, the requirements of Part 413 will apply to the selection or introduction of plant species. Additionally any remedial actions should not introduce a prohibited species, a restricted species, a genetically engineered or nonnative bird, crustacean, fish, insect, mammal, mollusk, or aquatic plant in this state at any specific location where the organism is not already naturalized, unless otherwise allowed by Part 413.
<b>Michigan Public Act 300 of 1949, as amended. Michigan Vehicle Code</b>	Mich. Comp. Laws 257.716 - 257.750	Statute governs the reduction of maximum axle loads during springtime frost periods and provides for the establishment of rules.	Relevant and Appropriate	Remedial action and construction may require heavy loads of equipment, fill dirt, contaminated media, etc. to be transported over roadways; however, this is not allowed during frost periods.

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<b>Michigan Motor Carrier Safety Code</b>	Mich. Comp. Laws 480.11-25	Establishes rules for transportation of hazardous materials. Used to protect the public, first responders to hazardous incidents and the environment from hazardous materials.	Relevant and Appropriate	Applies to remedies involving transportation on public highways; requirements are ARARs for onsite preparatory and planning activities; for offsite activity, the environmental and safety requirements of the Motor Safety Carrier Act apply generally outside the ARAR context.

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<b>NREPA, Part 31 Floodplain provisions</b>	Mich. Comp. Laws 324.3108	Prohibits occupation of floodplains and activities that interfere with streams unless permitted	Relevant and appropriate	Substantive requirements would apply for response actions involving construction or response actions in floodplains
<b>Floodplain rules</b>	Mich. Admin. Code, R. 323.1311-1329	Establishes requirements for alteration or occupation of floodplains and discharges to surface waters.	Relevant and appropriate	Substantive requirements would apply for response actions involving construction or response actions in floodplains
<b>NREPA, Part 301, Inland Lakes and Streams; Part 301 Rules</b>	Mich. Comp. Laws 324.30101-30113; Mich. Admin. Code R. 281.811-845	Regulates dredging or filling of lake or stream bottoms; obstructing or altering flow; and constructing, placing or removing a structure on bottomlands; establishes mitigation requirements. Applies to natural or artificial lakes, ponds or impoundments, and rivers, streams or creeks as defined in Mich. Comp. Laws 324.30101(h) of NREPA, excluding the Great Lakes, Lake St. Clair, and lakes or ponds with surface area < 5 acres.	Relevant and Appropriate	If remedial actions will impact inland lakes or stream bottoms through activities such as shore protection, seawall/sheet piling, placement of riprap, constructing cofferdams, excavating stream banks, and dredging below the OHWM, for example, then such activities would need to meet the substantive requirements of permits. Relevant when remedial action may involve response actions, i.e., construction, excavation or filling within 500 feet of an inland lake or stream

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<b>Part 303, Wetland Protection; Part 303 Rules</b>	Mich. Comp. Laws 324.30301 – 30329; Mich. Admin Code R281.921-925	Prohibits the construction, operation, or maintenance of any use or development in regulated wetlands [324.30301(d)] without a permit. Prohibited activities include draining, dredging, filling, removing soils or minerals, or maintaining a use without a permit or substantive requirements document within a wetland.	Relevant and Appropriate	Substantive requirements would apply if remedial actions will affect regulated wetlands.
<b>NREPA, Part 365, Endangered Species Act</b>	Mich. Comp. Laws 324.36501-324.36507	Provides for protection of endangered and threatened species; prohibits taking of listed species.	Relevant and Appropriate	Applies to remedial actions that jeopardize threatened or endangered fish, wildlife, or plant species or destroy or adversely modify critical habitat.
<b>Part 365 Rules</b>	Mich. Admin. Code, R. 299.1021 - 1028	Lists fish, wildlife, and plant species that are endangered or threatened.	Relevant and Appropriate	If endangered or threatened species are known to inhabit the project area, or if they are encountered during the remedial activities, the requirements of Part 365 will apply.

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<p><b>MDHHS "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County</b></p>	<p>May 2, 2012. MDCH Issues "Do Not Eat" Fish Advisory for Clarks Marsh in Iosco County  <a href="https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html">https://www.michigan.gov/mdhhs/0,5885,7-339-73970_71692_8347-277156--,00.html</a></p>	<p>The Michigan Department of Community Health (now MDHHS) issued a "do not eat" advisory for all fish taken from Clarks Marsh, south of the former Wurtsmith Air Force Base, in Iosco County based on the presence of perfluorinated chemicals (now called PFAS) in fish tissue samples.</p>	<p>TBC (to be considered)</p>	<p>The Do Not Eat Fish advisory for Clarks Marsh is still in place. The fish consumption advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.</p> <p>The Michigan Eat Safe Fish Consumption Guide below details additional requirements for the areas around the Site. Clarks Marsh remains "do not eat" for all species and lengths of fish.</p>



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Michigan Eat Safe Fish Consumption Guide as issued by the Michigan Department of Health and Human Services	MDHHS, 2018. Michigan Eat Safe Fish Consumption Guide for Northeast Michigan <a href="https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf">https://www.michigan.gov/documents/mdch/MDCH_EAT_SAFE_FISH_GUIDE_-_NORTHEAST_MI_WEB_45535_5_7.pdf</a>	MDHHS's Eat Safe Fish Consumption Guides provide fish consumption advice by fish species and fish length. The Eat Safe Fish Guide for Northeast Michigan provides advice for all species of fish, as well as specific advice for various species of fish, and specific advice for specific water bodies. The consumption guidelines are based on data collected and analyzed, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming fish that contain environmental contaminants.	TBC (to be considered)	The Michigan Eat Safe Fish Consumption Guide for Northeast Michigan provides fish consumption advice for AuSable River, Van Etten Creek, Clark's Marsh, Allen Lake, and Van Etten Lake by fish species and fish length. The Eat Safe Fish Guide is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify restrictions on fish consumption and other impairments as limitations that must be eliminated, and mandates their consideration in the development of cleanup criteria for surface water and surface water sediments. Mich Admin Code, R. 299.30. The existence of fish consumption advisories may also be useful as a metric of the effectiveness of the response actions in the future.

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<p><b>Final Health Consultation Guide Regarding PFOS in Fish by the Michigan Department of Health and Human Services</b></p>	<p>MDHHS, 2017. Health Consultation, Perfluorooctane Sulfonate (PFOS) in Fish, Former Wurtsmith Air Force Base  <a href="https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf">https://www.michigan.gov/documents/mdhhs/WAFB_Fish_HC_Final_2-14-2017_552188_7.pdf</a></p>	<p>The Michigan Department of Health and Human Services (MDHHS) conducted this evaluation for the federal Agency for Toxic Substances and Disease Registry (ATSDR) under a cooperative agreement. ATSDR conducts public health activities (assessments/consultations, advisories, education) at sites of environmental contamination. The purpose of this document is to identify potentially harmful exposures and recommend actions that would minimize those exposures.</p>	<p>TBC (to be considered)</p>	<p>This document discusses the perfluorinated chemical (PFC) contamination at the former Wurtsmith Air Force Base (WAFB) in Oscoda, Michigan, with a focus on perfluorooctane sulfonate (PFOS) levels in fish sampled from nearby waterbodies. The document describes, in brief, the Michigan Department of Health and Human Services (MDHHS) public health hazard determination and resulting emergency Do Not Eat fish consumption advisory due to the elevated PFOS levels in the fish. The document also discusses MDHHS health education outreach actions conducted to-date. Lastly, the document lists conclusions and recommendations to address the continued release of PFCs into the waters surrounding WAFB.</p>

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<p style="text-align: center;"><b>Michigan Department of Health and Human Services Resources' "Do Not Eat" Deer Advisory</b></p>	<p>MDHHS, October 19, 2018. "Do Not Eat" Advisory Issued for Deer Taken within five miles of Clark's Marsh, Oscoda Township.  <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-481207--,00.html</a></p>	<p>MDHHS issued a Do Not Eat advisory for deer taken within approximately five miles of Clark's Marsh in Oscoda Township due to high levels of PFOS found in a deer.</p>	<p>TBC (to be considered)</p>	<p>The five-mile radius encircles the Wurtsmith base property and covers what the DNR has estimated to be the expected travel range of deer living in or near the marsh. The area covered by the deer consumption advisory issued can be described as: From Lake Huron west along Aster Street, west on Davison Road, north on Brooks Road, east on Esmond Road, north on Old US 23, north on Wells Road, west on River Road, north on Federal Forest Road 2240, north on Lenard Road, north on Indian Road, and East on E. Kings Corner Road (along the county line) toward Lake to Lake Road, to Lake Huron.</p> <p>The advisory map was updated on September 18, 2019 to identify the advisory with the Public Land Survey System, rather than road names. The advisory includes portions of T24N R08E, T24N R09E, T23N R08E and T23N R09E. The map, including the Section numbers, is available at: <a href="https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf">https://www.michigan.gov/documents/pfasresponse/Advisory_AreaLR_636449_7.pdf</a></p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories</p>
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				may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Van Etten Lake Foam Advisory</b>	DHD2, September 1, 2017. "Do Not Eat the Foam" Advisory. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86511_82704_83952-512946--,00.html</a> (Actual advisory attached at the end of these ARAR tables)	On September 1, 2017, District Health Department #2 issued a "do not eat the foam" advisory for Van Etten Lake cautioning residents against swallowing the foam.	TBC (to be considered)	The foam advisory provides information urging residents to avoid ingesting the foam at Van Etten Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.
<b>District Health Department No. 2 Cedar Lake Foam Advisory</b>	DHD2, June 30, 2020. Residents should avoid foam on Cedar Lake due to PFAS and reminded to continue avoiding foam on Van Etten Lake. <a href="https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf">https://www.dhd2.org/wp-content/uploads/2020/06/2020-6-30-VEL-and-Cedar-Lake-foam.pdf</a>	Urges residents to avoid foam on both Van Etten Lake and Cedar Lake due to high levels of PFAS.	TBC (to be considered)	The foam advisory provides information urging residents to avoid foam at Van Etten Lake and Cedar Lake. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

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STATE LOCATION-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
Michigan Department of Health and Human Services Statewide Foam Advisory	MDHHS, July 1, 2020. MDHHS reminds Michiganders to avoid foam on lakes and rivers with high levels of PFAS. <a href="https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html">https://www.michigan.gov/pfasresponse/0,9038,7-365-86513_96296-533419--,00.html</a>	Urging people to avoid foam on Michigan lakes and rivers statewide known to have PFAS in the water, including best practices of rinsing off foam and bathing after outdoor activities. Helps individuals distinguish natural foam from PFAS foam.	To Be Considered (TBCs)	The foam advisory provides information urging residents to avoid foam statewide at lakes and rivers known to have PFAS in the water. The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of foam advisories may also be useful as a metric of the effectiveness of the response actions.

State Location-Specific ARARs

STATE ARARs for US AIR FORCE INTERIM REMEDIAL ACTIONS AT WURTSMITH AIR FORCE BASE				
STATE LOCATION-SPECIFIC ARARs				
Statute or Regulation	Citation	Description	ARAR/TBC	Rationale
<p><b>Wild Game Advisory as issued by Michigan Department of Health and Human Services</b></p>	<p>DHHS, December 8, 2019. Public Health Advisory for Wildlife from Clark's Marsh.</p> <p><a href="https://www.dhd2.org/wurtsmith-activities">https://www.dhd2.org/wurtsmith-activities</a></p> <p><a href="https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf">https://www.dhd2.org/wp-content/uploads/2019/12/APPROVED-Clarks-Marsh-Memo_Do-Not-Eat-Wildlife.pdf</a></p>	<p>Wild Game Advisories apply to various species of game living Clark's Marsh, near the former Wurtsmith Air Force Base. The consumption guidelines are based on testing of game from the area, and provide the public with the information needed to make decisions to protect themselves and their families from the health risks of consuming game that contain environmental contaminants.</p>	<p>TBC (to be considered)</p>	<p>The Public Health Advisory for Wildlife provides wild game consumption advice for all resident aquatic and semi-aquatic wildlife taken from Clark's Marsh.</p> <p>The advisory has been posted at Clark's Marsh.</p> <p>The advisory is not a regulatory requirement and is not enforced by legal authority; however, Michigan's administrative rules identify risks to the public health, safety, and welfare and the environment, including food chain contamination, and mandates their consideration in the development of cleanup criteria for contaminated environmental media. Mich Admin Code R. 299.28. The existence of wild game advisories may also be useful as a metric of the effectiveness of the response actions.</p>



## DISTRICT HEALTH DEPARTMENT NO. 2

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### MEDIA RELEASE

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For Immediate Release

Date: September 1, 2017

Contact: Tracey Wood

Out of an abundance of caution going into the holiday weekend, District Health Department No. 2, and the Michigan Departments of Health and Human Services (MDHHS) and Environmental Quality (DEQ) are recommending that visitors to Van Etten Lake avoid ingesting foam that may occur at beaches or on the shorelines.

Skin contact with the foam is not considered to be of concern. Previous testing of the foam from Van Etten Lake did not show polyfluoroalkly substance (PFAS) levels that would be expected to harm human health. As a result of additional testing of foam, higher levels of PFAS have been found which require additional testing and analysis.

For more information about shoreline foam, please [see this report from the Michigan Department of Environmental Quality](#) or visit the MDEQ website at [www.michigan.gov/deq](http://www.michigan.gov/deq). Residents with questions or concerns may call MDHHS at 1-800-648-6942.