
Santa Ana Regional Water Quality Control Board

September 29, 2020

Mr. Robert Estrada

BRAC Environmental Coordinator for Former March Air Force Base
AFCEC/CIBW
2261 Hughes Avenue, Suite 155
JBSA Lackland, TX 78236-9853
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Mr. Eric Lehto
AFCEC/CZOW – March
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DETECTION OF ELEVATED PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) RELEASED FROM THE FORMER MARCH AIR FORCE BASE AND THE MARCH AIR RESERVE BASE AND THEIR IMPACTS ON THE BENEFICIAL USES OF PERRIS NORTH GROUNDWATER MANAGEMENT ZONE

Dear Mr. Estrada and Mr. Lehto:

Activities by the Air Force at the former March Air Force Base and March Air Reserve Base (collectively MARB hereafter) have resulted in the release of PFAS that have contaminated the groundwater of the Perris North Groundwater Management Zone (GMZ), in the areas beneath and to the east of the Base (see Attachments 1 and 2). In February 2020, the California State Water Resources Control Board's Division of Drinking Water established notification levels for two PFAS compounds, perfluorooctanoic acid (PFOA) and perfluorooctyl sulfonate (PFOS), at 5.1 parts per trillion (ppt, or nanograms per liter, ng/L) and 6.5 ppt, respectively; the response levels (i.e. the level at which drinking water wells are required to go offline) were established at 10 ppt for PFOA and 40 ppt for PFOS.

The concentrations of PFOA and PFOS detected in many of the groundwater monitoring wells located both on and off the MARB exceed the drinking water notification and response levels. The Table below shows the maximum concentrations of PFOA and PFOS detected in

groundwater at and near MARB.

Chemical	Date sampled	Well #	Sampling Zone feet below top of casing	Concentration ng/L	Location
PFOA	Feb 2018	EX08	55.9 - 100.9 (upper alluvial)	1,640	On former March AFB south of Site 7
PFOS	Feb 2018	5MW14	107.8 - 150.8 (lower alluvial)	6,750	Off-Base approximately 2,900 feet east of Site 7

The Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) specifies the beneficial uses of the Perris North GMZ, which include Municipal and Domestic Supply (drinking water), Agricultural Supply, Industrial Service Supply, and Industrial Process Supply. The release of PFAS to the groundwater has impacted the beneficial uses of the Perris North GMZ and has resulted in the shutdown of two municipal supply wells, Well #59 and Well #56, owned by the Eastern Municipal Water District (EMWD), and two domestic private wells.

We understand that the Air Force paid EMWD initially for the purchase of replacement water to in response to the shut-down of EMWD Well #59 and has paid EMWD for installation of a wellhead treatment system. In addition, the Air Force delivered bottled water to the two residential properties where PFOA and PFOS were detected at or above EPA's Lifetime Health Advisory (70 ng/L) in their private drinking water wells and made arrangements for connecting the two residences to the municipal water supply.

Lately we have become aware that EMWD is planning to install a municipal drinking water well near the intersection of Perris Boulevard and Nance Street. Based on the PFAS plume map initially provided to us by the Air Force, the proposed well (#204) is within the path of the PFAS plume (see Attachment 2), and the water may not meet the criteria for direct supply to the public if the PFOA and PFOS concentrations exceed the response levels. As you may know, according to California Health and Safety Code Section 116378, EMWD cannot deliver water with PFOA and PFOS at concentrations exceeding 10 ppt and 40 ppt, respectively, unless EMWD provides the requisite notice. This is another line of evidence that the beneficial uses of the Perris North GMZ have been and, are threatened to be impacted by the PFAS plume emanating from the MARB.

We are concerned about the elevated concentrations of PFAS detected in the groundwater beneath the Base, and in the offsite areas downgradient, east of the Base, as well as the impacts to the beneficial uses of the Perris North GMZ. Therefore, we request that the Air Force take the following actions:

1. Fully delineate the lateral and vertical extent of PFOA and PFOS emanating from MARB. In order to protect the drinking water (MUN) beneficial use in the Perris North GMZ, the plume must be delineated using California's screening levels for PFOA and PFAS in drinking

water; that is, concentrations of 5.1 ng/L and ppt 6.5 ng/L, respectively, for PFOA and PFOS;

2. Control the migration of the PFAS plume(s); and
3. Remediate the groundwater that has been impacted.

We will be happy to meet with you and your team to further discuss this matter at your earliest convenience. Should you have any questions regarding this letter, or if you wish to set up a meeting, please contact Patricia Hannon by email patricia.hannon@waterboards.ca.gov, or you may call Cindy Li, Chief of our Land Disposal & DoD Section, at (951) 782-4906, or by email at cindy.li@waterboards.ca.gov. You may also contact me at hope.symthe@waterboards.ca.gov.

Sincerely,

 Digitally signed by Hope Smythe
Date: 2020.09.29 11:54:10 -07'00'
Water Boards

Hope A. Smythe
Executive Officer
Santa Ana Regional Water Quality Control Board

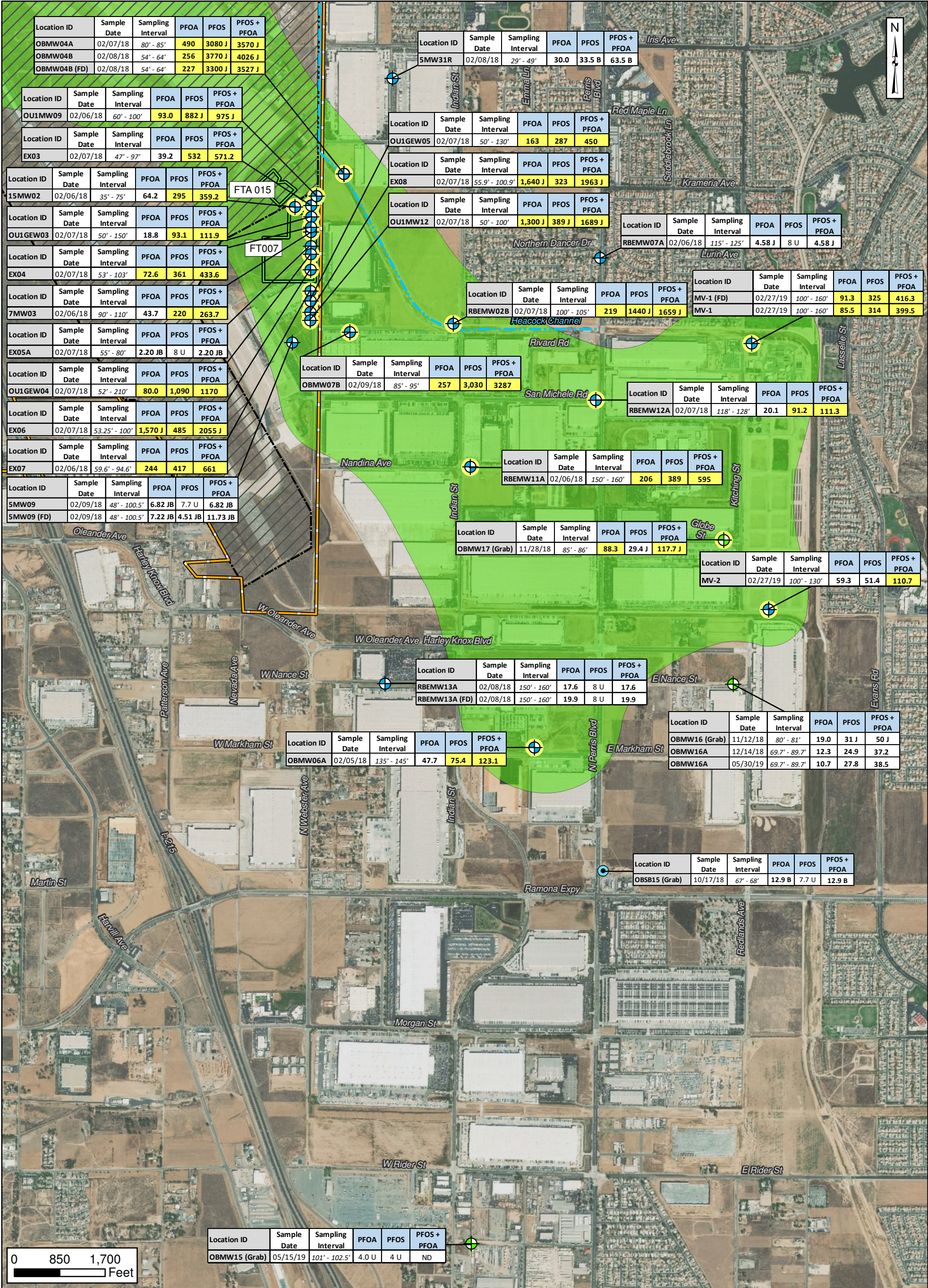
Attachments¹:

1. Three maps showing concentration of PFOS and PFOA in the Upper Alluvial, Lower Alluvial, and Bedrock Alluvial aquifer zones.
2. Map showing a composite of PFOS and PFOA concentrations across all hydrostratigraphic units

cc:

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¹ Source: Final Expanded Site Inspection Report for Perfluorooctane Sulfonate and Perfluorooctanoic Acid at Former March Air Force Base, dated March 2020



Legend

- Existing Monitoring Well
- Grab Sample
- Installed Monitoring Well
- Indicates Result(s) Above Health Advisory*
- Fire Training Area Boundary
- Former March AFB Installation Boundary
- Air Force Retained Property

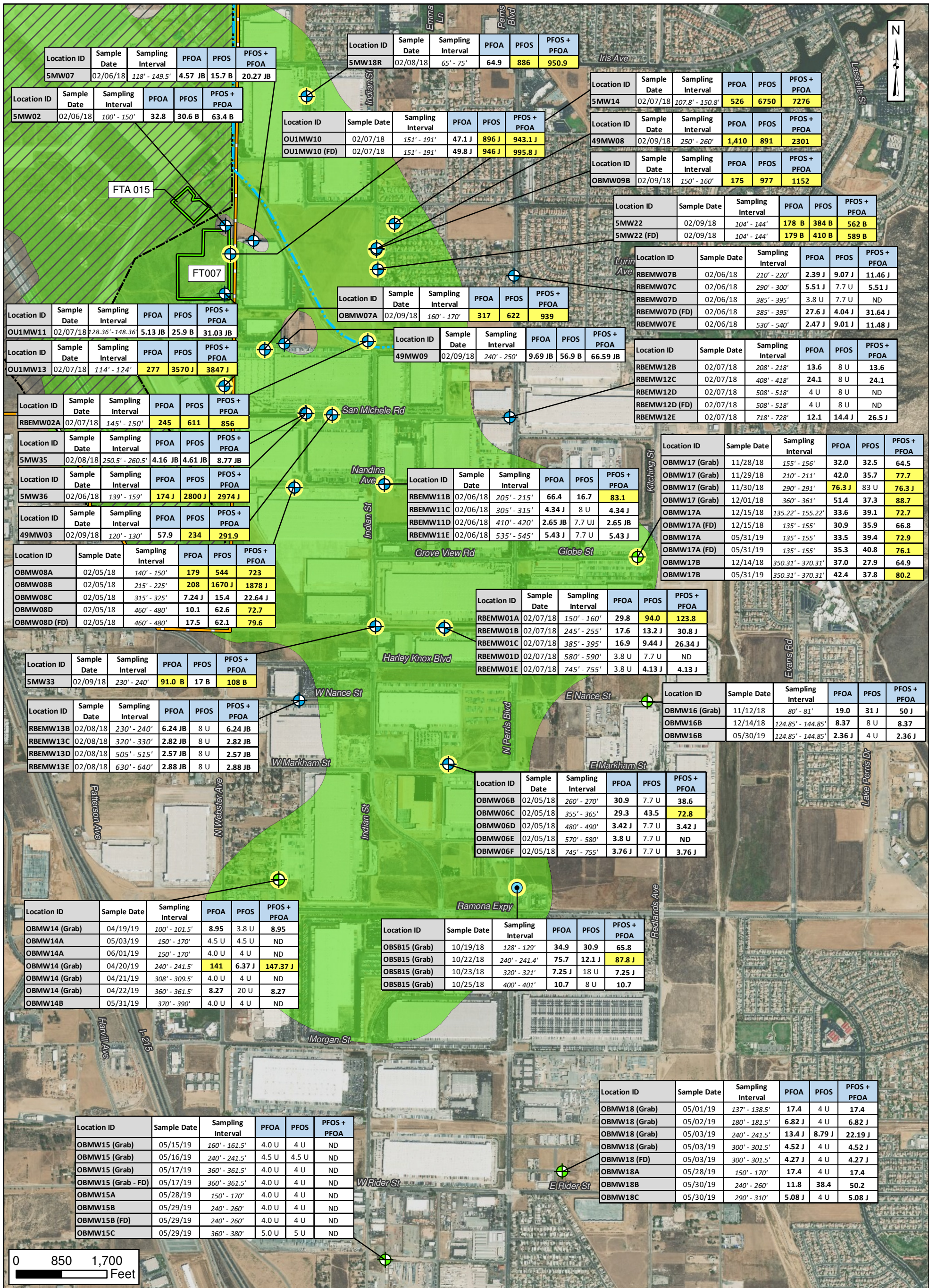
Approx. Extent of PFOS+PFOA Impacts in Upper Aquifer

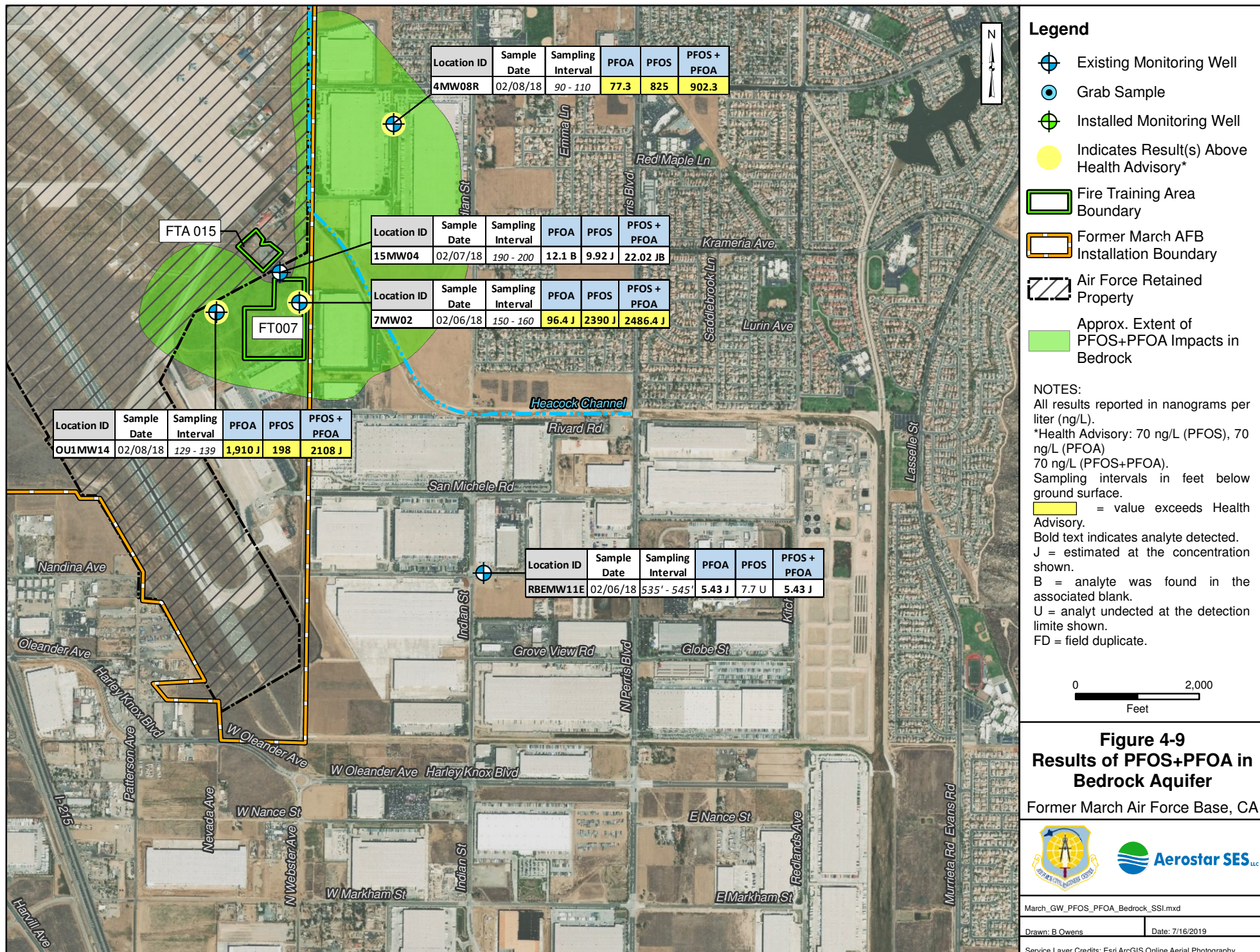
NOTES:
All results reported in nanograms per liter (ng/L).
*Health Advisory: 70 ng/L (PFOS), 70 ng/L (PFOA), 70 ng/L (PFOS+PFOA).
Sampling intervals in feet below ground surface.
= value exceeds Health Advisory.
Bold text indicates analyte detected.
J = estimated at the concentration shown.
B = analyte was found in the associated blank.
U = analyt undected at the detection limite shown.
FD = field duplicate.
ND = non-detect.

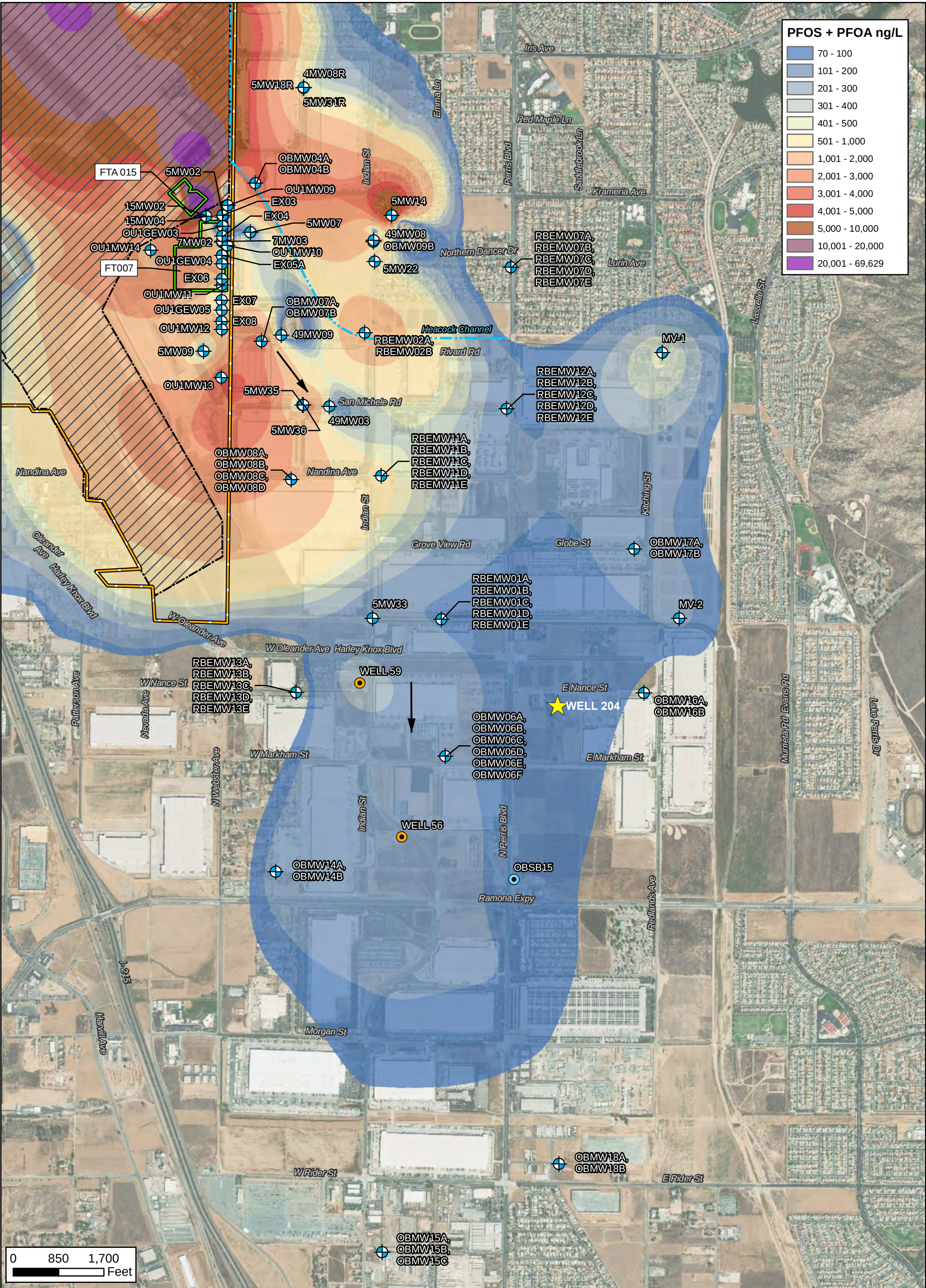
Figure 4-3
Results of PFOS+PFOA in Upper Aquifer
Former March Air Force Base, CA

Air Force Civil Engineering Center
2261 Hughes Avenue
Building 171, Ste 155
JBAS Lackland, Texas 78236

Drawn: B. Owens Date: 7/16/2019 March_GW_PFOA_Upper_Aq_SSI
Service Layer Credits: Esri ArcGIS Online Aerial Photography







Legend

- Municipal Public Drinking Water Well - Not in Operation
- Monitoring Well
- Grab Sample
- Fire Training Area Boundary
- Former March AFB Installation Boundary
- Air Force Retained Property

Flow Direction

Figure 4-10
PFOS + PFOA Concentrations
Across all HSUs
Former March Air Force Base, CA

Air Force Civil Engineering Center
2261 Hughes Avenue
Building 171, Ste 155
JBSA Lackland, Texas 78236

Drawn: B. Owens Date: 9/16/2019 March_PFOS_PFOA_Conc_SSI

Service Layer Credits: Esri ArcGIS Online Aerial Photography