



GRETCHEN WHITMER  
GOVERNOR

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

LANSING



LIESL EICHLER CLARK  
DIRECTOR

July 7, 2020

Ms. Kay M. Grosinke  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JSBA Lackland, Texas 78236-9821

Dear Ms. Grosinke:

**SUBJECT:** Final Second Five-Year Review (FYR) for the Escanaba Former Defense Fuel Supply Point (DFSP Escanaba), OT-13 (Report), Escanaba, Michigan.

Thank you for your April 8, 2020, letter to Mr. Robert Delaney, Michigan Environment, Great Lakes, and Energy (EGLE) regarding EGLE's October 10, 2019 comment letter on the Draft FYR Report. We appreciate the revisions to the report that were made in response to our comments.

In the Air Force's letter, the Air Force Civil Engineer Center (AFCEC) states that, "*The Five-Year Review Report provides evaluation of the effectiveness of the remedy for wood tar and petroleum (historic) contaminants on the DFSP site. Since characterization of PFOS/PFOA is not complete and a remedy has not been determined for impacted media, the Five-Year Review does not include a PFOS/PFOA-related remedy evaluation.*" Also, AFCEC further states that, "*The final version of the attached Second Five-Year Review report has addressed EGLE's comments provided in the October 10, 2019 correspondence and August 16, 2019 memo and AFCEC considers the current report as final.*"

The Air Force's position with regard to the protectiveness of the remedy and the presence of perfluoroalkyl and polyfluoroalkyl substances (PFAS) is in error. The EGLE comments related to PFAS and protectiveness dated August 16, 2019 (attached), September 6, 2019 (attached) and October 10, 2019 letter (attached) were not satisfactorily addressed by the Air Force. The Air Force did not address the laws, regulations, and guidance, previously cited by EGLE. As such, the Air Force presents an inaccurate protectiveness analysis. We are concerned that this inaccuracy may lead to unacceptable human exposures that may otherwise not occur.

It appears this inaccurate protectiveness analysis may have led the Air Force to propose no additional investigation work in the next two years as documented in the Joint Execution Plan for the DFSP Escanaba in the 2020-2022 Defense and State Memorandum of Agreement (DSMOA) cooperative agreement between the State of Michigan and the Department of Defense. Air Force states in the FYR that they will eventually perform an investigation but provides no time schedule).

Relating to emerging contaminants, such as PFAS, the Air Force has not followed standard Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) guidance in conducting this FYR. The United States Environmental Protection Agency (U.S. EPA) guidance<sup>1</sup> on CERCLA FYRs clearly indicates a need to address new contaminants of concern during the review and in assessing protectiveness. Additional U.S. EPA guidance<sup>2</sup> on protectiveness determinations on FYRs clearly addresses emerging contaminants suggesting that a determination of protectiveness be deferred if an emerging contaminant is present and the current risk has not been evaluated or the remedy be determined to not be protective if it is reasonably likely to assume that unacceptable exposures are occurring. Clearly, based on the emerging contaminant issue, the protectiveness statement of “currently protective” is incorrect. We are concerned that the general public, in reviewing this report, will get a mischaracterization of the potential risks posed by the site which may lead to unnecessary human exposures to site contamination.

EGLE on behalf of the State of Michigan, does not concur that the FYR has been done correctly, and does not concur that the current remedy is protective of human health, and the environment.

If you have additional questions concerning this matter, please contact me at 517-388-7037; DelaneyR@michigan.gov; or EGLE, DSMOA Coordinator, Remediation and Redevelopment Division, P.O. Box 30426, Lansing, Michigan 48909-7926

Sincerely,



Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division

Enclosures:

cc: Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Mr. John Bradley, EGLE  
Mr. Dennis Bush, EGLE  
Mr. Tom Asmus, EGLE  
Ms. Beth Mead-O'Brien, EGLE  
Mr. Dan Yordanich, EGLE  
Mr. Puneet Vij, Michigan Department of Health and Human Services

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<sup>1</sup> Comprehensive Five-Year Review Guidance, EPA 540-R-01-007, June 2001

<sup>2</sup> Clarifying the Use of Protectiveness Determinations for Comprehensive Environmental Response, Compensation, and Liability Act Five-Year Reviews, OSWER 9200.2-111, September 13, 2012.



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STATE OF MICHIGAN  
DEPARTMENT OF  
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LIESL EICHLER CLARK  
DIRECTOR

September 6, 2019

Ms. Kay M. Grosinke  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JBSA Lackland, Texas 78236-9821

**SUBJECT:** Response to Michigan Environment, Great Lakes, and Energy Comments on Review of Response Activity Plan, Five-Year Review Work Plan, Former Defense Fuel Supply Point, Escanaba, Michigan.

Dear Ms. Grosinke:

Thank you for your May 16, 2019 letter (enclosed) to Mr. Robert Delaney regarding the "Response to Michigan Environment, Great Lakes, and Energy (EGLE) Comments on Review of Response Activity Plan, Five-Year Review (FYR) Work Plan, Former Defense Fuel Supply Point (DFSP), Escanaba, Michigan." EGLE Staff has reviewed the Air Force's responses to EGLE's initial February 7, 2019 review letter (enclosed) and has the following comments.

### Comment 1

**Air Force's comment, May 16 letter:** The FYR Work Plan provides plans for the FYR evaluation of the effectiveness of the remedy for wood tar and petroleum (historic) contaminants on the DFSP site. Since characterization of perfluorooctanesulfonic acid/perfluorooctanoic (PFOS)/(PFOA) is not complete and a remedy has not been determined for impacted media, the FYR does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that were addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).

**EGLE's response:** Under the provisions of CERCLA<sup>1</sup>, FYR reviews have only one purpose and that is to ensure that an existing remedy is protective of human health and the environment. Section 121(c) of CERCLA states in part:

*"REVIEW-If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each 5 years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. ..."*

The Air Force's position appears to be that the FYR does not have to address newly discovered contaminants or pollutants at a site. This position is contrary to long standing precedent at the Department of Defense (DoD) sites and other sites being addressed under

<sup>1</sup> The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9601-9675)  
CONSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30473 • LANSING, MICHIGAN 48909-7973  
Michigan.gov/EGLE • 800-662-9278

CERCLA. Also, such a position is contrary to and conflicts with the requirements of law, directives, and guidance, as follows:

1. The National Contingency Plan<sup>2</sup> (NCP)
  - a. § 300.430(f)(4)(ii) states:

*“If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action.”*

- b. § 300.430(f)(1)(ii)(B)(1) states:

*“Requirements that are promulgated or modified after ROD signature must be attained (or waived) only when determined to be applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment.”*

The Air Force is required to follow CERCLA in the same manner as other entities unless they formally waive a requirement. The Air Force is required to perform a FYR as at other CERCLA regulated sites. The NCP states that not only CERCLA defined hazardous substances found at the site must be evaluated against the protectiveness standard, but also contaminants and pollutants that are discovered at a site. PFOS and PFOA are pollutants or contaminants under CERCLA definitions of those terms. The DoD has acknowledged this by multiple time critical and interim actions at sites across the nation that have been contaminated with PFOS and PFOA. Other per- and polyfluoroalkyl substances (PFAS) would also fit the definition of contaminant or pollutant under CERCLA and must be similarly recognized by the Air Force.

Under the NCP any new requirements that are promulgated or modified after the record of decision (ROD) signatures must be attained when they are determined to be applicable or relevant and appropriate and necessary to ensure that the remedies are protective of human health and the environment. Under the provisions of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, and the rules promulgated thereunder, EGLE has formally established (applicable) clean-up criteria for PFOA and PFOS for groundwater and the groundwater/surface water interface (GSI). The established clean-up criteria are applicable or relevant and appropriate requirements (ARARs) to be considered for the DFSP Escanaba remedial actions carried out by the Air Force and the subject of this FYR Work Plan.

EGLE finds that the same groundwater media and same physical locations as the remedies for wood tar and petroleum are also impacted by PFOS, PFOA, and other PFAS. It is clear from data previously collected at the site that PFOS and PFOA are present at the site at concentrations well above applicable health-based Part 201 criteria and co-mingled with the other contaminants mentioned.

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<sup>2</sup> National Oil and Hazardous Substance Pollution Contingency Plan (40 CFR § 300.1 *et seq.*)

EGLE also asserts that the Air Force has been notified in a timely manner of the applicable Part 201 criteria for PFOS and PFOA.

2. Defense Environmental Restoration Program<sup>3</sup> (DERP)

a. § 2701(b)(1) and (2) states:

*“(b) Program Goals—Goals of the program shall include the following:*

*(1) The identification, investigation, research and development, and cleanup of contamination from a hazardous substance or pollutant or contaminant.*

*(2) Correction of other environmental damage (such as detection and disposal of unexploded ordinance) which creates an imminent and substantial endangerment to the public health or welfare or the environment.”*

b. § 2701(c)(1)(A) and (B) states:

*“(c) Responsibility for Response Actions:*

*(1) Basic Responsibility—The Secretary shall carry out (in accordance with the provisions of this chapter and CERCLA) all response actions with respect to releases of hazardous substances from each of the following:*

*(A) Each facility or site owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary.*

*(B) Each facility or site which was under the jurisdiction of the Secretary and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances.”*

DERP clearly states that the Air Force must address not only CERCLA defined hazardous substances, but must also address contaminants or pollutants, such as PFOS and PFOA (and likely other PFAS) that are present at the DFSP facility. Since DFSP Escanaba has ROD's issued under CERCLA, it is well documented that CERCLA defined hazardous substances have been released into the environment. Thus, in accordance with CERCLA, Applicable or Relevant and Appropriate Requirements (ARARs) for contaminants or pollutants must be considered and addressed in the protectiveness analysis at the FYR as a required activity under CERCLA.

3. DERP Manual<sup>4</sup>

Item 4 of the DERP Manual states in part:

*“4. POLICY. It is DoD policy in accordance with Reference (c) that the DoD shall:*

*a. Identify, evaluate and, where appropriate, remediate contamination resulting from DoD activities.*

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<sup>3</sup> Environmental Restoration (10 U.S.C. § 2700 – 2710)

<sup>4</sup> Defense Environmental Restoration Program Manual, updated August 31, 2018

- b. Ensure immediate action to remove imminent threats to human health and the environment.*
- c. Comply with applicable statutes, regulations, Executive orders, and other legal requirements governing response actions to address contamination.*
- d. Execute an environmental restoration program, known as DERP, at facilities under the jurisdiction of the Secretary of Defense pursuant to section 2701(a)(1) of title 10, United States Code (U.S.C.) (Reference (n)). ...”*

As quoted above, the DERP Manual clearly identifies DoD’s policy to remediate contamination caused by DoD activities. The FYR process is specifically designed to evaluate if a remedy can still be considered protective after five years of implementation by accounting for new information, such as new data and new requirements. A significant policy of the DoD (as the DERP Manual is guidance to DoD staff) is to ensure that any imminent threat to human health and the environment is addressed. Disregarding new information and new or modified ARARs that are risk-based in the FYR, averts any analysis of imminent and substantial endangerment, the need for additional remedial investigation/feasibility study (RI/FS), and/or the need to modify the ROD in an appropriate manner. Failure of the Air Force to perform a complete protectiveness analysis as a component of the FYR is contrary to the intent of DoD policy and the laws referenced above.

#### 4. DoD Memorandum<sup>5</sup>

The procedures in this memorandum were “*effective immediately*,” and are stated in part as follows:

*“b. Conducting FYR*

*(3) During the FYR, the DoD Component will evaluate the effect of any newly promulgated or modified ARARs that are based on protection of human health and the environment, and changes in toxicity values or exposure assumptions affecting the protectiveness of the remedy originally selected in the DD, in accordance with subpart 300.430(f)(1)(ii)(B)(1) of the NCP. ...*

*(8) If the FYR determines that a remedy is no longer protective based on the criteria in Reference (bj), the FYR report shall include recommendations concerning the steps necessary to achieve protectiveness.*

*(9) If the FYR identifies a need to consider a significant change in a remedy, the DoD Component shall prepare further documentation, such as an Explanation of Significant Difference or ROD amendment, consistent with subpart 300.435 of the NCP. These activities should be accomplished separately and in no way delay completing the report within the required timeframe.”*

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<sup>5</sup> Memorandum for Deputy Assistant Secretary of the Army, et al. Subject: Five-year Review Procedures – Update to DoD Manual 4715.20, “Defense Environmental Restoration Program Management,” March 9, 2012 (dated June 22, 2014)

In the memorandum regarding the FYR process, DoD leadership further expounded the requirements that DoD staff are to follow. The memorandum cites the same section of the NCP that EGLE referenced above, and DoD staff are further instructed to review newly promulgated or modified ARARs. Part 201 criteria, as ARARs, have been recognized at this site (as at other CERCLA sites in Michigan) by both the Environmental Protection Agency (EPA) and DoD.

The Air Force stated in their May 16, 2019 letter that, "... The Department of Defense determined that Part 201 GSI is not applicable." EGLE invites DoD to submit its legal analysis that forms the basis of this DoD determination for EGLE's review.

#### 5. Air Force Instruction<sup>6</sup>

This instruction indicates that "*compliance with this publication is mandatory*" and states the following with respect to FYRs:

*"16.4.8. Use OSWER Directive 9355.7-03B-P, Comprehensive Five-Year Review Guidance, June 2001, as a guide for meeting the statutory requirements of conducting Five-Year Reviews, Five-Year Reviews and EPA's Summary Form, November 2011, for a Five-Year Review template.*

*18.3.1. During the Five-Year Review, it is appropriate to examine whether a change in a contaminant's risk information or new information about exposure pathways, such as vapor intrusion, warrants further investigation at the site. Five-Year Reviews are discussed in paragraph 16.4.*

*18.3.2. Under CERCLA, if an EC<sup>7</sup> and appropriate exposure pathways were evaluated in a completed health risk assessment approved by the lead regulatory agency (typically as part of an RI/FS), and there is a completed DD for the site, then the risk assessment or the DD shall be reopened or revised only IAW 40 CFR 300.430(f)(1)(ii)(B)(1) for changed ARARs. For ECs for which cleanup levels were originally risk-based, remedies specified in the DD will be reopened only when the original risk-based cleanup level is no longer protective.*

*18.3.3. For ECs with new toxicity levels or health standards and that were not evaluated in a risk assessment or a DD, the appropriate AFCEC/CZ division(s) or NGB/A7O, as applicable, in coordination with AFCEC/CZT, or AFCEC/CIB shall evaluate the risk and recommend appropriate follow-up action consistent with applicable legal requirements and this Instruction. (T-0)."*

The original RI/FS and ROD did not address the presence or toxicity of PFOS and PFOA and other PFAS at the DFSP site. The Air Force Instruction states that new emerging contaminants (ECs) are to be evaluated during the FYR. As previously stated, it is the

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<sup>6</sup> Air Force Instruction 32-7020, Certified Current 18 April 2016

<sup>7</sup> Emerging contaminant(s)

long-standing practice, based upon the interpretation of CERCLA and the NCP, that the protectiveness analysis of the newly discovered contaminants or pollutants (discovered after the ROD) is to be included in the FYR.

## **Comment 2**

**Air Force's comment, May 16 letter:** EGLE's correspondence appears to pertain to PFOS/PFOA contamination. The FYR Work Plan contains no discussion of PFOS/PFOA. The FYR Report includes a short summary of the PFOS/PFOA investigation performed by AFCEC from 2015 to 2018 for informational purposes. The text in Section A has been refined to further clarify that PFOS/PFOA are not part of the FYR Work Plan.

**EGLE's response:** The Air Force is correct in that EGLE's correspondence specifically related to the fact that the Air Force did not disclose on Form EQP4028, Request for Review, the presence of surface water contaminated with PFAS that the Air Force discovered during the site inspection of the DFSP Escanaba site. EGLE staff would like to clarify that a protectiveness analysis of the remedy using all the data and ARARs is required under the above referenced laws and DoD's written guidance.

## **Comment 3**

**EGLE Comment, February 7, 2019 letter:** Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, GSI interface criteria for Perfluoroalkyl sulfonate. Also, sediments have been impacted as a site-specific risk assessment for PFAS impacted sediments may be required. See the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report for Aqueous Film Forming Foam Areas, Former DFSP, Escanaba, Michigan Site Inspection.

**Air Force's Response, May 16 letter:** Clarification. It is inappropriate to include PFOS/PFOA in Section E because they are not part of the protectiveness determination of the remedy implemented in the IRAP 2007.

**EGLE's Response:** The question on Section E of the form is "Are/were the following present at the facility?" In relation to PFAS, based on the data provided by the Air Force, there are impacts to groundwater and surface water associated with this facility and the boxes should be checked accordingly.

## **Comment 4**

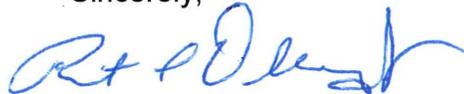
**EGLE's Comment, February 7, 2019 letter:** Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the Air Force's awareness of Part 201, GSI criteria prior to the submission of the Request.

**Air Force's Response, May 16, letter:** Clarification. Although the Human Drinking Water Value (HDV) values for PFOS/PFOA were used in the June 2018 Final Site Inspection Report strictly as screening levels for surface water body samples and source area groundwater samples, the report was finalized before the DoD determined that Part 201 GSI is not applicable.

**EGLE's Response:** EGLE's position is that the groundwater and GSI criteria for PFOS and PFOA that are established under Part 201 and its promulgated rules are ARARs. The presence of PFOS and PFOA must also be evaluated during the FYR of the protectiveness of the remedy originally selected.

If you need further information or assistance, please contact me, at 517-388-7037; delaneyr@michigan.gov; DSMOA Coordinator, Remediation and Redevelopment Division; or EGLE P.O. Box 30473, Lansing, Michigan 48909-7973.

Sincerely,



Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division  
517-388-7037

Enclosures:

cc: Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Ms. Kathy Shirey, EGLE  
Mr. John Bradley, EGLE



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



LIESL EICHLER CLARK  
DIRECTOR

February 7, 2019

Ms. Kay M. Grosinske  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JBSA Lackland, Texas 78236-9821

SUBJECT: Request for Michigan Department of Environmental Quality (MDEQ)  
Review of Response Activity Plan, for the Former Defense Fuel Supply  
Point (DFSP), Escanaba, Michigan, Delta County

Dear Ms. Grosinske:

Thank you for submitting the United States Air Force's (USAF's) January 8, 2019, "Request for DEQ Review of Response Activity Plan" for the Five-Year Review Work Plan for the Former DFSP Escanaba Site (Request) (enclosure).

The form is well prepared; however, it is not complete.

1. Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, groundwater/surface water (GSI) interface criteria for perfluoroalkyl sulfonate. Also, sediments have been impacted and a site-specific risk assessment for per- and polyfluoroalkyl impacted sediments may be required. Please see the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report for Aqueous Film Forming Foam Areas, Former Defense Fuel Supply Point, Escanaba, Michigan Site Inspection.
2. Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the USAF's awareness of Part 201, GSI criteria prior to the submission of the Request.
3. Please check the box for "Impact to Surface Water" in Section E of the Request for MDEQ Review of Response Activity Plan and resubmit the form.

If you need further information or assistance, please contact me, at 517-388-7037, [delaneyR@michigan.gov](mailto:delaneyR@michigan.gov); or Mr. John Bradley, Geology and Defense Site Management

Unit, Remediation and Redevelopment Division, at 517-512-5017;  
bradleyj1@michigan.gov; or MDEQ, P.O. Box 30473, Lansing, Michigan 78909-7973.

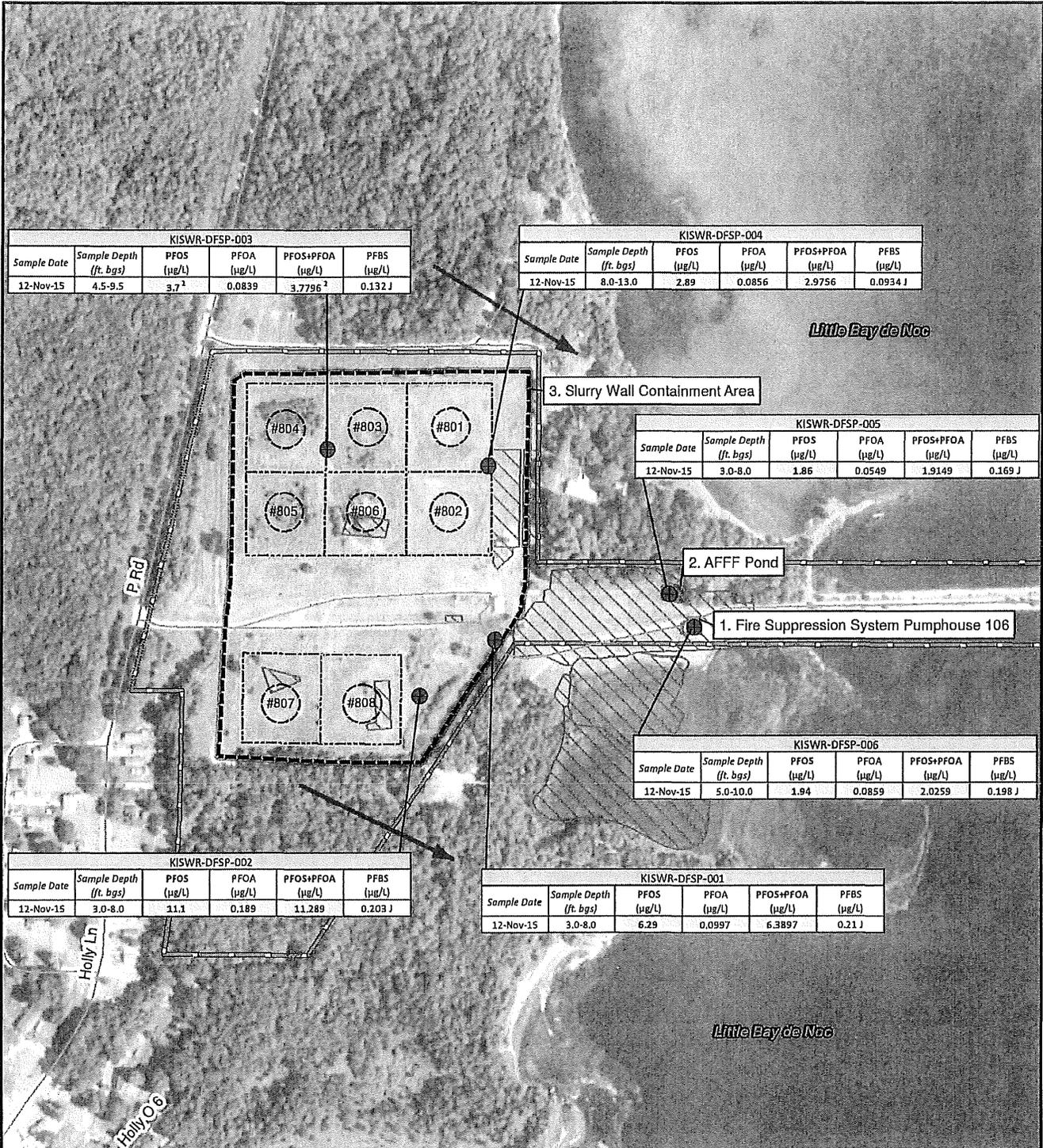
Sincerely,

A handwritten signature in black ink, appearing to read "Robert Delaney". The signature is fluid and cursive, with the first name "Robert" and last name "Delaney" clearly distinguishable.

Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division  
517-388-7037

Enclosures:

Cc: Dr. Steven Termaath, USAF  
Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Ms. Susan Leeming, MDEQ  
Mr. John Bradley, MDEQ



KISWR-DFSP-003				
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)
12-Nov-15	4.5-9.5	3.7 <sup>1</sup>	0.0839	3.7796 <sup>2</sup>

KISWR-DFSP-004					
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)	PFBS (µg/L)
12-Nov-15	8.0-13.0	2.89	0.0856	2.9756	0.0934 J

KISWR-DFSP-005					
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)	PFBS (µg/L)
12-Nov-15	3.0-8.0	1.86	0.0549	1.9149	0.169 J

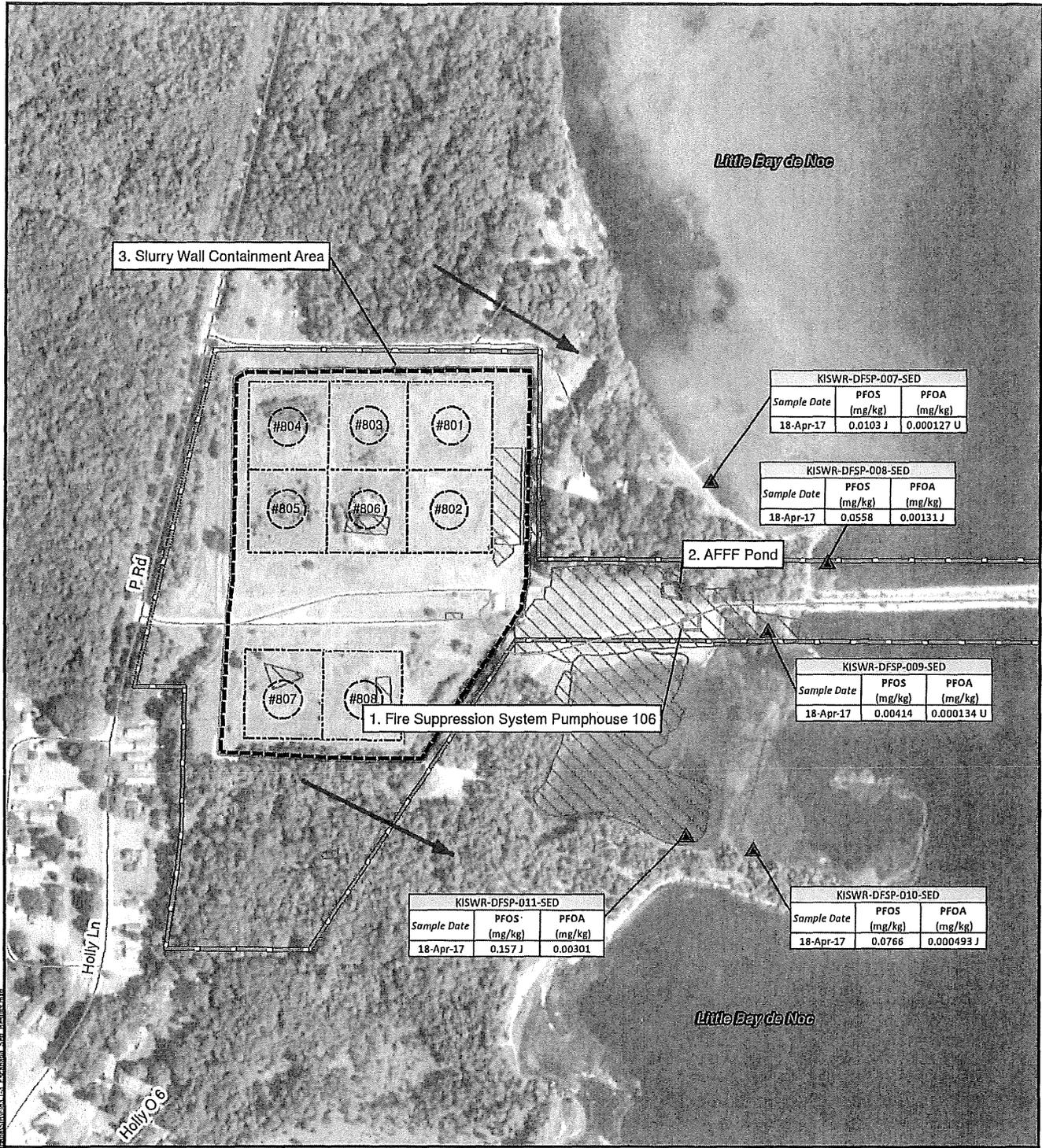
KISWR-DFSP-006					
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)	PFBS (µg/L)
12-Nov-15	5.0-10.0	1.94	0.0859	2.0259	0.198 J

KISWR-DFSP-002				
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)
12-Nov-15	3.0-8.0	11.1	0.189	11.289

KISWR-DFSP-001				
Sample Date	Sample Depth (ft. bgs)	PFOS (µg/L)	PFOA (µg/L)	PFOS+PFOA (µg/L)
12-Nov-15	3.0-8.0	6.29	0.0997	6.3897

<p>2261 Hughes Avenue Building 171, Suite 155 JBSA Lackland, Texas 78236</p>	<p><b>Symbol Key</b></p> <ul style="list-style-type: none"> <li> Soil Boring and Monitoring Well</li> <li> Former Slurry Wall</li> <li> Soil Berm (approximate centerline)</li> <li> Road</li> <li> Approximate Groundwater Flow Direction</li> <li> Former JP-4 Fuel Well</li> <li> Soil Excavations (1999 - 2004)</li> <li> AFFF Areas</li> <li> Former DFSP Escanaba Installation Boundary</li> </ul>	<p><b>FIGURE 3.1-2</b> <b>PFAS Analytical Results</b> <b>in Groundwater</b> Former Defense Fuel Supply Point Escanaba, Michigan</p>
	<p>For general reference purposes only.</p> <p>Project: 775290218</p> <p>By: T. Grim      Date: 6/19/2017</p> <p>0      200      400 Feet</p>	

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KISWR-DFSP-007-SED		
Sample Date	PFOS (mg/kg)	PFOA (mg/kg)
18-Apr-17	0.0103 J	0.000127 U

KISWR-DFSP-008-SED		
Sample Date	PFOS (mg/kg)	PFOA (mg/kg)
18-Apr-17	0.0558	0.00131 J

KISWR-DFSP-009-SED		
Sample Date	PFOS (mg/kg)	PFOA (mg/kg)
18-Apr-17	0.00414	0.000134 U

KISWR-DFSP-011-SED		
Sample Date	PFOS (mg/kg)	PFOA (mg/kg)
18-Apr-17	0.157 J	0.00301

KISWR-DFSP-010-SED		
Sample Date	PFOS (mg/kg)	PFOA (mg/kg)
18-Apr-17	0.0766	0.000493 J

**Air Force Civil Engineer Center**  
 2261 Hughes Avenue  
 Building 171, Suite 155  
 JBSA Lackland, Texas 78236

For general reference purposes only.

Project: 775290218  
 By: T. Grim Date: 6/19/2017

0 200 400 Feet

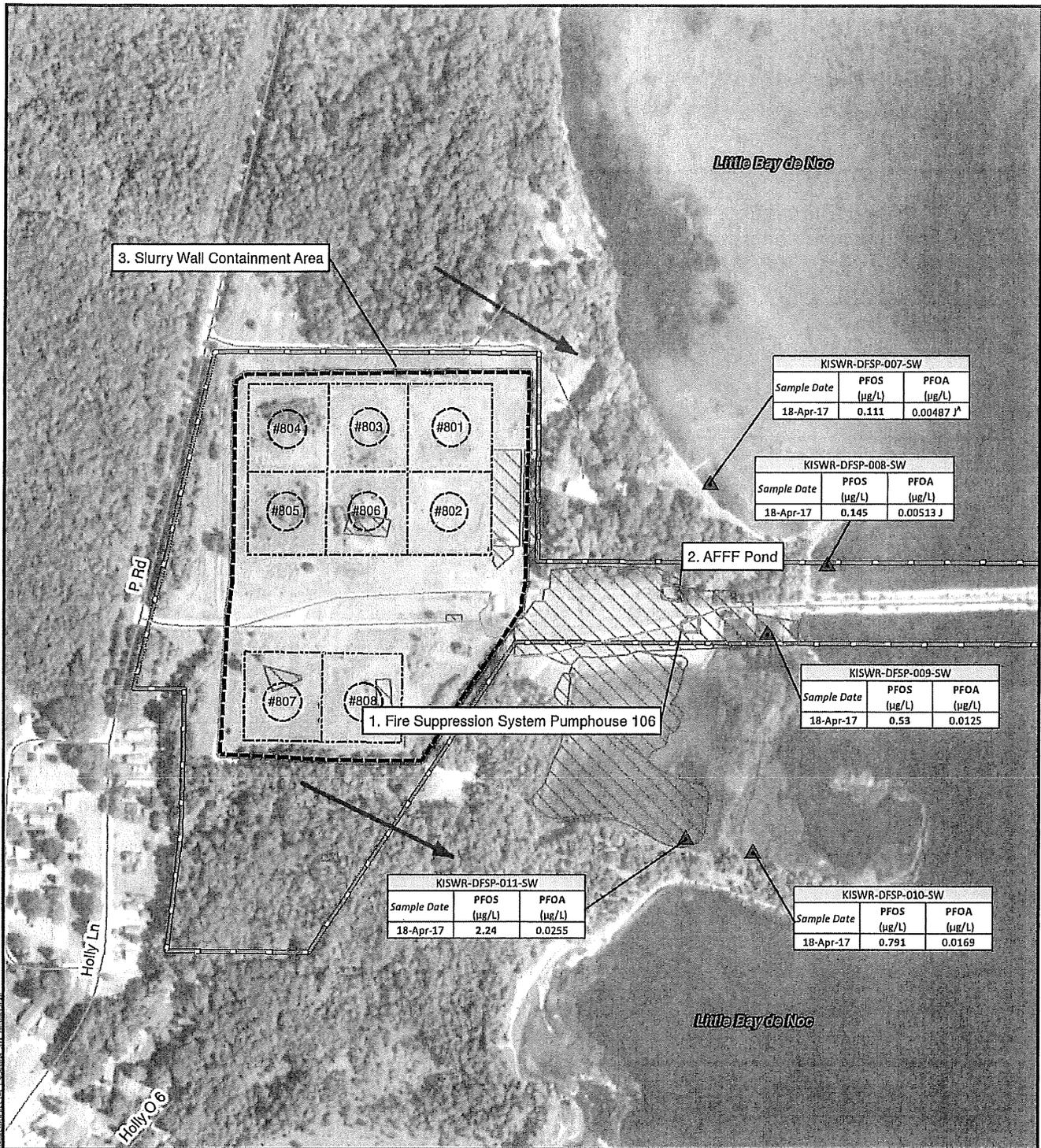
**Symbol Key**

- ▲ Sediment Sample
- Former Slurry Wall
- Soil Berm (approximate centerline)
- Road
- ➔ Approximate Groundwater Flow Direction
- Former JP-4 Fuel AST
- ▨ Soil Excavations (1999 - 2004)
- AFFF Areas
- Former DFSP Escanaba Installation Boundary

**FIGURE 3.1-3**  
**PFAS Analytical Results in Sediment**  
 Former Defense Fuel Supply Point Escanaba, Michigan

Site Inspection Report for Aqueous Film Forming Foam (AFFF) Areas

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KISWR-DFSP-007-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.111	0.00487 J*

KISWR-DFSP-008-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.145	0.00513 J

KISWR-DFSP-009-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.53	0.0125

KISWR-DFSP-011-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	2.24	0.0255

KISWR-DFSP-010-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.791	0.0169

**Air Force Civil Engineer Center**

2261 Hughes Avenue  
Building 171, Suite 155  
JBSA Lackland, Texas 78236

For general reference purposes only.

Project: 775290218  
By: T. Grim Date: 6/19/2017

0 200 400 Feet

**Symbol Key**

- ▲ Surface Water Sample
- Former Slurry Wall
- Soil Berm (approximate centerline)
- Road
- Approximate Groundwater Flow Direction
- Former JP-4 Fuel AST
- ▨ Soil Excavations (1999 - 2004)
- AFFF Areas
- Former DFSP Escanaba Installation Boundary

**FIGURE 3.1-4**  
**PFAS Analytical Results**  
**in Surface Water**  
Former Defense Fuel Supply Point  
Escanaba, Michigan

**Site Inspection Report for**  
**Aqueous Film Forming Foam**  
**(AFFF) Areas**



**DEPARTMENT OF THE AIR FORCE**  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

May 16, 2019

Mr. Robert Delaney  
Michigan Environment, Great Lakes, and Energy  
P.O. Box 30473  
Lansing, Michigan 78909-7973

Subject: Response to Michigan Environment, Great Lakes, and Energy Comments on  
Review of Response Activity Plan, Five Year Review Work Plan  
Former Defense Fuel Supply Point, Escanaba, Michigan

Dear Mr. Delaney:

In response to your comments provided in correspondence dated February 7, 2019, the Air Force Civil Engineer Center (AFCEC) hereby provides the following information to clarify the Five Year Review Work Plan, and encloses the revised Review of Response Activity Plan form. The Five Year Review Work Plan provides plans for the Five Year Review evaluation of the effectiveness of the remedy for wood tar and petroleum (historic) contaminants on the DFSP site. Since characterization of PFOS/PFOA is not complete and a remedy has not been determined for impacted media, the Five Year Review does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that were addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).

EGLE's correspondence appears to pertain to PFOS/PFOA contamination. The Five Year Review Work Plan contains no discussion of PFOS/PFOA. The Five Year Review Report includes a short summary of the PFOS/PFOA investigation performed by AFCEC from 2015 to 2018 for informational purposes. The text in Section A has been refined to further clarify that PFOS/PFOA are not part of the Five Year Review Work Plan.

Responses to the comments are provided below:

1. Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, groundwater/surface water (GSI) interface criteria for Perfluoroalkyl sulfonate. Also, sediments have been impacted as a site-specific risk assessment for per- and polyfluoroalkyl impacted sediments may be required. Please see the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report For Aqueous Film Forming Foam Areas, Former Defense Fuel Supply Point, Escanaba, Michigan Site Inspection.

**Response:** Clarification. It is inappropriate to include PFOS/PFOA in Section E because they are not part of the protectiveness determination of the remedy implemented in the IRAP 2007.

2. Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the USAF's awareness of Part 201, GSI criteria prior to the submission of the Request.

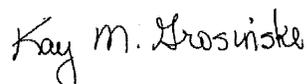
**Response:** Clarification. Although the Human Drinking Water Value (HDV) values for PFOS/PFOA were used in the June 2018 *Final Site Inspection Report* strictly as screening levels for surface water body samples and source area groundwater samples, the report was finalized before the Department of Defense determined that Part 201 GSI is not applicable.

3. Please check the box for "Impact to Surface Water" in Section E of the Request for MDEQ Review of Response Activity Plan and resubmit the form.

**Response:** As there is no impact to surface water from wood tar or petroleum contaminants, the "Impact to Surface Water" box in the "Current" column remains unchecked. However, the Request for EGLE Review of Response Activity Plan form, Section E, has been updated to include current soil contamination and the past presence of benzene-impacted surface water in ditches that are no longer present.

In the future, please address and email responses and correspondence related DFSP Escanaba to me at [kay.grosinske@us.af.mil](mailto:kay.grosinske@us.af.mil).

Respectfully,



KAY M. GROSINSKE, GS-13, DAF  
Program Manager, Execution Branch  
BRAC Program Management Division  
Air Force Civil Engineer Center (AFCEC)  
[kay.grosinske@us.af.mil](mailto:kay.grosinske@us.af.mil)

Commercial (210) 395-8272  
DSN 969-8272  
Cell (210) 627-4659

Enclosures: Revised Request for Review of Response Activity Form



**Request for DEQ Review of Response Activity Plan**

*This form is required for submittal of a request for the DEQ to review a Response Activity Plan, under Section 20114b, Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.*

**Section A: Type of Response Activity Plan being Submitted (Check all that apply):**

Remedial Investigation	<input type="checkbox"/>	20b(2) Site Specific Criteria	<input type="checkbox"/>
Evaluation Plan	<input type="checkbox"/>	(modification of generic criteria)	
Feasibility Study	<input type="checkbox"/>	20b(3) Site Specific Criteria or Surrogate	<input type="checkbox"/>
Remedial Action Plan	<input type="checkbox"/>	(no generic criteria available)	
Interim Response Plan	<input type="checkbox"/>	Section 20118(4) and (5) Request	<input type="checkbox"/>
Mixing Zone Request	<input type="checkbox"/>	Land or Resource Use Restrictions	<input type="checkbox"/>
20e(14) De Minimus GSI Impact	<input type="checkbox"/>	Other, Specify: <b>Five Year Review Work Plan for DFSP Escanaba Site</b>	<input checked="" type="checkbox"/>

The Response Activity Plan addresses the entire facility:  
 (entire facility as defined by Part 201, all releases, hazardous substances, and environmental media)

The Response Activity Plan does not address the entire facility:   
*Please specify the release(s), hazardous substance(s), environmental media, and/or portions of the facility addressed by the Response Activity Plan.*

**The Five Year Review Work Plan outlines the steps required to complete the Second Five Year Review of the Former Defense Fuel Supply Point (DFSP) site, Escanaba, Michigan. The Five Year Review will evaluate the effectiveness of the remedy implemented in 2007 for the wood tar and petroleum contaminants.**

**Since characterization of PFOS/PFOA is not complete and a remedy has not been determined for impacted media, the Five Year Review does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that was addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).**

**Section B: Facility/Property Subject to (Check all that apply):**

Facility regulated under Part 201 Part 201 Facility ID (if known):	<input checked="" type="checkbox"/>
Leaking Underground Storage Tank regulated pursuant to Part 213 Part 211/213. Facility ID, if known:	<input type="checkbox"/>
Oil or gas production and development regulated pursuant to Part 615 or 625	<input type="checkbox"/>
Licensed landfill regulated pursuant to Part 115	<input type="checkbox"/>
Licensed hazardous waste treatment, storage, or disposal facility regulated pursuant to Part 111	<input type="checkbox"/>
Consent Agreement or other legal agreement with the MDEQ	<input type="checkbox"/>

**Section C: Facility and Locational Information:**

Facility Name: Former Defense Fuel Supply Point	County: Delta
Street Address of Property: P Road	City/Village/Township: Escanaba
City: Escanaba State: MI Zip:	Town: Range: Section:
Property Tax ID (include all applicable IDs):	Quarter: Quarter-Quarter:
Status of submitter relative to the property (check all that apply):	Decimal Degrees Latitude: 45° 47' 28.85"N
Former Current Prospective	Decimal Degrees Longitude: 87° 3' 39.70"W
Owner <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Reference point for latitude and longitude:
Operator <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Center of site <input checked="" type="checkbox"/> Main/front door <input type="checkbox"/>
	Front gate/main entrance <input type="checkbox"/> Other <input type="checkbox"/>
	Collection method:
	Survey <input type="checkbox"/> GPS <input type="checkbox"/> Interpolation <input checked="" type="checkbox"/>

**Request for DEQ Review of Response Activity Plan**

**Section D: Submitter Information:**

Entity/person requesting review: Air Force Civil Eng Center		
Contact Person (name and title): Kay Grosinske, Prog Mgr		
Submitter Address: 2261 Hughes Ave, Suite 121		
City: JBSA Lackland	State: TX	Zip: 78236-9821
Telephone: (210) 395-8272	E-Mail: kay.grosinske@us.af.mil	
Relationship of contact person to the submitter:		
Owner Name, if different from submitter:	Company: Hannahville Indian Community	
Address: N14911 Hannahville B-1 Road		
City: Wilson	State: MI	Zip: 49896
Telephone:	E-Mail:	

**Section E: Are/were the following present at the facility (Check all that apply):**

	Current	Previous	Unknown
Mobile or Migrating Non Aqueous Phase Liquids (NAPL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil contamination above any residential criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil contamination above any non-residential criteria	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Soil aesthetic impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groundwater contamination above any residential criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groundwater contamination above any non-residential criteria	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater aesthetic impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Gas contamination above residential vapor intrusion (VI) screening levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Gas contamination above non-residential VI screening levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conditions immediately dangerous to life or health (IDLH)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire & Explosion hazards related to releases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contamination existing in drinking water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imminent threat to drinking water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impact to Surface Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface Water Sediments above screening levels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Section F: The following questions assist DEQ in evaluating this request.**

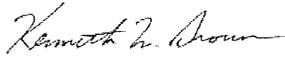
<b>Known or Suspected Contaminant(s) Type (Check all that apply):</b>			
Petroleum	<input checked="" type="checkbox"/>	Volatile Organic Compounds	<input checked="" type="checkbox"/>
Metals	<input type="checkbox"/>	Other	<input type="checkbox"/>
<b>Current Site Status (Check all that apply):</b>			
Undergoing property transfer	<input type="checkbox"/>	Active operations	<input type="checkbox"/>
		Inactive operation	<input checked="" type="checkbox"/>
<b>Current Property Use:</b>			
Residential	<input type="checkbox"/>		
Non-residential	<input type="checkbox"/>	Vacant	
<b>Anticipated Property Use:</b>			
Residential	<input type="checkbox"/>		
Non-residential	<input checked="" type="checkbox"/>		
<b>Estimated Area of Contamination Addressed in Response Action Plan (Cumulative):</b>			
Currently undetermined	<input type="checkbox"/>	< 0.5 acre	<input type="checkbox"/>
		> 0.5 acre	<input checked="" type="checkbox"/>
<b>Migration:</b>			
	<b>Yes</b>	<b>No</b>	<b>Unknown</b>
Has contamination migrated beyond the property boundaries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the Notice of Migration been submitted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Facility Investigation Status:</b>			
Ongoing	<input type="checkbox"/>	Complete	<input checked="" type="checkbox"/>

**Request for DEQ Review of Response Activity Plan**

<b>Facility Response Activity Status (Check all that apply):</b> None <input type="checkbox"/> IR Implemented <input type="checkbox"/> Response Activity Ongoing <input checked="" type="checkbox"/> Response Activity Completed <input type="checkbox"/>
<b>Drinking Water Supply for Facility (Check all that apply):</b> Municipal <input type="checkbox"/> Private Well(s) <input type="checkbox"/> No Current Water Supply <input checked="" type="checkbox"/> Municipal Available <input type="checkbox"/>
<b>On-site Well(s) (Check all that apply):</b> Drinking Water <input type="checkbox"/> Industrial/Commercial Production <input type="checkbox"/> Agricultural/Irrigation <input type="checkbox"/> No well on-site <input checked="" type="checkbox"/> Approximate Depth of Well(s):
<b>Local Drinking Water Supply:</b> Is facility in a designated Wellhead Protection Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Distance to nearest off-site drinking water well: 300 ft on neighboring DeGrand Private <input checked="" type="checkbox"/> Municipal <input type="checkbox"/>
<b>Surface Water Bodies on or Adjacent to Facility (Check all that apply):</b> Wetlands <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Stream/River <input type="checkbox"/> Lake/Pond <input checked="" type="checkbox"/> Lake Michigan
<b>Local Surface Water Bodies:</b> Distance to nearest wetland:      Ditch:      Stream/River:      Lake/Pond:
<b>Have other plans been submitted for this facility?</b> Facility Name, if different than this submittal: Date and Name of most recent submittal: First Five Year Review Report for DFSP Escanaba, Nov 2013

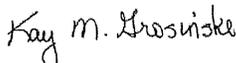
**Section G: Environmental Professional Signature:**

*With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief.*

Signature:  Date: 5/16/2019  
Printed Name: Kenneth W. Brown  
Company of Environmental Professional: AECOM  
Address: 1555 N. Rivercenter Drive, Suite 214  
City: Milwaukee State: WI Zip: 53212  
Telephone: (414) 944-6192 E-mail address: Kenneth.brown@aecom.com

**Section H: Submitter Signature:**

*With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief and I am legally authorized to sign for the submitter*

Signature:  Date: 5/16/2019  
Printed name: Kay M. Grosinske  
Title/Relationship of signatory to submitter: AFCEC Program Manager  
Address: 2261 Hughes Ave., Suite 121  
City: JBSA Lackland State: TX Zip: 78236-9821  
Telephone: (210) 395-8272 E-Mail address: kay.grosinske@us.af.mil

This form and the Response Activity Plan should be submitted to the MDEQ Remediation & Redevelopment Division District Office for the county in which the property is located, unless the response activity is related to a facility that is regulated by another MDEQ Division. A district map is located at [www.michigan.gov/deqrrd](http://www.michigan.gov/deqrrd). If regulated by another division, contact should be made with that division for information on where to submit the form and plan.



GRETCHEN WHITMER  
GOVERNOR

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



LIESL EICHLER CLARK  
DIRECTOR

October 10, 2019

Ms. Kay M. Grosinke  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JBSA Lackland, Texas 78236-9821

SUBJECT: Draft Second Five Year Review (FYR) for the Escanaba Former Defense Fuel Supply Point, OT-13 Report, Escanaba, Michigan.

Dear Ms. Grosinke:

Michigan Department of Environment, Great Lakes, and Energy (EGLE) staff has reviewed the Draft Second FYR for the Escanaba Former Defense Fuel Supply Point dated May 17, 2019. Essentially, the Air Force did not do a full protectiveness analysis for the site. The protectiveness analysis did not cover the perfluoroalkyl contamination that has been documented to exist at the site above both Part 201, Environmental Remediation, of the National Resources and Environmental Protection Act, 1994 PA 451, as amended and the United States Environmental Protection Agency health advisory screening levels.

Attached to this letter is our September 6, 2019, letter to Ms. Kay Grosinke in which EGLE lays out its specific objections to the manner in which the Air Force fulfills its CERCLA responsibilities in performing the FYR. EGLE cannot support the Air Force's determination that the remedy is protective of human health, welfare and the environment.

Please see the attached memo from Ms. Carol Tracy to Mr. Robert Delaney for EGLE's specific comments on the draft Report.

If you need further information or assistance, please contact me, at 517-388-7037; [delaneyr@michigan.gov](mailto:delaneyr@michigan.gov); DSMOA Coordinator, Remediation and Redevelopment Division; or EGLE P.O. Box 30473, Lansing, Michigan 78909-7973.

Sincerely,

Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division  
517-388-7037

Enclosures:

cc: Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Mr. Abiy Mussa, Michigan Department of Health and Human Services  
Ms. Kathy Shirey, EGLE  
Mr. Dan Yordanich, EGLE  
Mr. John Bradley, EGLE



GRETCHEN WHITMER  
GOVERNOR

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



LIESL EICHLER CLARK  
DIRECTOR

September 6, 2019

Ms. Kay M. Grosinke  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JBSA Lackland, Texas 78236-9821

**SUBJECT:** Response to Michigan Environment, Great Lakes, and Energy Comments on Review of Response Activity Plan, Five-Year Review Work Plan, Former Defense Fuel Supply Point, Escanaba, Michigan.

Dear Ms. Grosinke:

Thank you for your May 16, 2019 letter (enclosed) to Mr. Robert Delaney regarding the "Response to Michigan Environment, Great Lakes, and Energy (EGLE) Comments on Review of Response Activity Plan, Five-Year Review (FYR) Work Plan, Former Defense Fuel Supply Point (DFSP), Escanaba, Michigan." EGLE Staff has reviewed the Air Force's responses to EGLE's initial February 7, 2019 review letter (enclosed) and has the following comments.

#### Comment 1

**Air Force's comment, May 16 letter:** The FYR Work Plan provides plans for the FYR evaluation of the effectiveness of the remedy for wood tar and petroleum (historic) contaminants on the DFSP site. Since characterization of perfluorooctanesulfonic acid/perfluorooctanoic (PFOS)/(PFOA) is not complete and a remedy has not been determined for impacted media, the FYR does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that were addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).

**EGLE's response:** Under the provisions of CERCLA<sup>1</sup>, FYR reviews have only one purpose and that is to ensure that an existing remedy is protective of human health and the environment. Section 121(c) of CERCLA states in part:

*"REVIEW-If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each 5 years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. ..."*

The Air Force's position appears to be that the FYR does not have to address newly discovered contaminants or pollutants at a site. This position is contrary to long standing precedent at the Department of Defense (DoD) sites and other sites being addressed under

<sup>1</sup> The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9601-9675)  
CONSTITUTION HALL • 525 WEST ALLEGAN STREET • P.O. BOX 30473 • LANSING, MICHIGAN 48909-7973  
Michigan.gov/EGLE • 800-662-9278

CERCLA. Also, such a position is contrary to and conflicts with the requirements of law, directives, and guidance, as follows:

1. The National Contingency Plan<sup>2</sup> (NCP)

a. § 300.430(f)(4)(ii) states:

*"If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after initiation of the selected remedial action."*

b. § 300.430(f)(1)(ii)(B)(1) states:

*"Requirements that are promulgated or modified after ROD signature must be attained (or waived) only when determined to be applicable or relevant and appropriate and necessary to ensure that the remedy is protective of human health and the environment."*

The Air Force is required to follow CERCLA in the same manner as other entities unless they formally waive a requirement. The Air Force is required to perform a FYR as at other CERCLA regulated sites. The NCP states that not only CERCLA defined hazardous substances found at the site must be evaluated against the protectiveness standard, but also contaminants and pollutants that are discovered at a site. PFOS and PFOA are pollutants or contaminants under CERCLA definitions of those terms. The DoD has acknowledged this by multiple time critical and interim actions at sites across the nation that have been contaminated with PFOS and PFOA. Other per- and polyfluoroalkyl substances (PFAS) would also fit the definition of contaminant or pollutant under CERCLA and must be similarly recognized by the Air Force.

Under the NCP any new requirements that are promulgated or modified after the record of decision (ROD) signatures must be attained when they are determined to be applicable or relevant and appropriate and necessary to ensure that the remedies are protective of human health and the environment. Under the provisions of Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, PA 451 of 1994, and the rules promulgated thereunder, EGLE has formally established (applicable) clean-up criteria for PFOA and PFOS for groundwater and the groundwater/surface water interface (GSI). The established clean-up criteria are applicable or relevant and appropriate requirements (ARARs) to be considered for the DFSP Escanaba remedial actions carried out by the Air Force and the subject of this FYR Work Plan.

EGLE finds that the same groundwater media and same physical locations as the remedies for wood tar and petroleum are also impacted by PFOS, PFOA, and other PFAS. It is clear from data previously collected at the site that PFOS and PFOA are present at the site at concentrations well above applicable health-based Part 201 criteria and co-mingled with the other contaminants mentioned.

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<sup>2</sup> National Oil and Hazardous Substance Pollution Contingency Plan (40 CFR § 300.1 *et seq.*)

EGLÉ also asserts that the Air Force has been notified in a timely manner of the applicable Part 201 criteria for PFOS and PFOA.

2. Defense Environmental Restoration Program<sup>3</sup> (DERP)

a. § 2701(b)(1) and (2) states:

*“(b) Program Goals-Goals of the program shall include the following:*

*(1) The identification, investigation, research and development, and cleanup of contamination from a hazardous substance or pollutant or contaminant.*

*(2) Correction of other environmental damage (such as detection and disposal of unexploded ordinance) which creates an imminent and substantial endangerment to the public health or welfare or the environment.”*

b. § 2701(c)(1)(A) and (B) states:

*“(c) Responsibility for Response Actions:*

*(1) Basic Responsibility-The Secretary shall carry out (in accordance with the provisions of this chapter and CERCLA) all response actions with respect to releases of hazardous substances from each of the following:*

*(A) Each facility or site owned by, leased to, or otherwise possessed by the United States and under the jurisdiction of the Secretary.*

*(B) Each facility or site which was under the jurisdiction of the Secretary and owned by, leased to, or otherwise possessed by the United States at the time of actions leading to contamination by hazardous substances.”*

DERP clearly states that the Air Force must address not only CERCLA defined hazardous substances, but must also address contaminants or pollutants, such as PFOS and PFOA (and likely other PFAS) that are present at the DFSP facility. Since DFSP Escanaba has ROD's issued under CERCLA, it is well documented that CERCLA defined hazardous substances have been released into the environment. Thus, in accordance with CERCLA, Applicable or Relevant and Appropriate Requirements (ARARs) for contaminants or pollutants must be considered and addressed in the protectiveness analysis at the FYR as a required activity under CERCLA.

3. DERP Manual<sup>4</sup>

Item 4 of the DERP Manual states in part:

*“4. POLICY. It is DoD policy in accordance with Reference (c) that the DoD shall:*

*a. Identify, evaluate and, where appropriate, remediate contamination resulting from DoD activities.*

<sup>3</sup> Environmental Restoration (10 U.S.C. § 2700 – 2710)

<sup>4</sup> Defense Environmental Restoration Program Manual, updated August 31, 2018

- b. Ensure immediate action to remove imminent threats to human health and the environment.*
- c. Comply with applicable statutes, regulations, Executive orders, and other legal requirements governing response actions to address contamination.*
- d. Execute an environmental restoration program, known as DERP, at facilities under the jurisdiction of the Secretary of Defense pursuant to section 2701(a)(1) of title 10, United States Code (U.S.C.) (Reference (n)). ...”*

As quoted above, the DERP Manual clearly identifies DoD’s policy to remediate contamination caused by DoD activities. The FYR process is specifically designed to evaluate if a remedy can still be considered protective after five years of implementation by accounting for new information, such as new data and new requirements. A significant policy of the DoD (as the DERP Manual is guidance to DoD staff) is to ensure that any imminent threat to human health and the environment is addressed. Disregarding new information and new or modified ARARs that are risk-based in the FYR, averts any analysis of imminent and substantial endangerment, the need for additional remedial investigation/feasibility study (RI/FS), and/or the need to modify the ROD in an appropriate manner. Failure of the Air Force to perform a complete protectiveness analysis as a component of the FYR is contrary to the intent of DoD policy and the laws referenced above.

#### 4. DoD Memorandum<sup>5</sup>

The procedures in this memorandum were “*effective immediately,*” and are stated in part as follows:

*“b. Conducting FYR*

*(3) During the FYR, the DoD Component will evaluate the effect of any newly promulgated or modified ARARs that are based on protection of human health and the environment, and changes in toxicity values or exposure assumptions affecting the protectiveness of the remedy originally selected in the DD, in accordance with subpart 300.430(f)(1)(ii)(B)(1) of the NCP. ...*

*(8) If the FYR determines that a remedy is no longer protective based on the criteria in Reference (bj), the FYR report shall include recommendations concerning the steps necessary to achieve protectiveness.*

*(9) If the FYR identifies a need to consider a significant change in a remedy, the DoD Component shall prepare further documentation, such as an Explanation of Significant Difference or ROD amendment, consistent with subpart 300.435 of the NCP. These activities should be accomplished separately and in no way delay completing the report within the required timeframe.”*

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<sup>5</sup> Memorandum for Deputy Assistant Secretary of the Army, et al. Subject: Five-year Review Procedures – Update to DoD Manual 4715.20, “Defense Environmental Restoration Program Management,” March 9, 2012 (dated June 22, 2014)

In the memorandum regarding the FYR process, DoD leadership further expounded the requirements that DoD staff are to follow. The memorandum cites the same section of the NCP that EGLE referenced above, and DoD staff are further instructed to review newly promulgated or modified ARARs. Part 201 criteria, as ARARs, have been recognized at this site (as at other CERCLA sites in Michigan) by both the Environmental Protection Agency (EPA) and DoD.

The Air Force stated in their May 16, 2019 letter that, "... The Department of Defense determined that Part 201 GSI is not applicable." EGLE invites DoD to submit its legal analysis that forms the basis of this DoD determination for EGLE's review.

#### 5. Air Force Instruction<sup>6</sup>

This instruction indicates that "*compliance with this publication is mandatory*" and states the following with respect to FYRs:

*"16.4.8. Use OSWER Directive 9355.7-03B-P, Comprehensive Five-Year Review Guidance, June 2001, as a guide for meeting the statutory requirements of conducting Five-Year Reviews, Five-Year Reviews and EPA's Summary Form, November 2011, for a Five-Year Review template.*

*18.3.1. During the Five-Year Review, it is appropriate to examine whether a change in a contaminant's risk information or new information about exposure pathways, such as vapor intrusion, warrants further investigation at the site. Five-Year Reviews are discussed in paragraph 16.4.*

*18.3.2. Under CERCLA, if an EC<sup>7</sup> and appropriate exposure pathways were evaluated in a completed health risk assessment approved by the lead regulatory agency (typically as part of an RI/FS), and there is a completed DD for the site, then the risk assessment or the DD shall be reopened or revised only IAW 40 CFR 300.430(f)(1)(ii)(B)(1) for changed ARARs. For ECs for which cleanup levels were originally risk-based, remedies specified in the DD will be reopened only when the original risk-based cleanup level is no longer protective.*

*18.3.3. For ECs with new toxicity levels or health standards and that were not evaluated in a risk assessment or a DD, the appropriate AFCEC/CZ division(s) or NGB/A7O, as applicable, in coordination with AFCEC/CZT, or AFCEC/CIB shall evaluate the risk and recommend appropriate follow-up action consistent with applicable legal requirements and this Instruction. (T-0)."*

The original RI/FS and ROD did not address the presence or toxicity of PFOS and PFOA and other PFAS at the DFSP site. The Air Force Instruction states that new emerging contaminants (ECs) are to be evaluated during the FYR. As previously stated, it is the

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<sup>6</sup> Air Force Instruction 32-7020, Certified Current 18 April 2016

<sup>7</sup> Emerging contaminant(s)

long-standing practice, based upon the interpretation of CERCLA and the NCP, that the protectiveness analysis of the newly discovered contaminants or pollutants (discovered after the ROD) is to be included in the FYR.

#### **Comment 2**

**Air Force's comment, May 16 letter:** EGLE's correspondence appears to pertain to PFOS/PFOA contamination. The FYR Work Plan contains no discussion of PFOS/PFOA. The FYR Report includes a short summary of the PFOS/PFOA investigation performed by AFCEC from 2015 to 2018 for informational purposes. The text in Section A has been refined to further clarify that PFOS/PFOA are not part of the FYR Work Plan.

**EGLE's response:** The Air Force is correct in that EGLE's correspondence specifically related to the fact that the Air Force did not disclose on Form EQP4028, Request for Review, the presence of surface water contaminated with PFAS that the Air Force discovered during the site inspection of the DFSP Escanaba site. EGLE staff would like to clarify that a protectiveness analysis of the remedy using all the data and ARARs is required under the above referenced laws and DoD's written guidance.

#### **Comment 3**

**EGLE Comment, February 7, 2019 letter:** Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, GSI interface criteria for Perfluoroalkyl sulfonate. Also, sediments have been impacted as a site-specific risk assessment for PFAS impacted sediments may be required. See the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report for Aqueous Film Forming Foam Areas, Former DFSP, Escanaba, Michigan Site Inspection.

**Air Force's Response, May 16 letter:** Clarification. It is inappropriate to include PFOS/PFOA in Section E because they are not part of the protectiveness determination of the remedy implemented in the IRAP 2007.

**EGLE's Response:** The question on Section E of the form is "Are/were the following present at the facility?" In relation to PFAS, based on the data provided by the Air Force, there are impacts to groundwater and surface water associated with this facility and the boxes should be checked accordingly.

#### **Comment 4**

**EGLE's Comment, February 7, 2019 letter:** Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the Air Force's awareness of Part 201, GSI criteria prior to the submission of the Request.

**Air Force's Response, May 16, letter:** Clarification. Although the Human Drinking Water Value (HDV) values for PFOS/PFOA were used in the June 2018 Final Site Inspection Report strictly as screening levels for surface water body samples and source area groundwater samples, the report was finalized before the DoD determined that Part 201 GSI is not applicable.

**EGLE's Response:** EGLE's position is that the groundwater and GSI criteria for PFOS and PFOA that are established under Part 201 and its promulgated rules are ARARs. The presence of PFOS and PFOA must also be evaluated during the FYR of the protectiveness of the remedy originally selected.

If you need further information or assistance, please contact me, at 517-388-7037; delaneyr@michigan.gov; DSMOA Coordinator, Remediation and Redevelopment Division; or EGLE P.O. Box 30473, Lansing, Michigan 48909-7973.

Sincerely,

A handwritten signature in black ink, appearing to read "R. Delaney", written in a cursive style.

Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division  
517-388-7037

Enclosures:

cc: Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Ms. Kathy Shirey, EGLE  
Mr. John Bradley, EGLE



GRETCHEN WHITMER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



LIESL EICHLER CLARK  
DIRECTOR

February 7, 2019

Ms. Kay M. Grosinske  
AFCEC Program Manager  
2261 Hughes Avenue, Suite 121  
JBSA Lackland, Texas 78236-9821

SUBJECT: Request for Michigan Department of Environmental Quality (MDEQ)  
Review of Response Activity Plan, for the Former Defense Fuel Supply  
Point (DFSP), Escanaba, Michigan, Delta County

Dear Ms. Grosinske:

Thank you for submitting the United States Air Force's (USAF's) January 8, 2019,  
"Request for DEQ Review of Response Activity Plan" for the Five-Year Review Work  
Plan for the Former DFSP Escanaba Site (Request) (enclosure).

The form is well prepared; however, it is not complete.

1. Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, groundwater/surface water (GSI) interface criteria for perfluoroalkyl sulfonate. Also, sediments have been impacted and a site-specific risk assessment for per- and polyfluoroalkyl impacted sediments may be required. Please see the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report for Aqueous Film Forming Foam Areas, Former Defense Fuel Supply Point, Escanaba, Michigan Site Inspection.
2. Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the USAF's awareness of Part 201, GSI criteria prior to the submission of the Request.
3. Please check the box for "Impact to Surface Water" in Section E of the Request for MDEQ Review of Response Activity Plan and resubmit the form.

If you need further information or assistance, please contact me, at 517-388-7037,  
delaneyR@michigan.gov; or Mr. John Bradley, Geology and Defense Site Management

Ms. Kay M. Grosinske

2

February 7, 2019

Unit, Remediation and Redevelopment Division, at 517-512-5017;  
bradleyj1@michigan.gov; or MDEQ, P.O. Box 30473, Lansing, Michigan 78909-7973.

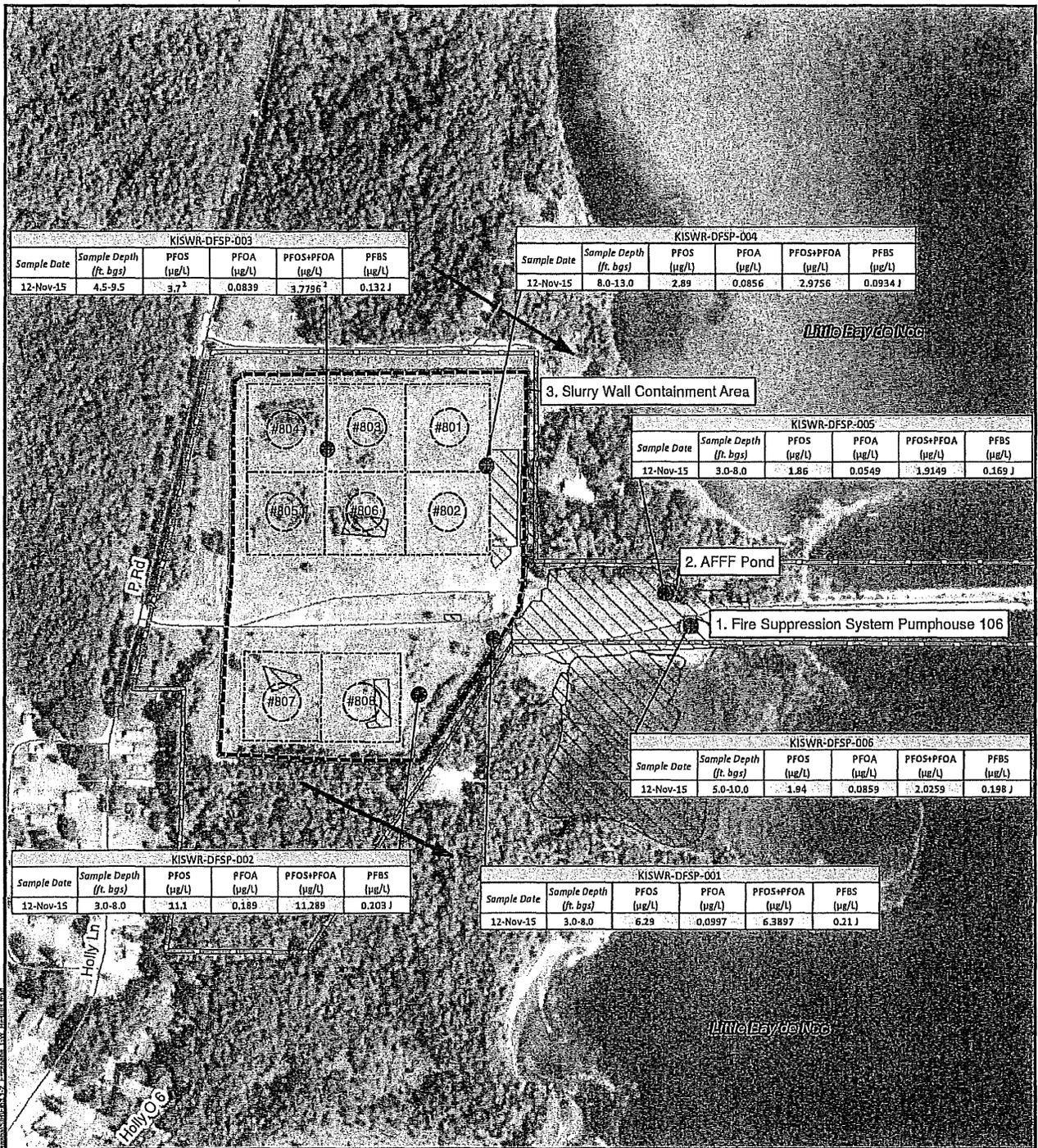
Sincerely,



Robert Delaney  
DSMOA Coordinator  
Remediation and Redevelopment Division  
517-388-7037

Enclosures:

Cc: Dr. Steven Termaath, USAF  
Mr. Kenneth W. Brown, AECOM  
Mr. Paul Waltz, Bay West  
Ms. Polly Synk, Michigan Department of Attorney General  
Ms. Susan Leeming, MDEQ  
Mr. John Bradley, MDEQ



**Air Force Civil Engineer Center**  
 2261 Hughes Avenue  
 Building 171, Suite 155  
 JBSA Lackland, Texas 78236

For general reference purposes only.

Project: 775290218  
 By: T. Grim Date: 6/19/2017

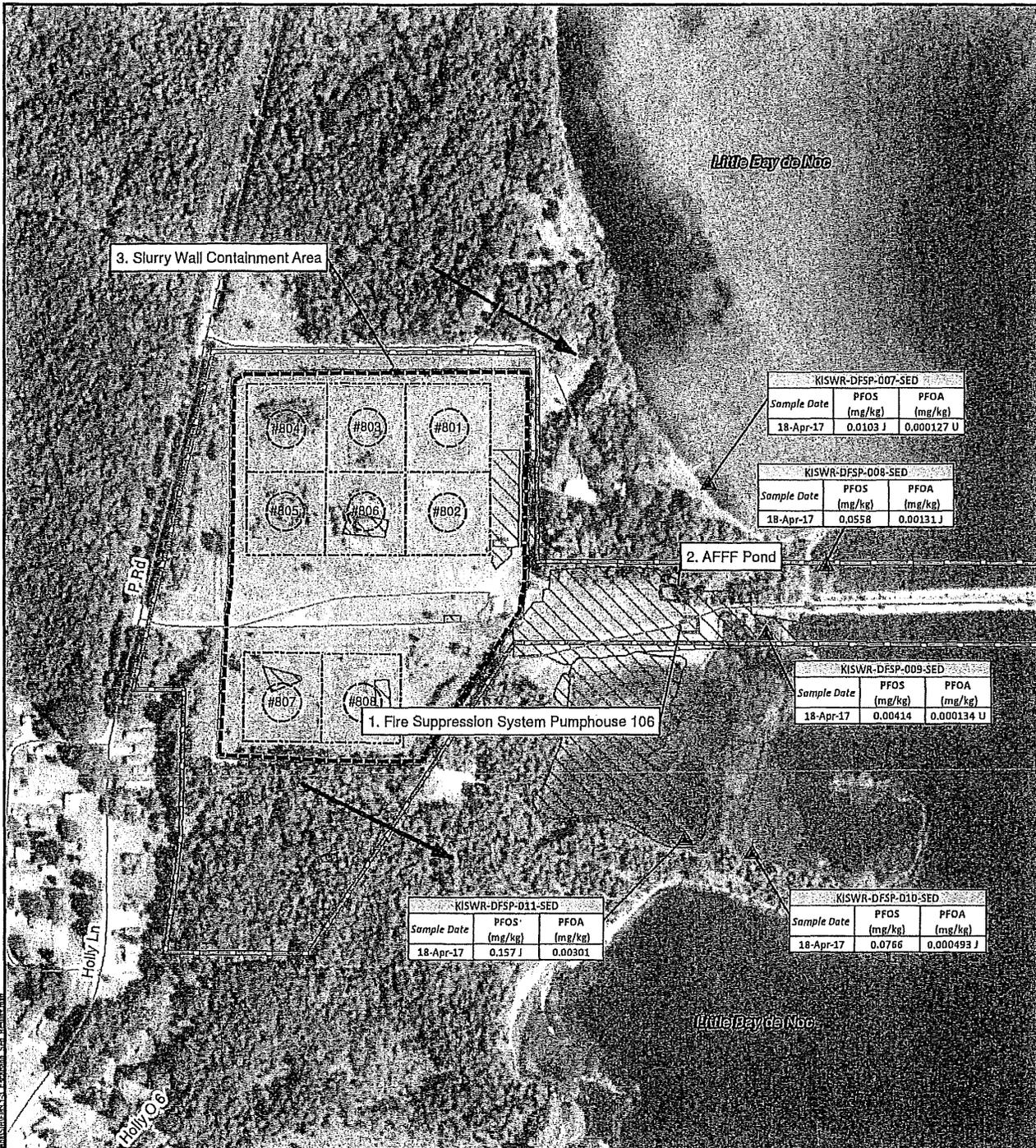
0 200 400 Feet

**Symbol Key**

- Soil Boring and Monitoring Well
- Former Slurry Wall
- Soil Berm (approximate centerline)
- Road
- Approximate Groundwater Flow Direction
- Former JP-4 Fuel Well
- Soil Excavations (1999 - 2004)
- AFFF Areas
- Former DFSP Escanaba Installation Boundary

**FIGURE 3.1-2**  
**PFAS Analytical Results**  
**in Groundwater**  
 Former Defense Fuel Supply Point  
 Escanaba, Michigan

**Site Inspection Report for**  
**Aqueous Film Forming Foam**  
**(AFFF) Areas**



**Air Force Civil Engineer Center**



2261 Hughes Avenue  
 Building 171, Suite 155  
 JBSA Lackland, Texas 78236

For general reference purposes only.



Project: 775290218

By: T. Grim

Date: 8/19/2017

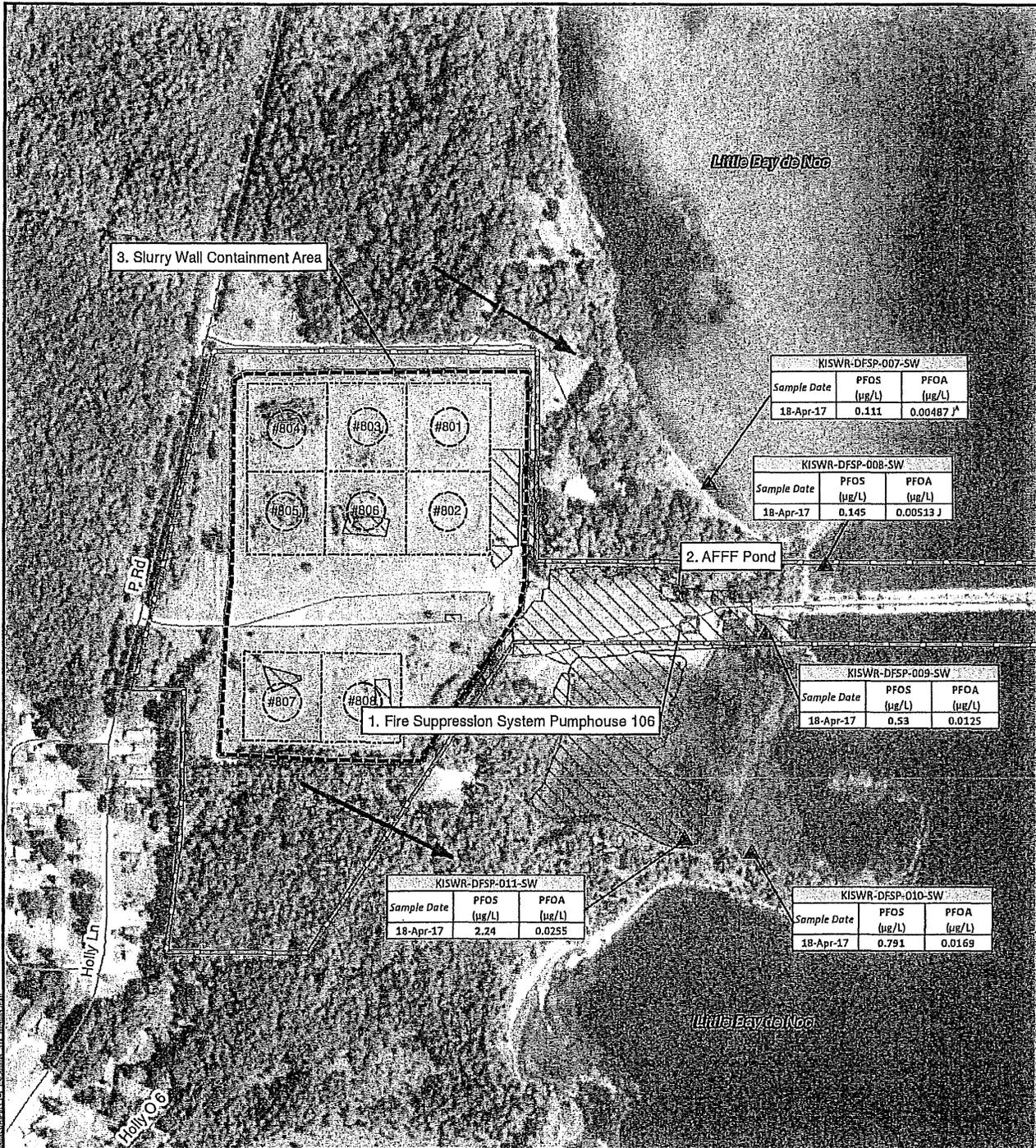
0 200 400 Feet

**Symbol Key**

- Sediment Sample
- Former Slurry Wall
- Soil Berm (approximate centerline)
- Road
- Approximate Groundwater Flow Direction
- Former JP-4 Fuel AST
- Soil Excavations (1999 - 2004)
- AFFF Areas
- Former DFSP Escanaba Installation Boundary

**FIGURE 3.1-3**  
**PFAS Analytical Results**  
**in Sediment**  
 Former Defense Fuel Supply Point  
 Escanaba, Michigan

Site Inspection Report for  
 Aqueous Film Forming Foam  
 (AFFF) Areas



KISWR-DFSP-007-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.111	0.00487 <sup>A</sup>

KISWR-DFSP-008-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.145	0.00513 J

KISWR-DFSP-009-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.53	0.0125

KISWR-DFSP-010-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	0.791	0.0169

KISWR-DFSP-011-SW		
Sample Date	PFOS (µg/L)	PFOA (µg/L)
18-Apr-17	2.24	0.0255

**Air Force Civil Engineer Center**  
 2261 Hughes Avenue  
 Building 171, Suite 155  
 JBSA Lackland, Texas 78236

For general reference purposes only.

Project: 775290218  
 By: T. Grim Date: 6/19/2017

0 200 400 Feet

**Symbol Key**

- ▲ Surface Water Sample
- Former Slurry Wall
- Soil Berm (approximate centerline)
- Road
- Approximate Groundwater Flow Direction
- Former JP-4 Fuel AST
- ▨ Soil Excavations (1999 - 2004)
- AFFF Areas
- Former DFSP Escanaba Installation Boundary

**FIGURE 3.1-4**  
**PFAS Analytical Results**  
 in Surface Water  
 Former Defense Fuel Supply Point  
 Escanaba, Michigan

**Site Inspection Report for**  
**Aqueous Film Forming Foam**  
**(AFFF) Areas**



**DEPARTMENT OF THE AIR FORCE**  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

May 16, 2019

Mr. Robert Delaney  
Michigan Environment, Great Lakes, and Energy  
P.O. Box 30473  
Lansing, Michigan 78909-7973

Subject: Response to Michigan Environment, Great Lakes, and Energy Comments on  
Review of Response Activity Plan, Five Year Review Work Plan  
Former Defense Fuel Supply Point, Escanaba, Michigan

Dear Mr. Delaney:

In response to your comments provided in correspondence dated February 7, 2019, the Air Force Civil Engineer Center (AFCEC) hereby provides the following information to clarify the Five Year Review Work Plan, and encloses the revised Review of Response Activity Plan form. The Five Year Review Work Plan provides plans for the Five Year Review evaluation of the effectiveness of the remedy for wood tar and petroleum (historic) contaminants on the DFSP site. Since characterization of PFOS/PFOA is not complete and a remedy has not been determined for impacted media, the Five Year Review does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that were addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).

EGLE's correspondence appears to pertain to PFOS/PFOA contamination. The Five Year Review Work Plan contains no discussion of PFOS/PFOA. The Five Year Review Report includes a short summary of the PFOS/PFOA investigation performed by AFCEC from 2015 to 2018 for informational purposes. The text in Section A has been refined to further clarify that PFOS/PFOA are not part of the Five Year Review Work Plan.

Responses to the comments are provided below:

1. Section E. Surface water releases at the DFSP have impacted above applicable Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994, as amended, groundwater/surface water (GSI) interface criteria for Perfluoroalkyl sulfonate. Also, sediments have been impacted as a site-specific risk assessment for per- and polyfluoroalkyl impacted sediments may be required. Please see the attached Figure 3.1-2, Figure 3.1-3, and Figure 3.1-4 from the Final Site Inspection Report For Aqueous Film Forming Foam Areas, Former Defense Fuel Supply Point, Escanaba, Michigan Site Inspection.

**Response:** Clarification. It is inappropriate to include PFOS/PFOA in Section E because they are not part of the protectiveness determination of the remedy implemented in the IRAP 2007.

2. Same Report Table 1.1.1. Health Based Project Screening Levels (attached) demonstrated the USAF's awareness of Part 201, GSI criteria prior to the submission of the Request.

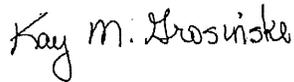
**Response:** Clarification. Although the Human Drinking Water Value (HDV) values for PFOS/PFOA were used in the June 2018 *Final Site Inspection Report* strictly as screening levels for surface water body samples and source area groundwater samples, the report was finalized before the Department of Defense determined that Part 201 GSI is not applicable.

3. Please check the box for "Impact to Surface Water" in Section E of the Request for MDEQ Review of Response Activity Plan and resubmit the form.

**Response:** As there is no impact to surface water from wood tar or petroleum contaminants, the "Impact to Surface Water" box in the "Current" column remains unchecked. However, the Request for EGLE Review of Response Activity Plan form, Section E, has been updated to include current soil contamination and the past presence of benzene-impacted surface water in ditches that are no longer present.

In the future, please address and email responses and correspondence related DFSP Escanaba to me at [kay.grosinske@us.af.mil](mailto:kay.grosinske@us.af.mil).

Respectfully,



KAY M. GROSINSKE, GS-13, DAF  
Program Manager, Execution Branch  
BRAC Program Management Division  
Air Force Civil Engineer Center (AFCEC)  
[kay.grosinske@us.af.mil](mailto:kay.grosinske@us.af.mil)

Commercial (210) 395-8272  
DSN 969-8272  
Cell (210) 627-4659

Enclosures: Revised Request for Review of Response Activity Form



**Request for DEQ Review of Response Activity Plan**

*This form is required for submittal of a request for the DEQ to review a Response Activity Plan, under Section 20114b, Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.*

**Section A: Type of Response Activity Plan being Submitted (Check all that apply):**

Remedial Investigation	<input type="checkbox"/>	20b(2) Site Specific Criteria	<input type="checkbox"/>
Evaluation Plan	<input type="checkbox"/>	(modification of generic criteria)	
Feasibility Study	<input type="checkbox"/>	20b(3) Site Specific Criteria or Surrogate	<input type="checkbox"/>
Remedial Action Plan	<input type="checkbox"/>	(no generic criteria available)	
Interim Response Plan	<input type="checkbox"/>	Section 20118(4) and (5) Request	<input type="checkbox"/>
Mixing Zone Request	<input type="checkbox"/>	Land or Resource Use Restrictions	<input type="checkbox"/>
20e(14) De Minimus GSI Impact	<input type="checkbox"/>	Other, Specify: <b>Five Year Review Work Plan for DFSP Escanaba Site</b>	<input checked="" type="checkbox"/>

The Response Activity Plan addresses the entire facility:   
 (entire facility as defined by Part 201, all releases, hazardous substances, and environmental media)

The Response Activity Plan does not address the entire facility:   
*Please specify the release(s), hazardous substance(s), environmental media, and/or portions of the facility addressed by the Response Activity Plan.*

**The Five Year Review Work Plan outlines the steps required to complete the Second Five Year Review of the Former Defense Fuel Supply Point (DFSP) site, Escanaba, Michigan. The Five Year Review will evaluate the effectiveness of the remedy implemented in 2007 for the wood tar and petroleum contaminants.**

**Since characterization of PFOS/PFOA is not complete and a remedy has not been determined for impacted media, the Five Year Review does not include a PFOS/PFOA-related remedy evaluation. The impacted media identified in Section E includes only those impacted by the historic wood tar and petroleum contamination that was addressed in the remedy in the 2007 Interim Response Activity Plan (IRAP).**

**Section B: Facility/Property Subject to (Check all that apply):**

Facility regulated under Part 201 Part 201 Facility ID (if known):	<input checked="" type="checkbox"/>
Leaking Underground Storage Tank regulated pursuant to Part 213 Part 211/213. Facility ID, if known:	<input type="checkbox"/>
Oil or gas production and development regulated pursuant to Part 615 or 625	<input type="checkbox"/>
Licensed landfill regulated pursuant to Part 115	<input type="checkbox"/>
Licensed hazardous waste treatment, storage, or disposal facility regulated pursuant to Part 111	<input type="checkbox"/>
Consent Agreement or other legal agreement with the MDEQ	<input type="checkbox"/>

**Section C: Facility and Locational Information:**

Facility Name: Former Defense Fuel Supply Point	County: Delta
Street Address of Property: P Road	City/Village/Township: Escanaba
City: Escanaba State: MI Zip:	Town: Range: Section:
Property Tax ID (include all applicable IDs):	Quarter: Quarter-Quarter:
Status of submitter relative to the property (check all that apply):	Decimal Degrees Latitude: 45° 47' 28.85"N
Former Current Prospective	Decimal Degrees Longitude: 87° 3' 39.70"W
Owner <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Reference point for latitude and longitude:
Operator <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	Center of site <input checked="" type="checkbox"/> Main/front door <input type="checkbox"/>
	Front gate/main entrance <input type="checkbox"/> Other <input type="checkbox"/>
	Collection method:
	Survey <input type="checkbox"/> GPS <input type="checkbox"/> Interpolation <input checked="" type="checkbox"/>

**Request for DEQ Review of Response Activity Plan**

**Section D: Submitter Information:**

Entity/person requesting review: Air Force Civil Eng Center		
Contact Person (name and title): Kay Grosinske, Prog Mgr		
Submitter Address: 2261 Hughes Ave, Suite 121		
City: JBSA Lackland	State: TX	Zip: 78236-9821
Telephone: (210) 395-8272	E-Mail: kay.grosinske@us.af.mil	
Relationship of contact person to the submitter:		
Owner Name, if different from submitter:	Company: Hannahville Indian Community	
Address: N14911 Hannahville B-1 Road		
City: Wilson	State: MI	Zip: 49896
Telephone:	E-Mail:	

**Section E: Are/were the following present at the facility (Check all that apply):**

	Current	Previous	Unknown
Mobile or Migrating Non Aqueous Phase Liquids (NAPL)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil contamination above any residential criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil contamination above any non-residential criteria	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Soil aesthetic impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groundwater contamination above any residential criteria	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Groundwater contamination above any non-residential criteria	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Groundwater aesthetic impacts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Gas contamination above residential vapor intrusion (VI) screening levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil Gas contamination above non-residential VI screening levels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conditions immediately dangerous to life or health (IDLH)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire & Explosion hazards related to releases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contamination existing in drinking water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Imminent threat to drinking water supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impact to Surface Water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Surface Water Sediments above screening levels	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Section F: The following questions assist DEQ in evaluating this request.**

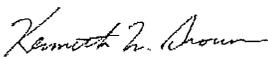
<b>Known or Suspected Contaminant(s) Type (Check all that apply):</b>			
Petroleum	<input checked="" type="checkbox"/>	Volatile Organic Compounds	<input checked="" type="checkbox"/>
Metals	<input type="checkbox"/>	Other	<input type="checkbox"/>
<b>Current Site Status (Check all that apply):</b>			
Undergoing property transfer	<input type="checkbox"/>	Active operations	<input type="checkbox"/>
Inactive operation	<input checked="" type="checkbox"/>		
<b>Current Property Use:</b>			
Residential	<input type="checkbox"/>	Vacant	<input type="checkbox"/>
Non-residential	<input type="checkbox"/>		
<b>Anticipated Property Use:</b>			
Residential	<input type="checkbox"/>		
Non-residential	<input checked="" type="checkbox"/>		
<b>Estimated Area of Contamination Addressed in Response Action Plan (Cumulative):</b>			
Currently undetermined	<input type="checkbox"/>	< 0.5 acre	<input type="checkbox"/>
> 0.5 acre	<input checked="" type="checkbox"/>		
<b>Migration:</b>			
	<b>Yes</b>	<b>No</b>	<b>Unknown</b>
Has contamination migrated beyond the property boundaries?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has the Notice of Migration been submitted?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Facility Investigation Status:</b>			
Ongoing	<input type="checkbox"/>	Complete	<input checked="" type="checkbox"/>

**Request for DEQ Review of Response Activity Plan**

<b>Facility Response Activity Status (Check all that apply):</b>			
None	<input type="checkbox"/>	IR Implemented	<input type="checkbox"/>
Response Activity Ongoing	<input checked="" type="checkbox"/>	Response Activity Completed	<input type="checkbox"/>
<b>Drinking Water Supply for Facility (Check all that apply):</b>			
Municipal	<input type="checkbox"/>	Private Well(s)	<input type="checkbox"/>
No Current Water Supply	<input checked="" type="checkbox"/>	Municipal Available	<input type="checkbox"/>
<b>On-site Well(s) (Check all that apply):</b>			
Drinking Water	<input type="checkbox"/>	Industrial/Commercial Production	<input type="checkbox"/>
Agricultural/Irrigation	<input type="checkbox"/>	No well on-site	<input checked="" type="checkbox"/>
Approximate Depth of Well(s):			
<b>Local Drinking Water Supply:</b>			
Is facility in a designated Wellhead Protection Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
Distance to nearest off-site drinking water well: 300 ft on neighboring DeGrand Private <input checked="" type="checkbox"/> Municipal <input type="checkbox"/>			
<b>Surface Water Bodies on or Adjacent to Facility (Check all that apply):</b>			
Wetlands	<input checked="" type="checkbox"/>	Ditch	<input type="checkbox"/>
Stream/River	<input type="checkbox"/>	Lake/Pond	<input checked="" type="checkbox"/>
Lake Michigan			
<b>Local Surface Water Bodies:</b>			
Distance to nearest wetland:	Ditch:	Stream/River:	Lake/Pond:
<b>Have other plans been submitted for this facility?</b>			
Facility Name, if different than this submittal:			
Date and Name of most recent submittal: First Five Year Review Report for DFSP Escanaba, Nov 2013			

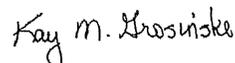
**Section G: Environmental Professional Signature:**

*With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief.*

Signature:  Date: 5/16/2019  
 Printed Name: Kenneth W. Brown  
 Company of Environmental Professional: AECOM  
 Address: 1555 N. Rivercenter Drive, Suite 214  
 City: Milwaukee State: WI Zip: 53212  
 Telephone: (414) 944-6192 E-mail address: Kenneth.brown@aecom.com

**Section H: Submitter Signature:**

*With my signature below, I certify that this plan and all related materials are true, accurate, and complete to the best of my knowledge and belief and I am legally authorized to sign for the submitter*

Signature:  Date: 5/16/2019  
 Printed name: Kay M. Grosinske  
 Title/Relationship of signatory to submitter: AFCEC Program Manager  
 Address: 2261 Hughes Ave., Suite 121  
 City: JBSA Lackland State: TX Zip: 78236-9821  
 Telephone: (210) 395-8272 E-Mail address: kay.grosinske@us.af.mil

This form and the Response Activity Plan should be submitted to the MDEQ Remediation & Redevelopment Division District Office for the county in which the property is located, unless the response activity is related to a facility that is regulated by another MDEQ Division. A district map is located at [www.michigan.gov/degrrd](http://www.michigan.gov/degrrd). If regulated by another division, contact should be made with that division for information on where to submit the form and plan.

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Robert Delaney, DSMOA Coordinator  
Geology and Defense Site Management Unit  
Superfund Section, Remediation Division

FROM: Carol H. Tracy, Senior Geologist  
Geology and Defense Site Management Unit  
Superfund Section, Remediation Division



DATE: August 16, 2019

SUBJECT: Review and Comments on the Draft Second Five-Year Review for the  
Former Defense Fuel Supply Point Site, Escanaba

We have reviewed the Draft Second Five-Year Review (FYR) for the Escanaba Former Defense Fuel Supply Point and provide the following comments. We consider the site remedy to be "Not Protective". Other comments involve the rearrangement of the draft FYR to move the discussions of new toxicity values and new criteria into Question B. New suggested wording is in bold font in the comments below. Wording that should be stricken is in strike out font.

1. Section I. Declaration Statement

The statement just above the signature block is inconsistent with the protectiveness statement later in the document. EGLE recommends that both the declaration and the protectiveness statements be revised. Per- and Polyfluoroalkyl (PFAS) has been identified in groundwater and surface water at the site above risk-based criteria. PFAS levels in Little Bay de Noc exceed ambient water quality standards for drinking water and fish consumption. Additional work is required to evaluate exposures – both through private drinking water wells, future municipal supplies, and fish consumption. Also, the evaluation of residential wells during 2015-2016 is considered insufficient by EGLE due to the relatively high laboratory detection levels by Accutest Laboratory, and the fact that only 6 PFAS compounds were tested for instead of the list of 24 compounds recommended by EGLE ([https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP\\_PFAS\\_621093\\_7.pdf](https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP_PFAS_621093_7.pdf).)

Another issue that affects protectiveness in the long-term, is the fact that Restrictive Covenants have not been placed on neighboring residential properties to ensure that contaminated groundwater is not used for drinking water.

2. Section II. Response Action Summary, Response Actions, End of Third Paragraph  
For clarification, we recommend adding one sentence to the end of the third paragraph: **"The Chemical-specific cleanup criteria concentrations are considered appropriate and relevant unless there are site-specific conditions that significantly differ from conditions on which the generic criteria are based. The Remedial Action Objectives (RAOs) for groundwater at this site were based on site-specific groundwater-surface water interface (GSI) criteria."**

3. Section II. Response Action Summary, Response Actions, Table of RAO Chemical-Specific Criteria  
The table should list all chemical specific RAO criteria, or should be clearly labeled and explained that the table only represents the exceptions to the Part 201 generic criteria, which are the compounds with site specific GSI criteria. Because some site specific GSI criteria were developed for the site, the generic 2018 GSI criteria should not be discussed here. Delete the third column with the heading 2018 GSI. Delete the last sentence of this section: ~~Generic groundwater-surface water criteria were revised by DEQ in 2018, and revised generic criteria for ethylbenzene, toluene, xylenes, 1,2,4-trand 1,3,5-trimethylbenzenes are lower than the site-specific criteria provided in the 2007 IRAP.~~ New toxicity values and exposure assumptions and criteria are to be discussed under Question B: "Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid." The discussion under Question B must focus on the significance of any new toxicity values and exposure assumptions that resulted in revised generic GSI criteria in 2018. The discussion in Question B must recommend whether or not the mixing zone determination (from which the site specific GSI criteria were calculated) must be reviewed and updated based on the new toxicity values.

It should be stated in this section that:

**A new group of contaminants Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) have been identified in groundwater and surface water at the site since the remedy was implemented. These compounds were not included in the RAOs.**

4. Section II, Response Action Summary, Status of Implementation  
Add a paragraph to this section describing the current conditions at the site. State whether all buildings are removed, all above ground storage tanks and their foundations removed, monitoring wells abandoned, slurry wall breached to allow groundwater flow, whether areas of clean soil fill are stable and vegetated, and whether there is any current use of the site – commercial, industrial or residential.
5. Section II, Response Action Summary, LUC Summary Table  
The Land Use Control (LUC) Summary Table lists only the LUCs that have been implemented. Another row and column should be added so that the outstanding LUCs which have not yet been implemented can also be listed. These outstanding LUCs affect the site protectiveness.

6. Section IV, Five-Year Review Process, Data Review, First Paragraph, First Sentence  
For clarification, revise first sentence as follows: ~~Although~~ No samples were collected during this FY Review period **other than for PFAS.**
7. Section IV, Five-Year Review Process, Data Review, Last Paragraph Before Methane Table.  
Methane concentrations at the site can be discussed here, but the discussion of the change in criteria for methane in groundwater should be moved to Question B. Clarify that the third column represents the **Revised** Flammability and Explosivity Screening Level **(2013)**
8. Section V, Technical Assessment, Question A, Question A Summary, 4<sup>th</sup> Paragraph  
Clarify as follows: As of the most recent sampling in 2010, benzene and 1,2,4-trimethylbenzene impacted groundwater exceeded residential generic criteria on one of the adjacent private properties. (Be specific here, did it exceed **generic drinking water criteria or the site specific GSI which was used as the RAO?**) Methane-impacted groundwater exceeded the flammability and explosive screening level of **520 mg/l, which was used as the RAO for the Interim Remedial Action Plan (IRAP)** on both adjacent properties. **However, a soil gas investigation for methane gas in 2012 and 2013 did not identify methane in soil vapor.**
9. Section V, Technical Assessment, Question B, Question B Summary, First Paragraph and Table  
This section should not focus on new generic criteria, but rather must cover new toxicity values, and review of the previous mixing zone determination. If there are new toxicity values for the contaminants in the table, it may be appropriate to recalculate and update the mixing zone/site specific GSI criteria determination for the site. This should be stated.
10. Section V, Technical Assessment, Question B, Question B Summary, Methane  
Following the paragraph on Michigan's Flammability and Explosivity Screening Level (FESL) for methane, move the following methane paragraph and concentration table to this section:  
**A change in the methane in groundwater criteria was promulgated by the State of Michigan late in 2013. The change resulted in an increase in the flammability/explosivity screening level (FESL) for methane from 520 ug/L to 28,000 ug/L. The methane concentrations detected in groundwater samples collected during the Phase 3 sampling events (2010) do not exceed the revised criteria. A comparison of the phase 3 sample methane results and the new FESL is provided below. Include the table of methane concentrations and criteria.**
11. Section V, Technical Assessment, Question B, Question B Summary  
Since some of the generic criteria for GSI and the methane FESL have changed, the following sentence should be deleted: ~~No changes to exposure pathways or risk-~~

~~assessment methods have occurred, have been identified, or are relevant to the historical contaminants in the last five years.~~ Add instead a discussion on PFAS: **A new group of contaminants PFAS, have been identified in groundwater and surface water at the site. Michigan has promulgated groundwater and surface water criteria for two PFAS compounds, Perfluorooctanesulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA). Sampling conducted in late 2015 identified PFOS and PFOA at concentrations exceeding the EPA Lifetime Health Advisory for drinking water and Michigan Drinking Water Cleanup Criteria (.07 ug/L for PFOS and PFOA, when found individually or in combined concentrations) in groundwater at all three release areas listed above and also exceeding the GSI Criteria.**

~~Subsequent Sampling of seven nearby residential drinking water wells from December 2015 to March 2016 confirmed there is currently no unacceptable exposure through the drinking water pathway is inconclusive for locations GW-008 through GW-012, GW-14, GW-15, GW-16 and GW-18 due to the relatively high laboratory detection levels by Accutest Laboratory, and the fact that only 6 PFAS compounds were tested for instead of the list of 24 compounds recommended by EGLE ([https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP\\_PFAS\\_621093\\_7.pdf](https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP_PFAS_621093_7.pdf).)~~ Since the PFAS source areas have not been remediated, EGLE Staff advise that the Air Force resample these water supply wells on an annual schedule. This should be included under the Issues and Recommendations Section of the FYR.

**Surface water and sediment were sampled in Little Bay de Noc in the Spring of 2017. PFOS was detected in Little Bay de Noc at concentrations exceeding the Michigan Human Noncancer Value (HNV) for surface water used as a drinking water source. PFOA was detected in Little Bay de Noc at concentrations below the Michigan HNV. PFOS and PFOA were detected in sediment below the calculated screening levels. There are no Michigan cleanup criteria for PFAS in sediment. (Michigan soil cleanup criteria do not apply to sediment.) PFOA and PFOS will be further addressed following the same CERCLA process as established for other contaminants.**

#### Residential Water Supply PFAS Results

Sample #	Analytical Method	Lab	Sample Date	Results	LOD/MDL
GW-13S split	537M	Maxxam	1/14/2019	ND	.0019 - .0053 ug/L (2 - 5 ppt)
GW-008	537M	Accutest	12/10/2015	ND	.01 - .033 ug/L (10 - 33 ppt) *
GW-009	537M	Accutest	12/10/2015	ND	.01 - .032 ug/L (10 - 32 ppt) *
GW-10	537M	Accutest	1/12/2016	ND	.01 - .031 ug/L (10 - 31 ppt) *
GW-11	537M	Accutest	1/12/2016	ND	.01 - .032 ug/L (10 - 32 ppt) *

GW-12	537M	Accutest	1/12/2016	ND	.01 - .031 ug/L (10 - 31 ppt) *
GW-13	537M	Accutest	1/14/2016	ND	.01 - .031 ug/L (10 - 31 ppt) *
GW-14	537M	Accutest	1/14/2016	ND	.01 - .031 ug/L (10 - 31 ppt) *
GW-15	537M	Accutest	1/27/2016	ND	.01 - .031 ug/L (10 - 31 ppt)
GW-16	537M	Accutest	1/27/2016	ND	.01 - .031 ug/L (10 - 31 ppt) *
GW-17	537M	Accutest	3/2/2016	ND	.01 - .015 ug/L (10 - 15 ppt)
GW-18	537M	Accutest	3/2/2016	ND	.01 - .016 ug/L (10 - 16 ppt)
GW-17S Split	537M	Vista	3/2/2016	PFOA .000811 ug/L	.004 ug/L (4 ppt)

ND – Non Detect at the reported detection level

LOD – Level of Detection

MDL – Method Detection Level

ug/L – micrograms per liter

ppt – parts per trillion

\* - Elevated Detection Level

## 12. Section VI. Issues/Recommendations

Add another issue/recommendation regarding the need to evaluate the exposure pathways for PFAS. **PFAS has been identified in groundwater and surface water. Groundwater at the site is restricted and will not be used for drinking water. However, several private water supply wells exist adjacent to the site. And the use of groundwater on those properties has not been restricted. Those land use controls (LUCs) must be implemented. A milestone date should be set for completion of the LUCs by 2021. Because source areas have not been addressed, the residential water supply wells should be resampled without delay, and on an annual schedule. This first sample should have a milestone completion date of early 2021.**

**PFAS in surface water may also bioaccumulate in fish, resulting in a fish consumption advisory or restriction. The Air Force must sample fish immediately to determine if there is an imminent and substantial endangerment to human health by consumption of fish.**

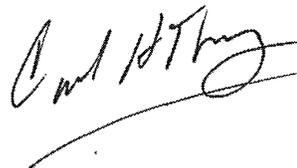
**Additional investigation is required to determine if PFAS in surface water will affect current or future municipal water supplies. Additional work is required at the site to stop the discharge of PFAS contaminants to surface water. Because of the PFAS concentrations in surface water and groundwater, the current site remedy is not protective.**

### Protectiveness Statement(s)

The protectiveness determination should be changed from ~~Will be Protective~~ to **Not Protective**. The Protectiveness Statement should be rewritten and clarified as follows: ~~The remedy at DFSP is protective of the current designated use for limited nonresidential purposes, and LUCs will be in place indefinitely to prevent uses that are not consistent with the RAOs specified in the IRAP.~~ Defense Fuel Supply Point is characterized by BTEX and VOCs, which exceed the cleanup criteria in groundwater **as well as PFAS, which exceed cleanup criteria for drinking water and surface water.** The remedy included **VOC** contaminant mass removal, groundwater monitoring and LUCs. All remedial actions **pertaining to VOC and SVOC contamination** at the site have been completed and groundwater monitoring has been discontinued with EGLE's consent. COCs in groundwater have met the restricted use criteria in accordance with the IRAP, but remain above Part 201 residential drinking water criteria. **The PFAS contamination in groundwater and surface water identified in 2015 requires further investigation.** Land and groundwater use restrictions control applicable exposure pathways. When LUCs are placed on the deeds of the adjacent private properties, **and when the PFAS contamination and exposure pathway have been fully evaluated and all unacceptable exposures have been addressed,** the site **will may** be eligible for limited nonresidential restricted site closure.

This concludes our review of the Draft FYR Review. If you have any questions or concerns about this memo please feel free to contact me at 517-284-5161.

cc: Mr. John Bradley, EGLE



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

INTEROFFICE COMMUNICATION

TO: Robert Delaney, DSMOA Coordinator  
Geology and Defense Site Management Unit  
Superfund Section, Remediation Division

FROM: Carol H. Tracy, Senior Geologist  
Geology and Defense Site Management Unit  
Superfund Section, Remediation Division



DATE: August 16, 2019

SUBJECT: Review and Comments on the Draft Second Five-Year Review for the  
Former Defense Fuel Supply Point Site, Escanaba

We have reviewed the Draft Second Five-Year Review (FYR) for the Escanaba Former Defense Fuel Supply Point and provide the following comments. We consider the site remedy to be "Not Protective". Other comments involve the rearrangement of the draft FYR to move the discussions of new toxicity values and new criteria into Question B. New suggested wording is in bold font in the comments below. Wording that should be stricken is in strike out font.

1. Section I. Declaration Statement

The statement just above the signature block is inconsistent with the protectiveness statement later in the document. EGLE recommends that both the declaration and the protectiveness statements be revised. Per- and Polyfluoroalkyl (PFAS) has been identified in groundwater and surface water at the site above risk-based criteria. PFAS levels in Little Bay de Noc exceed ambient water quality standards for drinking water and fish consumption. Additional work is required to evaluate exposures – both through private drinking water wells, future municipal supplies, and fish consumption. Also, the evaluation of residential wells during 2015-2016 is considered insufficient by EGLE due to the relatively high laboratory detection levels by Accutest Laboratory, and the fact that only 6 PFAS compounds were tested for instead of the list of 24 compounds recommended by EGLE ([https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP\\_PFAAS\\_621093\\_7.pdf](https://www.michigan.gov/documents/deq/deq-tou-wrd-Analytes-IPP_PFAAS_621093_7.pdf).)

Another issue that affects protectiveness in the long-term, is the fact that Restrictive Covenants have not been placed on neighboring residential properties to ensure that contaminated groundwater is not used for drinking water.

2. Section II. Response Action Summary, Response Actions, End of Third Paragraph  
For clarification, we recommend adding one sentence to the end of the third paragraph: “The Chemical-specific cleanup criteria concentrations are considered appropriate and relevant unless there are site-specific conditions that significantly differ from conditions on which the generic criteria are based. **The Remedial Action Objectives (RAOs) for groundwater at this site were based on site-specific groundwater-surface water interface (GSI) criteria.**”

3. Section II. Response Action Summary, Response Actions, Table of RAO Chemical-Specific Criteria  
The table should list all chemical specific RAO criteria, or should be clearly labeled and explained that the table only represents the exceptions to the Part 201 generic criteria, which are the compounds with site specific GSI criteria. Because some site specific GSI criteria were developed for the site, the generic 2018 GSI criteria should not be discussed here. Delete the third column with the heading 2018 GSI. Delete the last sentence of this section: ~~Generic groundwater-surface water criteria were revised by DEQ in 2018, and revised generic criteria for ethylbenzene, toluene, xylenes, 1,2,4-trand 1,3,5-trimethylbenzenes are lower than the site specific criteria provided in the 2007 IRAP.~~ New toxicity values and exposure assumptions and criteria are to be discussed under Question B: “Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of the remedy selection still valid.” The discussion under Question B must focus on the significance of any new toxicity values and exposure assumptions that resulted in revised generic GSI criteria in 2018. The discussion in Question B must recommend whether or not the mixing zone determination (from which the site specific GSI criteria were calculated) must be reviewed and updated based on the new toxicity values.

It should be stated in this section that:

**A new group of contaminants Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) have been identified in groundwater and surface water at the site since the remedy was implemented. These compounds were not included in the RAOs.**

4. Section II, Response Action Summary, Status of Implementation  
Add a paragraph to this section describing the current conditions at the site. State whether all buildings are removed, all above ground storage tanks and their foundations removed, monitoring wells abandoned, slurry wall breached to allow groundwater flow, whether areas of clean soil fill are stable and vegetated, and whether there is any current use of the site – commercial, industrial or residential.
5. Section II, Response Action Summary, LUC Summary Table  
The Land Use Control (LUC) Summary Table lists only the LUCs that have been implemented. Another row and column should be added so that the outstanding LUCs which have not yet been implemented can also be listed. These outstanding LUCs affect the site protectiveness.

6. Section IV, Five-Year Review Process, Data Review, First Paragraph, First Sentence

For clarification, revise first sentence as follows: Although ~~n~~No samples were collected during this FY Review period **other than for PFAS**.

7. Section IV, Five-Year Review Process, Data Review, Last Paragraph Before Methane Table.

Methane concentrations at the site can be discussed here, but the discussion of the change in criteria for methane in groundwater should be moved to Question B. Clarify that the third column represents the **Revised** Flammability and Explosivity Screening Level **(2013)**

8. Section V, Technical Assessment, Question A, Question A Summary, 4<sup>th</sup> Paragraph

Clarify as follows: As of the most recent sampling in 2010, benzene and 1,2,4-trimethylbenzene impacted groundwater exceeded residential generic criteria on one of the adjacent private properties. (Be specific here, did it exceed **generic drinking water criteria or the site specific GSI which was used as the RAO?**) Methane-impacted groundwater exceeded the flammability and explosive screening level of **520 mg/l, which was used as the RAO for the Interim Remedial Action Plan (IRAP)** on both adjacent properties. **However, a soil gas investigation for methane gas in 2012 and 2013 did not identify methane in soil vapor.**

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This section should not focus on new generic criteria, but rather must cover new toxicity values, and review of the previous mixing zone determination. If there are new toxicity values for the contaminants in the table, it may be appropriate to recalculate and update the mixing zone/site specific GSI criteria determination for the site. This should be stated.

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Following the paragraph on Michigan's Flammability and Explosivity Screening Level (FESL) for methane, move the following methane paragraph and concentration table to this section:

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Since some of the generic criteria for GSI and the methane FESL have changed, the following sentence should be deleted: ~~No changes to exposure pathways or risk-~~

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**Surface water and sediment were sampled in Little Bay de Noc in the Spring of 2017. PFOS was detected in Little Bay de Noc at concentrations exceeding the Michigan Human Noncancer Value (HNV) for surface water used as a drinking water source. PFOA was detected in Little Bay de Noc at concentrations below the Michigan HNV. PFOS and PFOA were detected in sediment below the calculated screening levels. There are no Michigan cleanup criteria for PFAS in sediment. (Michigan soil cleanup criteria do not apply to sediment.) PFOA and PFOS will be further addressed following the same CERCLA process as established for other contaminants.**

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This concludes our review of the Draft FYR Review. If you have any questions or concerns about this memo please feel free to contact me at 517-284-5161.

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