UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I

In the Matter of: United States Air Force, Respondent. Former Pease Air Force Base, The "Facility" Proceeding Under Section 1431(a) of the Safe Drinking Water Act, 42 U.S.C. § 300i(a)	**Docket No.: SDWA-01-2015-0061** **ADMINISTRATIVE ORDER FOR RESPONSE ACTION**

ADMINISTRATIVE ORDER
FORMER PEASE AIR FORCE BASE ESPONSE ACTIONS

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I. JURISDICTION

1. This Administrative Order (Order) is issued to Respondent United States Air Force pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 1431(a) of the Safe Drinking Water Act (SDWA), 42 U.S.C. § 300i(a). The Administrator of EPA has delegated the authority to take these actions to the Regional Administrator of EPA Region I by EPA Delegation No. 9-17 (1200-TN-350) dated May 11, 1994.

2. In the interests of environmental protection, public health and welfare, EPA hereby orders Respondent to undertake all actions required by this Order.

II. STATE COORDINATION

3. Pursuant to Section 1431 of the SDWA, 42 U.S.C. § 300i, EPA has consulted with the State of New Hampshire and local authorities on this matter.

III. PARTIES BOUND

4. This Order shall apply to and be binding upon the Respondent, its successors and assigns and upon its affiliated organizations, agents, contractors, and consultants.

IV. PURPOSE

5. This Order requires the Respondent to undertake Emergency Response Actions and Feasibility Studies, Designs and Remedial Actions to abate the threat to public health presented by the presence in and likely continued entry of contamination of an Underground Source of Drinking Water from past and present sources of Contaminants at and emanating from

Former Pease Air Force Base in Portsmouth, New Hampshire (The Facility). The required actions are described more fully in the Statement of Work (SOW) attached to this Order as Appendix A, which is enforceable hereunder.

V. DEFINITIONS

6. All terms, not otherwise defined herein, shall have their ordinary meanings unless defined in the SDWA, in which case the SDWA definition shall control.

a. "Contaminant" shall mean "any physical, chemical, biological, or radiological substance or matter in water." See 42 U.S.C. § 300 (6). For purposes of this Order, this definition includes "unregulated contaminants" within the meaning of the Unregulated Contaminant Monitoring Rule (UCMR), 77 Fed. Reg. 26072 (May 2, 2012), requiring analysis of substances which are suspected to be present in drinking water but that do not yet have health-based standards set under the SDWA.

b. "Contractor" shall mean any person, including contractors, subcontractors, or agents, retained or hired by Respondent to undertake any Work under this Order.

c. "Day" shall mean a calendar day, unless otherwise specified.

d. "EPA" or "the Agency" shall mean the U.S. Environmental Protection Agency.

e. "Facility" shall mean the Former Pease Air Force Base. The Facility is generally depicted on the figure attached to this Order as Appendix B.

f. "NHDES" shall mean the New Hampshire Department of Environmental Services.

g. "Order" shall mean this SDWA § 1431 Administrative Order, any attachments or appendices to this Order, and all documents that are to be produced or submitted pursuant to this Order. All attachments or appendices to this Order, and all documents that are to be produced or submitted pursuant to this Order are, after being approved by EPA, incorporated into this Order, and shall be enforceable hereunder.

h. "PFCs" shall mean perfluorinated compounds, which are man-made compounds with multiple carbon-fluorine bonds. PFCs. PFCs break down very slowly in industrial use and in the environment and include perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS).

i. "Private Drinking Water Supply Well" shall mean a system used by individual residents, or one that serves less than twenty five persons per year from a well or other surface or ground water source and is not otherwise a Public Water System.

j. "Provisional Health Advisory" or "PHA" shall mean "values [that] are developed [by EPA] to provide information in response to urgent or rapidly developing drinking water contamination. They reflect reasonable, health-based hazard concentrations above which action should be taken to reduce exposure to unregulated contaminants in drinking water (Emerging Contaminants Fact Sheet:

PFOS and PFOA, March 2014, EPA 505-F-14-001). They are updated as additional information becomes available and can be evaluated.

k. "Public Water System" or "PWS" shall mean a system that provides piped drinking water for human consumption, if such system has at least fifteen service connections or regularly serves an average of at least twenty-five individuals daily at least 60 days out of the year, within the meaning of Section 1401(4) of the SDWA, 42 U.S.C. § 300f(4), and 40 C.F.R.§ 141.2.

l. "Respondent" shall mean the United States Air Force.

m. "Underground source of drinking water" or "USDW" shall mean an aquifer or its portion:

(i) (A) which supplies any public water system, or
(B) which contains a sufficient quantity of ground water to supply a public water system; and either
(1) currently supplies drinking water for human consumption, or
(2) contains fewer than 10,000 milligrams per liter total dissolved solids; and
(ii) which is not an exempted aquifer. See 40 C.F.R. § 144.3

n. "Vicinity of the Facility" includes an area within an approximate one-mile radius extending from the outer edges of the Facility.

o. Work shall mean all tasks and activities required by this Order or related to the performance of tasks and activities required by this Order.

VI. FINDINGS OF FACT

7. Respondent United States Air Force is a department of the United States.

8. The Facility is located in the towns of Newington and Greenland and the City of

Portsmouth, New Hampshire. The Facility occupies approximately 4300 acres of land and was established in 1951 by the Air Force as a Strategic Air Command (SAC) facility. Its mission was to develop and maintain operational capacity to permit the conduct of strategic warfare in the event of war.

9. Through 2001, PFCs were used in the manufacture of Aqueous Film Forming Foam (AFFF). AFFF containing PFCs has been used to extinguish and prevent flammable liquid fires (for example, hydrocarbon fuels), such as fires involving gas tankers, oil refiners and aviation fuel spills. AFFF containing PFCs were used at the Facility for extinguishing and preventing petroleum fires and during fire-fighting training activities. It was also used in the fire suppression systems at several of the Facility buildings in the event of a fire or spill.

10. Pease Air Force Base (the Facility) was added to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §§ 9601 et seq. (CERCLA) National Priorities List (NPL) on February 21, 1990 and was closed in 1991.

11. The New Hampshire Air National Guard continues its presence at the Facility, serving primarily as an airborne refueling operation.

12. On December 12, 1990, the Air Force and the United States Environmental Protection Agency entered into a Federal Facility Agreement under which the Air Force agreed to remediate contamination at the Pease Air Force Base under CERCLA and RCRA.

13. In 1991, the bulk of the Facility other than that property retained by the Air National Guard, was transferred to the Pease Development Authority. The transferred land was renamed the Pease International Tradeport ("Tradeport") and contains an active runway and

associated taxiways for civilian use. It also contains a commercial business park. The Tradeport contains two day care centers.

14. The Facility contains three Public Water Supply Wells drawing water from the same USDW: the Haven well; the Harrison well; and the Smith well. In addition, two wells, the Collins well and Portsmouth #1 well, exist adjacent to and down gradient of the Haven well and the Facility.

15. On April 16, 2014, the Air Force sampled the Haven, Harrison and Smith wells for PFCs. The Haven well sampling detected the presence of PFOS at 2.5 micrograms per liter, which is 12.5 times higher than EPA's Provisional Health Advisory of 0.2 micrograms per liter. The Harrison and Smith wells also both showed the presence of PFOS and PFOA.

16. Due to the high levels of PFCs, the Haven well, which was a water supply for 8,000 persons was shut down on May 12, 2014. The closure of the Haven Supply Well resulted in a 46% decrease in the water supply for the Tradeport and a 10% decrease in the water supply for the City of Portsmouth.

17. The Harrison and Smith wells continue to supply drinking water to the Tradeport, despite the current presence of PFOA and PFOS in the drinking water.

18. The Haven well is hydraulically up-gradient of the Harrison and Smith wells. As a result of its highly permeable soil characteristics, the aquifer at the Facility is very susceptible to contamination through its recharge zones and has strata with properties that allow contaminants to migrate quickly though them.

19. The high levels of PFC contamination detected in the Haven well are migrating and will continue to migrate towards the Harrison and Smith wells and further degrade the Pease Aquifer as an USDW.

20. The migration of PFOS and PFOA also threatens two other USDWs south and downgradient of the Haven well: the Collins and the Portsmouth #1 wells. The Harrison, Smith Collins and Portsmouth #1 well field are collectively known as the Pease Aquifer southern well field. Samples taken from the Smith, Harrison, Collins and Portsmouth #1 wells indicate the presence of PFOS and PFOA in all four wells.

21. The presence of PFOS and PFOA in the Haven, Smith, Harrison, Collins and Portsmouth #1 wells that draw from the Pease aquifer and southern well field threatens their future use as USDW and may present a risk to the health of persons who are or may be users of water supplies from the aquifer. Three of these wells provide drinking water to the Tradeport and other developed portions of the Facility and have been and can continue to be used to supplement the City of Portsmouth water supply.

22. Some workers at the Tradeport have likely been consuming drinking water contaminated with PFOA and PFOS above the Provisional Health Advisory level for an extended period of time and may be at an elevated risk from any future exposure. As noted below, PFOS and PFOA have a long half-life ranging from two to nine years, depending on the study. Continued exposure could increase body burdens to levels that would result in adverse outcomes.

23. The Air Force collected PFC ground water samples from selected existing Facility monitoring wells to establish an initial estimate of the potential extent of PFC contamination within the Pease aquifer. PFCs were detected in all ground water hydro-stratigraphic units, including the shallow fractured bedrock, deep fractured bedrock, lower sand, and upper sand strata with the highest concentrations in the central portion of the Aquifer where the Haven well is located.

24. Air Force groundwater flow calculations based on a simple equation estimate that PFCs could migrate in the lower sand hydro-stratigraphic unit from the Haven well area to the Harrison well in approximately 6.3 years. This simple equation did not take into account critical factors that may change the estimate such as potentially faster ground water velocities within bedrock fractures. Such fractures may result in shorter contaminant travel times to the southern well field.

25. The Air Force's Draft December 2014 Preliminary Assessment identified nineteen areas where AFF containing PFOA and PFOS were released. None of these areas have yet been studied by the Air Force. These uninvestigated releases may present additional threats to the Portsmouth aquifer, which is a current and future USDW.

26. Design and construction of a water treatment plant requires a significant amount of time to complete. Design and construction must commence immediately to: limit the further degradation of the Pease Aquifer, a USDW; eliminate the existing and potential future ingestion of PFCs by persons; commence restoration of the Portsmouth aquifer; and protect the health of persons who are or may be users of this USDW.

27. The presence of PFOA and PFOS at the Facility is information that was not known to the EPA or the Air Force or reasonably available on December 21, 1990.

28. In January of 2014, the US Air Force issued a report presenting the concentrations of PFOA and PFOS in groundwater samples taken from monitoring wells located at Site 8, the Fire Department Training Area-2. The results showed concentrations of PFOS and PFOA in groundwater above the PHA with the highest concentration detected at 95 micrograms per liter for PFOS and 120 micrograms per liter for PFOA.

29. On September 11, 2014, PFOS was detected above PHA in one residential well, which is located approximately 2,800 feet to the northeast and down gradient of the Site 8 source area.

VII. ENDANGERMENT AND RESPONSE

30. In January of 2009, the EPA Office of Water established Provisional Health Advisories (PHAs) of 0.4 micrograms per liter for PFOA and 0.2 micrograms per liter of PFOS to protect against the potential risk from short-term exposure of these contaminants in drinking water. Provisional Health Advisories are developed by EPA to provide information in response to an urgent or rapidly developing drinking water contamination situation. They reflect reasonable, health-based hazard concentrations above which action should be taken to reduce exposure to unregulated contaminants in drinking water (Emerging Contaminants Fact Sheet: PFOS and PFOA, March 2014, EPA 505-F-14-001).

31. PFOS and PFOA have a long half-life ranging from two to nine years, depending on the study. Continued exposure could increase body burdens to levels that would result in adverse outcomes.

32. Both PFOA and PFOS have a high affinity for binding to B-lipoproteins and liver fatty acid-binding protein. Several studies have shown that these compounds can interfere with fatty acid metabolism and may deregulate metabolism of lipids and lipoproteins.

33. Studies indicate that continued exposure to low levels of PFCs in drinking water may result in adverse health effects.

34. Acute and intermediate-duration studies on rodents have raised concerns about potential developmental, reproductive and other systemic effects of PFOS and PFOA.

35. The ingestion of PFOA-contaminated water was found to cause adverse effects on mammary gland development in mice.

36. The detection of PFOS and PFOA in groundwater samples at the Facility demonstrates the release or threat of release of contaminants at and from the Facility.

VIII. CONCLUSIONS OF LAW

Based on the foregoing, EPA makes the following conclusions of law:

37. Respondent United States Air Force is a "person" as that term is defined in § 1401(12) of the SDWA, 42 U.S.C. § 300f(12).

38. PFOA and PFOS are "contaminants" as that term is defined in § 1401(6) of SDWA, 42 U.S.C. § 300f(6).

39. The ground water beneath or in the Vicinity of the Facility is an "underground source of drinking water (USDW) as that term is defined at 40 CFR § 144.3.

40. PFOS and PFOA are contaminants present in or likely to enter the underground source of drinking water that may present an imminent and substantial endangerment to the health of persons, within the meaning of § 1431(a) of SDWA, 42 U.S.C. § 300i(a).

41. Respondent has caused or contributed to the endangerment described above.

42. This Order and the actions required by this Order are necessary to prevent further release or threat of release of contaminants and to protect the health of persons who are or may be users of the Pease aquifer under or in the Vicinity of the Facility.

43. NHDES and the local authorities have not undertaken all actions required by this Order.

44. EPA has consulted with NHDES and the local authorities on the information on which this Order is based. The actions required by this Order are consistent with requests for actions made by NHDES and the local authorities.

45. The response actions will consist of Respondent's implementation of this Order including the Scope of Work appended to this Order. The Scope of Work is designed to prevent and protect against harm to the health of persons that may be caused from the release or threat of release of contaminants.

46. Based on the endangerment described herein, the response actions required by this Order are necessary to protect the health of persons who are or may be users of the USDW in the Vicinity of the Facility.

47. All requisite conditions have been satisfied for EPA action under § 1431(a) of the SDWA, 42 U.S.C in 42 U.S.C. § 300i(a).

IX. ORDER

Based on EPA's jurisdiction, Findings of Fact Conclusions of Law set forth above, the Administrative Record supporting issuance of this Order, and in order to abate or prevent any imminent and substantial endangerment to the health of persons, the Respondent is **ORDERED** to perform all actions required by the terms and conditions of this Order.

48. Respondent must conduct the following actions, as further specified in the Statement of Work attached to this Order:

49. All Work conducted under this Order shall meet or exceed the substantive standards of New Hampshire law that are more stringent than federal law.

50. Respondent shall conduct all response actions as required by the Statement of Work attached to this Order, and any modifications thereto made by EPA in accordance with Section XXXIII of this Order.

X. DESIGNATION OF SUPERVISING CONTRACTOR AND PROJECT COORDINATOR

51. Within **seven (7) days** after the effective date of this Order, the Respondent shall retain the services of a qualified and experienced Supervising Contractor for the purpose of performing the work required by this Order in accordance with the terms and conditions of the Scope of Work. Within the same **seven (7) day** period, the Respondent shall notify EPA in writing of the name, address, and qualifications of the proposed supervising contractor and the

name and telephone number of the supervising contractor's primary contact person. The Respondent shall also notify EPA of the identity and qualifications of any other contractor(s) or subcontractor(s) to be used at the Site at least **seven (7) days** in advance of their performing any work under this Order.

52. Respondent shall provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants retained in connection with this Order within **seven (7) days** after the Order's effective date or of such retention, whichever is later. The Respondent shall ensure that all such contractors, subcontractors, laboratories and consultants will perform all Work in conformity with the SDWA, and the terms and conditions of this Order and Scope of Work. Respondent shall be responsible for ensuring that its contractors and subcontractors perform the Work in accordance with this Order.

53. Within **seven (7) days** after the effective date of this Order, the Respondent shall designate a Project Coordinator who shall be responsible for administration of all of the Respondent's actions called for by this Order, and shall submit the designated coordinator's name, address, and telephone number to EPA. EPA will deem the project coordinator's receipt of any notice or communication from EPA relating to this Order as receipt by the Respondent.

XI. NOTICE OF INTENT TO COMPLY

54. Respondent shall provide, within seven (7) days after the effective date of this Order, written notice to EPA stating whether it will comply with the terms of this Order. If Respondent does not unequivocally commit to perform the work required by this Order, Respondent shall be deemed to have violated this Order and to have failed or refused to comply

with this Order. The absence of the receipt of a response by EPA to the notice required by this paragraph shall not be deemed to be acceptance of Respondent's assertions related to this Order.

XII. EPA TECHNICAL PROJECT COORDINATOR

55. The EPA Technical Project Coordinator (TPC) will administer EPA's responsibilities and receive all written notices, reports, plans and other documents required by this Order. EPA's TPC under this Order will be Michael Daly. All submissions required by this Order shall be sent to EPA's TPC at the following address:

Attention: Pease Technical Project Coordinator
Mr. Michael Daly
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code: OSRR7-3
Boston, MA 02109-3912

56. EPA's TPC shall have the authority to modify the Scope of Work in writing after consultation with EPA's Director of the Office of Site Remediation and Restoration. Absence of the TPC from the Site shall not be cause for stoppage of work by the Respondent unless specifically directed by the TPC.

XIII. WORK TO BE PERFORMED; COMPLETION OF WORK

57. Immediately after EPA approval of Respondent's retention of the supervising contractor under Section XI of this order, or at any other time should Respondent's proposed supervising contractor not be approved by EPA, the Respondent shall commence the Work. All Work performed by the Respondent shall be conducted in accordance with SDWA, applicable EPA guidance documents provided by EPA, and the provisions of this Order including any

standards, specifications, and time schedules contained in the Scope of Work or specified by the TPC.

58. Within forty-five (45) days after completing all work required under this Order, the Respondent shall submit for EPA approval a Completion of Work Report summarizing the activities conducted pursuant to the Scope of Work. The Completion of Work Report shall document in detail that all Work required by this Order has been completed to the satisfaction of EPA and shall include the categories of information and conform to the requirements specified in the Scope of Work. The supervising contractor shall certify in writing that Work has been completed in full satisfaction of the requirements of this Order. This certification shall also be signed by the Respondent.

59. When EPA determines that all Work has been fully performed in accordance with this Order, and that all goals and objectives of this Order and the Scope of Work have been satisfied, EPA will provide written notice to the Respondent. If EPA determines that all Work has not been completed in accordance with the provisions of this Order, it will so notify the Respondent and provide a list of the tasks remaining and a schedule for their completion. The Respondent shall perform all remaining tasks and shall submit an amended Completion of Work Report in accordance with the EPA notice. If EPA determines that the remaining tasks have not been completed in accordance with the provisions of the EPA notice and this Order, the Respondent shall be in violation of this Order.

60. EPA's issuance of the notice referred to in the paragraph immediately above shall not preclude it from later determining, based upon new information or otherwise, that the Respondent has not completed all response activities in accordance with the provisions of this Order.

XIV. SUBMISSIONS REQUIRING AGENCY APPROVAL AND RESPONDENT'S OBLIGATION TO PROCEED

61. After review of any deliverable, plan, report or other item (submission) that the Respondent is required to submit for review and approval pursuant to this Order and Statements of Work, EPA may: (i) approve the submission; (ii) conditionally approve the submission with required modifications; (iii) disapprove the submission and notify the Respondent of deficiencies; or (iv) disapprove the submission and modify the deliverable, plan, report, or other item itself to cure any deficiencies. In the event EPA approves or conditionally approves the submission, or disapproves and modifies the submission itself, the Respondent shall perform all actions required by the submission, as approved, conditionally approved, or modified by EPA.

62. Upon receipt of a notice of disapproval with deficiencies ((iii) above), the Respondent shall correct the deficiencies and resubmit the submission within **seven (7) days** or such other time period specified in the notice of disapproval. Notwithstanding a notice of disapproval, the Respondent shall proceed to take any action required by any non-deficient portion of the submission. If EPA does not approve the submission as resubmitted, Respondent shall be in violation of the Order.

63. For each submission provided to EPA, the Respondent shall submit such copies as specified by the TPC. Any deliverable, plan, or report submitted to EPA pursuant to this Order shall be dated and shall include, in a prominent location in the document, the following disclaimer: "Disclaimer: This document has been prepared pursuant to a government administrative order (U.S. EPA Region I SDWA Docket No. 01-2015-0061) and is subject to approval by the U.S. Environmental Protection Agency. The opinions, findings, and conclusions expressed are those of the authors and not those of the U.S. Environmental Protection Agency." In addition, any such deliverable, plan, or report that has not received final approval from EPA shall be marked "Draft" on each page. The Respondent shall provide copies of all deliverables to the New Hampshire Department of Environmental Services (DES). EPA will consult with the DES in its review of each major deliverable; however, EPA retains the authority to approve or disapprove any of the deliverables.

XV. INCORPORATION AND ENFORCE ABILITY OF DOCUMENTS

64. The Statements of Work and all other appendices or attachments to this Order shall be deemed incorporated into, and made an enforceable part of, this Order. Upon approval by EPA, all contracts, deliverables, plans, reports, specifications, schedules, or other items required by or developed under this Order shall be deemed incorporated into, and made an enforceable part of, this Order. In the event of conflict between this Order and any document attached to, incorporated into, or enforceable hereunder, the provisions of this Order shall control.

XVI. ACCESS

65. To the extent Respondent owns, occupies, leases or controls property at the Facility or property other than the Facility to which access is required in order to properly carry out the terms of this Order, it shall grant access to EPA, the State of New Hampshire (the "State") and their officers, employees, agents, contractors, consultants, and other authorized representatives for purposes of implementing and monitoring work to be performed under this Order.

66. To the extent access to, use ownership of, or easements over property is required for the proper and complete implementation of this Order, the Respondent shall use best efforts to obtain site access agreements or other interests in the property, in writing, sufficient to allow implementation of this Order within **thirty (30) days** after the Order's effective date. For purposes of this paragraph, "best efforts" include but are not limited to, the payment of money, consistent with the Anti-Deficiency Act, in consideration of access to property.

67. Such written access agreements or other interests obtained pursuant to the preceding paragraph shall provide EPA, the State, and their officers, employees, agents, contractors, consultants, and other authorized representatives access to the Facility or other such property at all times for purposes of implementing and monitoring work under this Order. Such written access agreements or other interests shall specify that the Respondent is not EPA's representatives or agents with respect to liability associated with the Site.

68. In the event that site access agreements or other interests sufficient for implementation and monitoring of work under this Order are not obtained within the time period specified above, the Respondent shall notify EPA in writing within **three (3) days** thereafter

regarding the lack of such agreements and the efforts made by the Respondent to obtain them. Lack of access shall not excuse or justify failure to perform any activity or to meet any deadline not requiring or directly dependent upon such access.

XVII. QUALITY ASSURANCE/SAMPLING

69. The Respondent shall submit immediately to EPA and the State, upon receipt, the results of all sampling or tests and all other data generated by the Respondent and its contractor(s), or on the Respondent's behalf in the course of implementing this Order. The Respondent shall also provide the quality assurance/quality control procedures followed by all sampling teams and laboratories performing data collection and/or analysis. Respondent shall develop a Quality Assurance Project Plan in accordance with EPA guidance and the Uniform Federal Policy for Quality Assurance Project Plans (March 2005). Respondents shall also provide documentation of the quality assurance/quality control procedures followed by all sampling teams and laboratories performing data collection and/or analysis.

70. Upon request, the Respondent shall allow EPA, the State, or their authorized representatives to take split and/or duplicate samples of any samples collected by the Respondent while performing Work under this Order. The Respondent shall notify EPA and the State not less than four (4) days in advance of any sample collection activity. In addition, EPA shall have the right to take any additional samples that it deems necessary.

71. The Respondent shall assure that EPA and its authorized representatives are allowed access to any laboratory utilized by the Respondent in implementing this Order. Upon request, the Respondent shall have a designated laboratory analyze samples submitted by EPA for

quality assurance monitoring.

XVIII. ACCESS TO INFORMATION; RECORD PRESERVATION; CONFIDENTIALITY CLAIMS

72. Upon request, the Respondent shall provide EPA with copies of all records, documents, and other information generated by the Respondent and its contractor(s) which relates in any way to the Facility or the Vicinity of the Facility or to the implementation of this Order, including but not limited to, sampling and analysis records, field sheets and field notes, engineering logs, chain of custody records, contracts, bills of lading, trucking logs, manifests, receipts, reports, and correspondence. In addition, the Respondent's employees, agents, or representatives with knowledge of facts concerning the conditions at the facility or performance of Work under this Order shall be made available to EPA to provide such information.

73. For a period of at least five (5) years following completion of all Work conducted by the Respondent pursuant to this Order, the Respondent shall preserve all documents, records, and information of whatever kind, nature or description in their possession and/or control or that of their officers, employees, agents, licensees, accountants, contractors, attorneys, successors and assigns, that relate in any way to the performance of Work under this Order, or relate in any way to releases or threatened releases of contaminants that are the subject of the actions addressed by this Order. After this five (5) year period has expired, the Respondent shall provide EPA with thirty (30) days advance written notice prior to the destruction of any such records, documents, or

information. The Respondent shall send such notice, accompanied by a copy of this Order, to:

Attention: Pease Technical Project Coordinator
Mr. Michael Daly
U.S. Environmental Protection Agency
5 Post Office Square, Suite 100
Mail Code: OSRR7-3
Boston, MA 02109-3912

Re: Response Action at Former Pease Air Force Base
EPA Docket No. SDWA-01-2015-0061

Upon request, the Respondent shall provide to EPA copies of all such records, documents, or information.

74. Respondent may assert a confidentiality claim, if appropriate, covering part or all of the information required by or requested under this Order, pursuant to § 1445(d)(1) of SDWA, 42 U.S.C. § 300j-4(d)91) and 40 C.F.R. § 2.203(b) (1989). Respondent shall adequately substantiate all such assertions. Information determined to be confidential by EPA will be afforded the protection required by 40 C.F.R. Part 2, Subpart B. If no confidentiality claim accompanies the information when submitted to EPA, EPA may make it available to the public without further notice to the Respondent. However, pursuant to section 1445(d)(2) of SDWA, 42 U.S.C. § 300j-4(d)(2), any information shall be disclosed to the public to the extent that it deals with the level of contaminants in drinking water.

XIX. CREATION OF DANGER; EMERGENCY RESPONSE

75. Upon the occurrence of any incident or change of conditions during the activities conducted pursuant to this Order that causes or threatens a release of contaminants from the Facility or an endangerment to the public health or welfare or the environment, the Respondent

shall immediately take all appropriate action to prevent, abate or minimize such release or endangerment. The Respondent shall also immediately notify the TPC or, in the event of his/her unavailability, shall notify the Regional Duty Officer of the Emergency Planning and Response Branch, EPA Region I, telephone (617) 223-7265. In taking any actions under this paragraph, the Respondent shall act in accordance with all applicable provisions of the Health and Safety Plan prepared pursuant to the Statements of Work.

76. The Respondent shall submit a written report to EPA within **seven (7) days** after each incident specified above, setting forth the events that occurred and the measures taken and to be taken to mitigate any release or endangerment caused or threatened by the incident and to prevent the reoccurrence of such an incident.

77. Nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Facility.

XX. AMENDMENTS

78. This Order, other than the Statements of Work, may be amended only in writing by signature of the Regional Administrator of EPA Region I. Amendments or modifications to the Statements of Work may be made in writing by the TPC.

79. No informal advice, guidance, suggestion, or comment by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by the Respondent shall be construed as relieving the Respondent of its obligation to obtain such formal approval as may be

required by this Order.

XXI. PUBLIC INVOLVEMENT

80. Respondent shall ensure adequate public involvement in all Work undertaken pursuant to the Order and SOW. Within fifteen days of the effective date of the Order, Respondent shall submit to EPA a plan for ensuring adequate public involvement, including but not limited to the following:

a. Making immediately available to the public all non-privileged information obtained or compiled pursuant to this Order;

b. Providing periodic oral and written updates to the public on the progress of the Work;

c. Sharing immediately with the public all conclusions reached by the Respondent or its representatives with respect to the Work;

d. Coordinating the Work under this Order and SOWs with the ongoing groundwater investigations being undertaken by Respondent and with response actions being undertaken at Facility pursuant to the Federal Facility Agreement referred to above.

XXII. OTHER APPLICABLE LAWS

81. All actions required pursuant to this Order shall be undertaken in accordance with the requirements of all applicable local, state, and federal laws and regulations, including but not limited to, the laws relating to occupational health and safety and worker's compensation.

XXIII. ENFORCEMENT; PENALTIES FOR NONCOMPLIANCE

82. Any violation of this Order, or failure or refusal to comply with this Order, may subject the Respondent United States Air Force to:

a. an action under Section 1447(b) of the SDWA, 42 U.S.C. § 300j-6, for civil penalties of up to sixteen thousand, five hundred dollars ($16,500) for each day in which such violation occurs or failure to comply continues; or

b. a citizen's civil action under Section 1449, 42 U.S.C. § 300j-8.

XXIV. DISCLAIMER OF LIABILITY BY EPA

83. By issuance of this Order, EPA assumes no liability for injuries or damages to persons or property resulting from acts or omissions by the Respondent, its officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out activities pursuant to this Order. EPA shall not be held as a party to any contract entered into by the Respondent or its employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out activities pursuant to this Order.

XXV. NO RELEASE FROM LIABILITY

84. Nothing in this Order shall constitute or be construed as a satisfaction or release from any claim, cause of action, or demand in law or equity against the Respondent or any other person, whether or not a party to this Order, for any liability such person may have for any conditions or claims arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken from the facility, including but not limited

to any and all claims of the United States for money damages and interest under § 107(a) of CERCLA, 42 U.S.C. § 9607(a), or under any other applicable statute or the common law.

XXVI. RESERVATION OF RIGHTS BY EPA

85. EPA reserves all rights against the Respondent and all other persons to take any further civil, criminal, or administrative enforcement action pursuant to any available legal authority, including the right to seek injunctive relief; the recovery of money expended or to be expended (plus interest); monetary penalties; criminal sanctions; and/or punitive damages regarding: (i) any violation of this Order; or (ii) any actual or potential threat to human health or welfare or the environment, or any release or threat of release of hazardous substances on, at, in, or near the facility. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, including modification of this Order or issuance of additional Orders, and/or additional actions as EPA may deem necessary, or from requiring Respondent in the future to perform additional activities pursuant to RCRA, SDWA, or any other applicable law.

86. EPA further expressly reserves the right both to disapprove work performed by the Respondent and to request or order the Respondent to perform tasks in addition to those detailed in the Order. In addition, EPA reserves all rights it may have to undertake response actions at any time and to perform any and all portions of the work activities which the Respondent has failed or refused to perform properly or promptly, and to seek reimbursement from Respondent for its costs, or seek any other appropriate relief.

87. Notwithstanding any other provision of this Order, EPA shall retain all of its information gathering, entry, inspection, and enforcement authorities and rights under any applicable law, regulation, or permit.

XXVII. OPPORTUNITY TO CONFER

88. Within **three (3) days** after signature of the EPA Regional Administrator on this Order, the Respondent may request a conference with the Regional Administrator of EPA Region I or his designee to be held no later than **six (6) days** after receipt of this Order. Requests for a conference should be submitted to:

William Walsh-Rogalski Esq. (RAA)
Office of the Regional Administrator
U.S. Environmental Protection Agency
5 Post Office Square
Boston, Massachusetts 02109
(617) 918-1035

89. The purpose and scope of the conference shall be to discuss the issue(s) which Respondent would like the Regional Administrator to consider in connection with this Order. Respondent may submit any appropriate information regarding the issue(s) to be discussed. The conference is not an evidentiary or adversarial hearing and is not part of any proceeding to enforce or challenge the Order. At any conference held pursuant to this Section, the Respondent may appear in person or by attorney or other representative.

XXVIII. EXCUSED DELAY - FORCE MAJEURE

90. Respondent's activities under this Order shall be performed within the time limits set forth herein, or otherwise established or approved by EPA, unless performance is delayed or

prevented by events which constitute "force majeure." For purposes of this Order, "force majeure" is defined as any event arising from causes beyond Respondent's control. "Force majeure" shall not include any inability of any Respondent to pay the costs or expenses associated with complying with this Order, or increases in such costs or expenses, except as provided below in § XXX, Anti- Deficiency Act. When an event constituting "force majeure" occurs, Respondent shall perform the affected activities within a time period not to exceed the time provided in this Order and the period of delay attributable to "force majeure." Respondent shall use best efforts to avoid or minimize any delay or prevention of performance of their obligations under this Order, and to discover and keep apprised of any and all circumstances that may result in a delay or prevention of the work required under this Order. A delay caused by EPA, and otherwise conforming with the terms of this Section, shall be treated as beyond the Respondent's control.

91. Respondent shall verbally notify the EPA Technical Project Coordinator as soon as possible, and not later than forty-eight (48) hours, after discovering that circumstances have occurred or are likely to occur which may delay or prevent the performance of any activity required by this Order, regardless of whether or not those circumstances constitute a "force majeure." If the Technical Project Coordinator cannot be reached, Respondent shall leave a telephone message at the Project Coordinator's office. Respondent shall also notify EPA in writing within seven (7) days after the date Respondent first became aware of the circumstances which may delay or prevent any performance of any activity required by this Order. Such written notice shall be accompanied by all available pertinent documentation including, but not limited to, third-party correspondence, and shall contain: 1) a description of the circumstances and the

Respondent's rationale for interpreting such circumstances as being beyond its control; 2) the actions (including pertinent dates) Respondent has taken and/or intends to take to minimize any delay; and, 3) the date or time period Respondent proposes to complete the delayed activities. Such notification shall not in and of itself relieve Respondent of any of its obligations under this Order. Respondent's failure to timely and properly notify EPA as required by this paragraph shall nullify any claim of "force majeure" and any extension of time therefor. Respondent shall have the burden of proving to EPA's satisfaction that an event constituting "force majeure" has occurred.

XXIX. EFFECTIVE DATE; COMPUTATION OF TIME

92. This Order shall become effective within seven (7) calendar days of receipt of this Order. All times for performance of Work under this Order shall be calculated from the effective date. When computing any period of time under this Order, if the last day would fall on a Saturday, Sunday or federal holiday, the period shall run from the next working day.

XXX. ANTI-DEFICIENCY ACT

93. Nothing in this Order shall require the Respondent United States Air Force to violate the Anti-Deficiency Act.

XXXI. SEVERABILITY

94. The invalidity or enforceability of any provision(s) of this Order shall not affect the validity or enforceability of any other provision(s) of this Order, which shall remain in full force effect.

XXXII. TERMINATION

95. The provisions of this Order shall remain in full force and effect until all actions required by this Order have been completed and EPA has notified the Respondent, in writing, that the actions required by this Order have been completed. Respondent shall notify EPA in writing at such time as it believes that all such actions have been completed. EPA shall have sole discretion in determining whether all such actions have in fact been completed. Failure to complete all actions required hereunder or as directed by EPA shall be deemed a violation of this Order. EPA's provision of written notice to Respondent pursuant to this paragraph shall not be construed as a waiver of any of EPA's rights to take further enforcement action under any environmental laws.

XXXIII. MODIFICATION OF THE SOW

96. If EPA determines that modification of the Work specified in the attached SOW or in work plans developed pursuant to the SOW is necessary and appropriate, EPA may require that such modification be included in the SOW and/or in such work plans.

IT IS SO ORDERED.

H. Curtis Spalding
Administrator, EPA-New England
U.S. Environmental Protection Agency

8/03/15
Date

APPENDIX A – SCOPE OF WORK
Pease Air Force Base
Administrative Order under SDWA Section 1431

Pursuant to the authority given to the EPA Administrator by Section 1431(a)(1) of the SDWA, 42 U.S.C. § 300i(a)(1), and delegated to the Regional Administrators, the Air Force is ORDERED to perform the following activities:

1. Public Water Supply Wells. Respondent shall perform the following work as it relates to the Public Water Supply Wells on the Pease AFB Site:

    a. Haven Well Groundwater Restoration System. The Respondent shall design, install, and operate a groundwater treatment system for the Haven well. The Haven Well treatment system shall be designed and operated by the Respondent to meet the following performance objectives:

        i. Restore contaminated ground water in the Pease aquifer to levels less than the PHA for PFOA and PFOS within a period of time as determined by EPA.

        ii. At a minimum, the restoration system shall utilize extraction of ground water from the Haven well at a pumping rate approved by EPA.

        iii. The Haven well ground water treatment and discharge system(s) must be designed to have a capacity equal to the well's safe yield. The treatment system shall have the capacity to treat and discharge treated water to the Pease water distribution system for potable and/or non-potable uses as well as the ability to recharge treated water back into the Pease aquifer.

        iv. The recharge or reinjection of any treated water shall not result in the further degradation of the Pease aquifer.

        v. Uses best available technology to treat extracted Haven well water to relevant standards and risk based levels as determined by EPA.

    b. Haven Well Groundwater Restoration System Deliverables:

        i. Schedule: Within fifteen (15) days of the effective date of this Order, the Respondent shall submit to EPA for review and approval a remedial design/remedial action schedule for the deliverables along with any intermediary deliverables necessary to meet the construction completion milestones listed below.

ii. Work Plan: Within forty five (45) days of the effective date of this Order, the Respondent shall submit a remedial design work plan that meets the performance objectives specified in paragraph (1)(a).

iii. Fifty Percent (50%) Design: Within one hundred eighty (180) days from the effective date of this Order, the Respondent shall submit to EPA for review and approval a 50 percent design package. The package shall identify the technology to be utilized to treat the ground water and the draft operational plans for the system including the proposed pumping rate, proposed discharge plans and a description of all steps necessary to complete the design.

iv. Final Design: Within two hundred forty (240) days of the effective date of this Order, the Respondent shall submit a final Haven well treatment system design plan for review and approval that meets the performance objectives specified in paragraph 1(a). The final design shall include all final performance and design specifications necessary to construct the system.

v. Construction Completion: Within four hundred twenty (420) days of the effective date of this Order, the Respondent shall complete construction and initiate operation of the final Haven Well Treatment and discharge System as approved by EPA.

vi. Construction Completion Report: Within four hundred eighty (480) days of the effective date of this Order, the Respondent shall submit to EPA for review and approval a Construction Completion Report containing the data necessary to demonstrate that the system is operating and achieving the performance objectives required by this SOW.

vii. Operation, Maintenance and Monitoring Plans: The Respondent shall develop and submit to EPA for review and approval the following Haven well treatment system operations and maintenance plans (O&M) and long-term performance monitoring plans (LTPMP):

1. Within two hundred forty (240) days of the effective date of this Order, a Haven well treatment system O&M Plan shall be submitted.

2. Within two hundred forty (240) days of the effective date of this Order, a Pease aquifer restoration LTPMP shall be submitted.

3. Within ninety (90) days of the effective date of this Order, a Pease aquifer southern well field sentry monitoring plan shall be submitted.

c. Harrison and Smith Water Supply Well Contingent Treatment System. The Respondent shall design a contingency groundwater treatment system for the Harrison and Smith Water Supply wells. The treatment system shall be designed by the Respondent to meet the following performance objectives:

   i. Shall be designed to treat the water to less than the PHA for PFOA and PFOS.

   ii. Shall be designed to treat the water at a rate equal to the combined maximum safe yield of each well as approved by EPA.

   iii. Shall utilize best available technology to treat PFOA and PSOS.

d. Harrison and Smith Water Supply Well Contingent Treatment System Schedule and Deliverables:

   i. Schedule: Within fifteen (15) days of the effective date of this Order, the Respondent shall submit to EPA for review and approval a remedial design schedule that outlines all deliverables, including but not limited to those specified in this SOW, that will be provided to the EPA for review and approval to achieve the requirements of this order and meets all deadlines specified in the paragraphs below.

   ii. Work Plan: Within forty five (45) days of the effective date of this Order, the Respondent shall submit a remedial design work plan that meets the performance objectives specified in paragraph (1)(c).

   iii. Fifty Percent (50%) Design: Within one hundred eighty (180) days from the effective date of this Order, the Respondent shall submit to EPA for review and approval a 50 percent design package. The package shall identify the technology to be utilized to treat the groundwater and the draft operational plans for the system including the proposed pumping rate, and a description of all steps necessary to complete the design.

   iv. Final Design: Within two hundred forty (240) days of the effective date of this Order, the Respondent shall submit a final Harrison and Smith Well Contingent Treatment System Design plan for review and approval that meets the performance objectives specified in paragraph (1)(c). The final design shall include all performance and design

specifications and an operation, maintenance and monitoring plan for the system as well as a schedule for the construction.

2. Site 8 PFC Contamination and Associated Offsite and Residential Well Impacts

   a. Site 8 Ground Water Treatment Plant and Hydraulic Containment System: Within seven (7) days of this Order, the Respondent shall re-activate the existing Site 8 hydraulic containment system to establish maximum hydraulic containment for source and plume migration control utilizing the existing Site 8 ground water extraction wells. The Respondent shall also conduct the necessary monitoring to demonstrate the achievement of maximum hydraulic containment and effective PFC treatment of extracted ground water utilizing the existing Site 8 remedial systems. The Respondent shall also update the current Site 8 Operation and Maintenance Plan and Performance Monitoring Plan within seven (7) days to demonstrate effective PFC treatment performance and maximum hydraulic containment. The recharge or reinjection of any Site 8 treated ground water shall not exceed the PHAs which shall be achieved with proper maintenance of the existing system including monitoring and granular activated carbon change out.

   b. Site 8 Optimization Plan (OP): Concurrent with operations specified in paragraph (2)(a), within thirty days (30) days of the effective date of this Order, the Respondent shall submit for EPA review and approval a Site 8 hydraulic Optimization Plan (OP) for the existing treatment system. This optimized system shall be operated until the full extent of contamination has been defined as specified in paragraph (2)(e) below. The existing system shall be optimized to meet the following interim performance objectives:

      i. Maximize hydraulic containment and mitigate any further migration of PFOA and PFOS from Site 8.

      ii. Uses best available technology to treat extracted ground water.

      iii. The recharge or reinjection of any treated ground water shall not result in the further degradation of ground water quality.

   c. Implementation of Site 8 OP: Within one hundred twenty (120) days from the effective date of this Order, the Respondent shall implement the Site 8 OP. Within one hundred eighty (180) days from the effective date of this order, the Respondent shall submit for EPA review and approval a Site 8 Optimization Completion Report with the data necessary to demonstrate that the system is operating to achieve the performance objectives specified in this SOW.

d. Optimization Operation, Maintenance and Performance Monitoring Plans: Concurrent with work to be performed under paragraph (2)(b), the Respondent shall develop and submit for review and approval the following interim optimized treatment system operations and maintenance plans (O&M) and performance monitoring plans (PMP):

   i. Within one hundred twenty (120) days of the effective date of this Order, a Site 8 Optimization GWTP PFC O&M Plan shall be submitted.

   ii. Within one hundred twenty (120) days of the effective date of this Order, a Site 8 ground water extraction & treatment system PFC PMP shall be submitted.

e. Site 8 Investigation and Remediation: Concurrent with the work to be performed under paragraphs (2)(a), (2)(b), (2)(c), and (2)(d) the Respondent shall submit to EPA for review and approval the following:

   i. Residential Well Monitoring: Within thirty (30) days of the effective date of this Order, a long-term residential well PFC monitoring plan shall be submitted.

   ii. Investigation Plan: Within sixty (60) days of the effective date of this Order, a work plan to delineate the nature and extent of PFOA and PFOS contamination in the overburden and bedrock ground water and surface water associated with Site 8 shall be submitted.

   iii. Investigation Report: Within one hundred eighty (180) days of the effective date of this Order, a site investigation report for work completed under paragraph 2(e)(ii) shall be submitted.

   iv. Final Remedial Design: Within two hundred seventy (270) days of the effective date of this Order, a final remedial design plan to restore Site 8 ground water to levels less than the PHA for PFOA and PFOS shall be submitted.

   v. Construction Completion: Within four hundred fifty (450) days of the effective date of this Order, the Respondent shall complete construction and initiate operation of the final Site 8 Treatment System as approved by EPA. The Respondent shall submit to EPA for review and approval a Construction Completion Report containing the data necessary to demonstrate that the system is operating and achieving the performance objectives required by this SOW.

3. Investigation of Other Potential Pease PFC Sites

a. Investigation Plan: Within sixty (60) days of the effective date of this Order, the Respondent shall submit for EPA review and approval a work plan, including a schedule, to delineate the nature and extent of PFOA and PFOS contamination in the overburden and bedrock ground water and surface water for sites identified in the Air Force document titled; "Draft Perfluorinated Compounds Preliminary Assessment (PA), Former Pease AFB, Portsmouth, New Hampshire, December 2014".

b. Investigation Report: Within two hundred seventy (240) days of the effective date of this Order, a site investigation report for work completed under paragraph 3(a) shall be submitted.