



DEPARTMENT OF THE NAVY

COMMANDER
NAVY REGION HAWAII
850 TICONDEROGA ST STE 110
JBPBH, HAWAII 96860-5101

JUN 26 2019

5090
Ser N45/0562
June 17, 2019

CERTIFIED NO: 7016 0910 0001 0891 7604

Mr. Richard Takaba
Hawaii State Department of Health
Environmental Management Division
Solid and Hazardous Waste Branch
Underground Storage Tank Section
2827 Waimano Home Road, Suite 100
Pearl City, HI 96782

Dear Mr. Takaba:

SUBJECT: RED HILL TANK COMPLEX
SOIL VAPOR SAMPLING RESULTS FOR APRIL 2019
DOH FACILITY ID NO. 9-102271
DOH RELEASE ID NO. 990051, 010011, 020028, AND 140010

Soil vapor samples were collected from beneath all active and accessible Red Hill tanks on April 26, 2019.

Soil vapor VOC concentrations were measured in the field using a photo-ionization detector. The soil vapor sampling results are being submitted as Enclosure 1.

A conservative approach is to assess the integrity of the associated tank system if VOC concentrations exceed 280,000 ppbv in soil vapor monitoring points (SVMPs) beneath tanks containing JP-5 or JP-8, or 14,000 ppbv in SVMPs beneath tanks containing marine diesel fuel. These values are 50 percent of the calculated vapor concentration from fuel-saturated water.

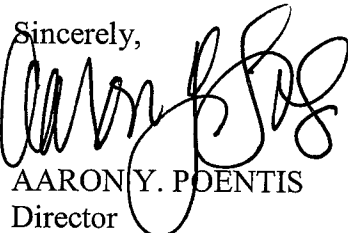
At Tank 5, the concentrations of VOCs detected in the front, middle, and outer edge soil vapor monitoring probes were 3,036 ppbv, 3,590 ppbv, and 1,813 ppbv, respectively. Tank 5 was emptied in January 2014 and has not contained fuel since that time. VOC concentrations in all down-gradient soil vapor monitors were below 700 ppbv.

All other VOC concentrations measured in March were about 29 to 1,110 times below the action levels, with no consistent trends observed. NAVSUP FLC Pearl Harbor Causative Research Report is submitted as Enclosure 2. Possible reasons for the results are speculative and may include, but not be limited to, ongoing projects in the tunnel, groundwater level fluctuations, rainfall (or lack thereof), bi-product of biodegradation, and fuel movement in the tanks and piping.

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Soil vapor VOC concentration trends will continue to be monitored. The next soil vapor sampling event is scheduled for May 2019, and will include collecting samples from soil vapor monitoring probes beneath all active and accessible tanks.

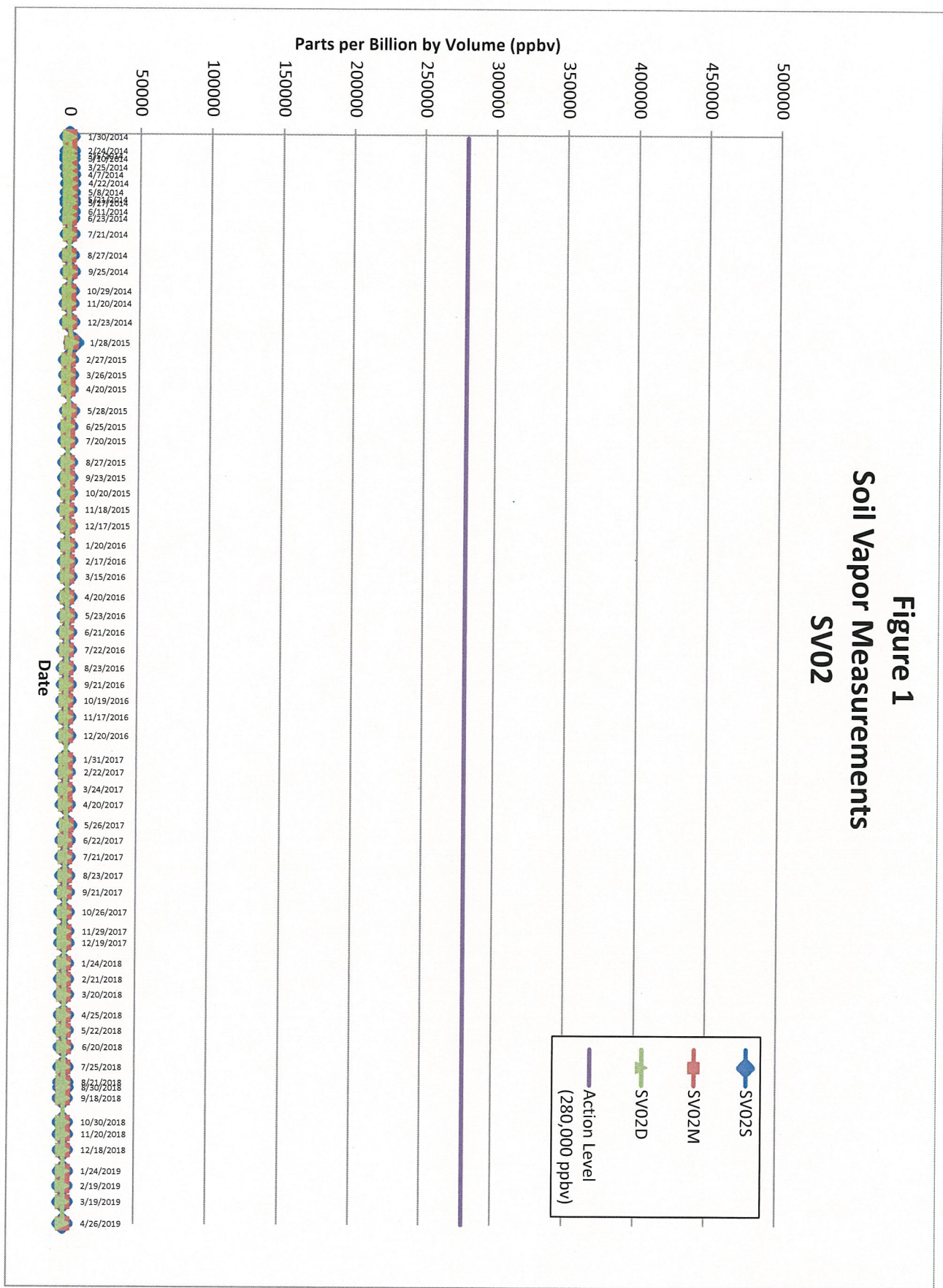
If there are any questions regarding this matter, or if more information is needed, please contact Mr. Melvin Muraoka at (808) 471-3869.

Sincerely,

AARON Y. POENTIS
Director
Regional Environmental Department
By direction of the
Commander

- Enclosure: 1. Summary of Soil Vapor Sampling Results for Tanks 2 through 18 and 20 through April 2019 (18 pages)
2. NAVSUP FLC Pearl Harbor Causative Research Report IRT Red Hill Soil Vapor Monitoring Report for April 2019

Copy to: Mr. Omer Shalev, U.S. EPA Region 9, Underground Storage Tank Program Office
Mr. John Floyd, NAVSUP FLC Pearl Harbor
Mr. Ralph Wells, DLA Energy Pacific

Figure 1
Soil Vapor Measurements
SV02



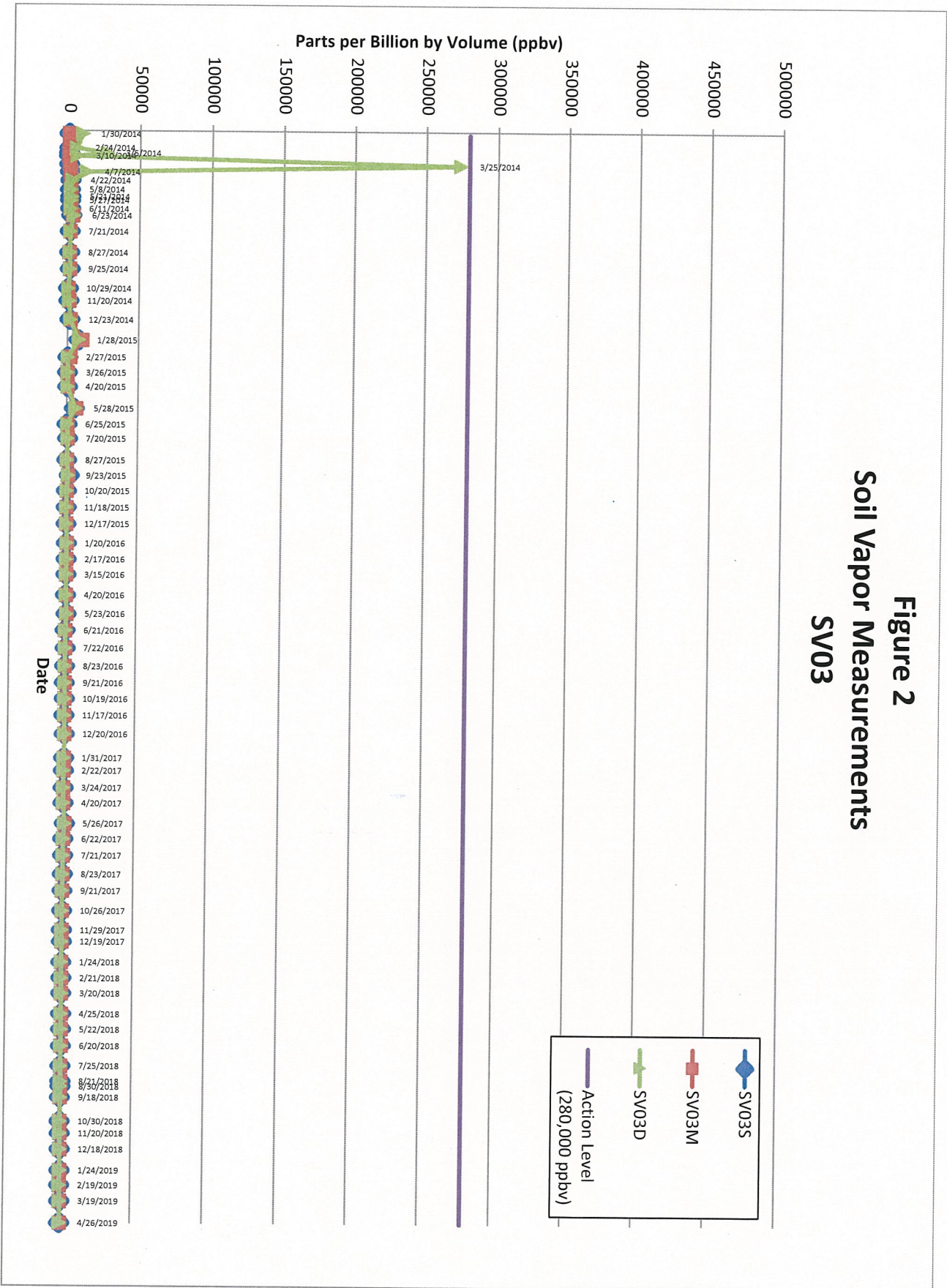
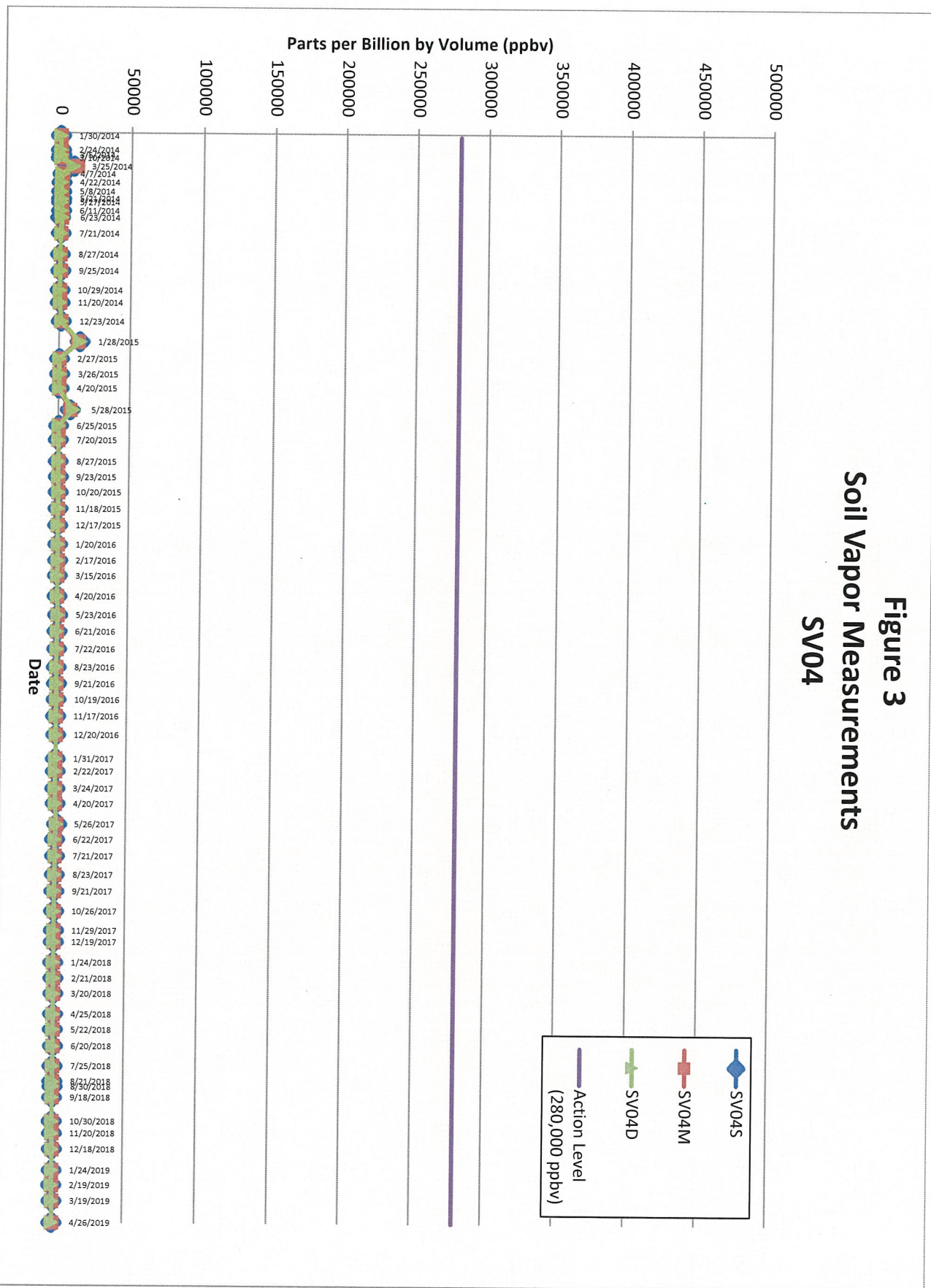


Figure 2
Soil Vapor Measurements
SV03

Figure 3
Soil Vapor Measurements
SV04



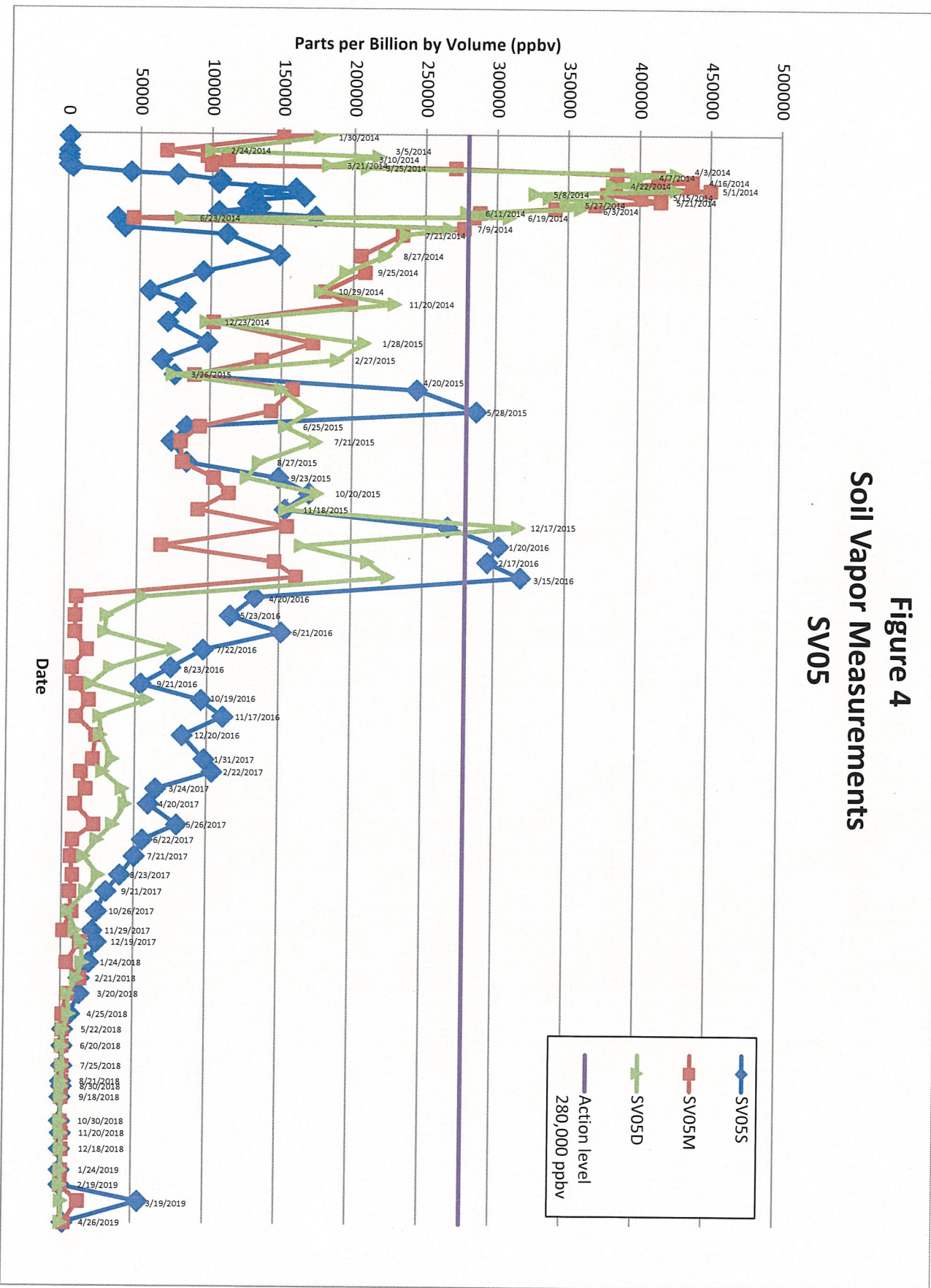


Figure 4
Soil Vapor Measurements
SV05

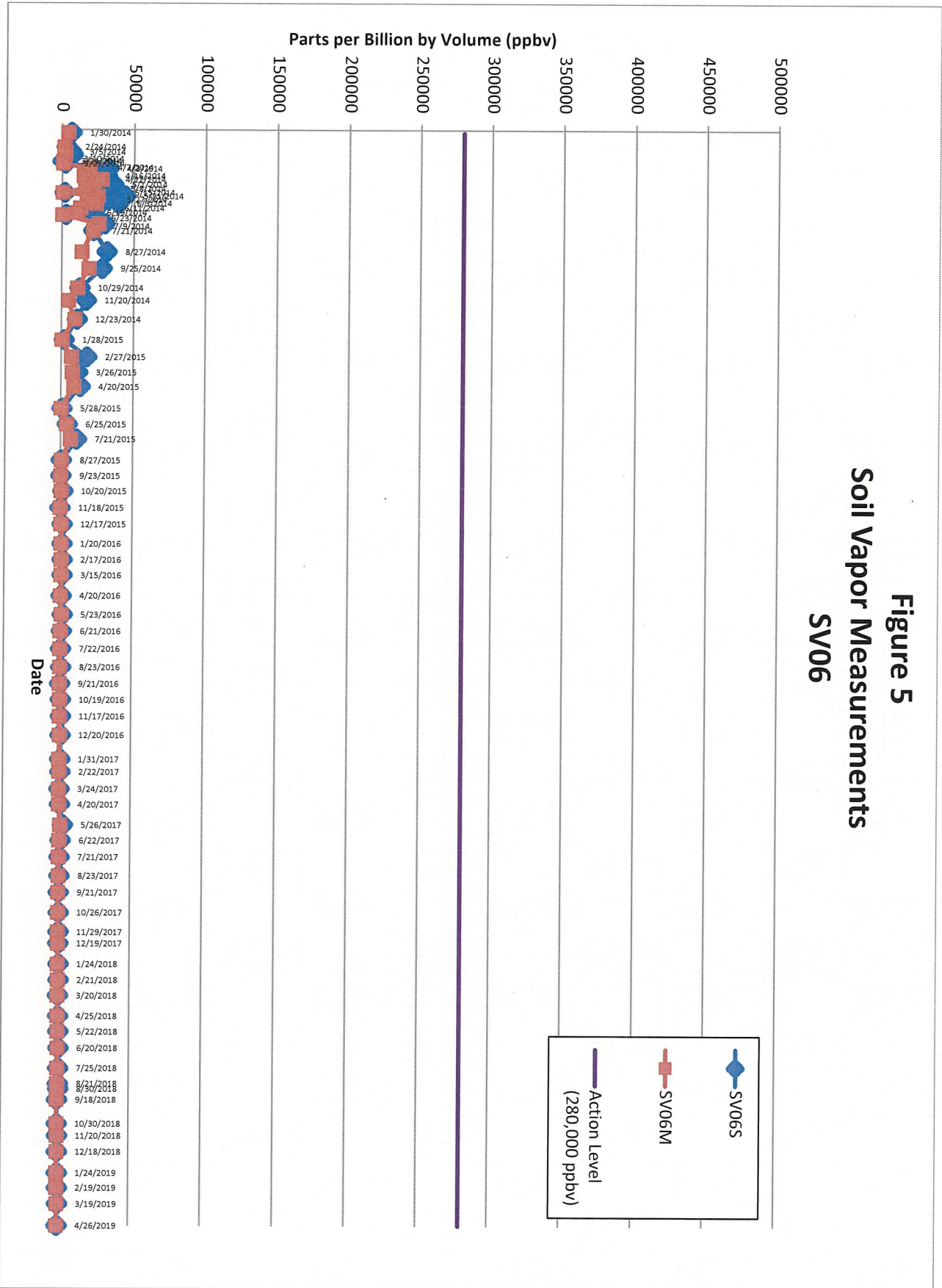


Figure 5
Soil Vapor Measurements
SV06

Figure 6
Soil Vapor Measurements
SV07

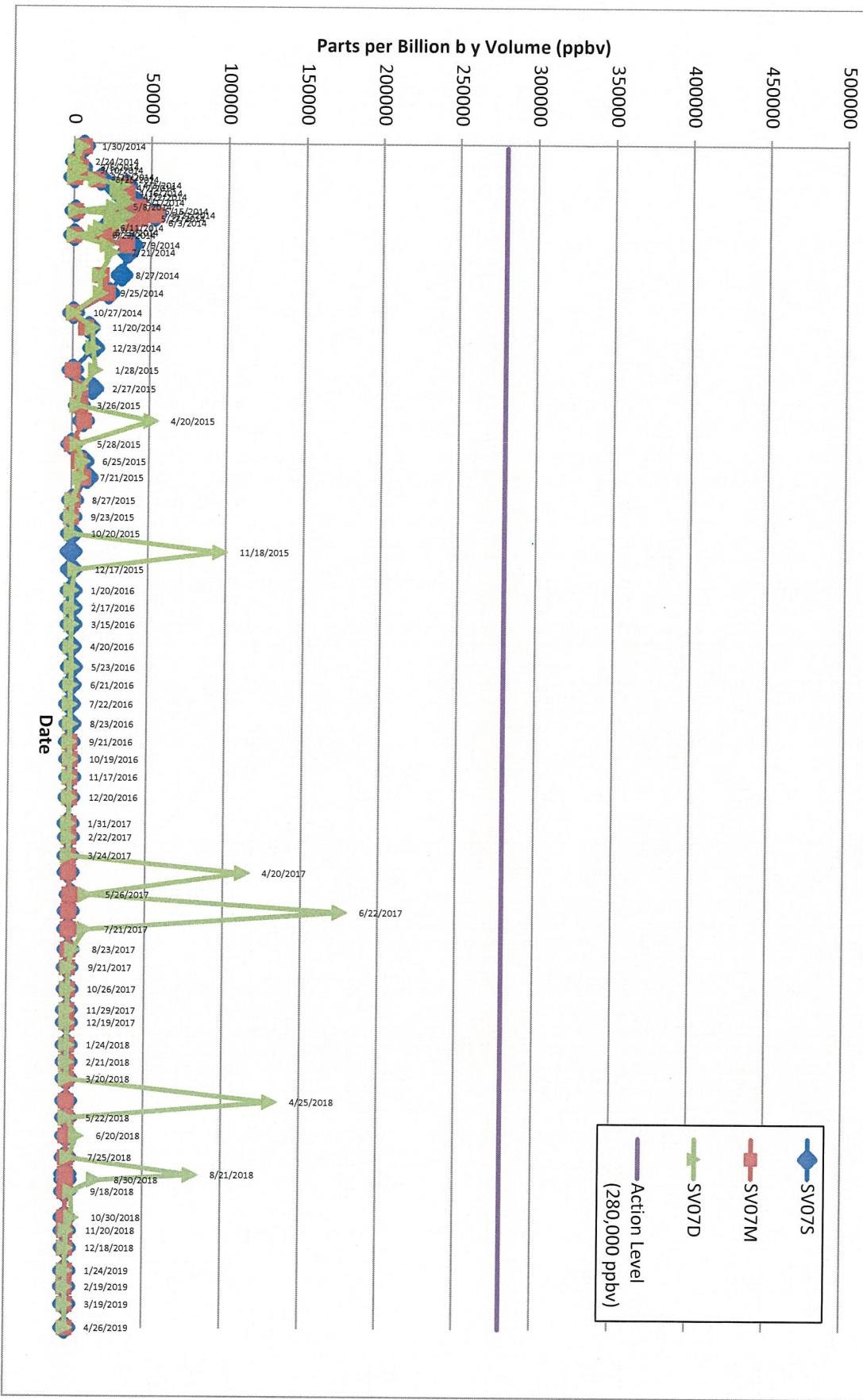


Figure 7
Soil Vapor Measurements
SV08

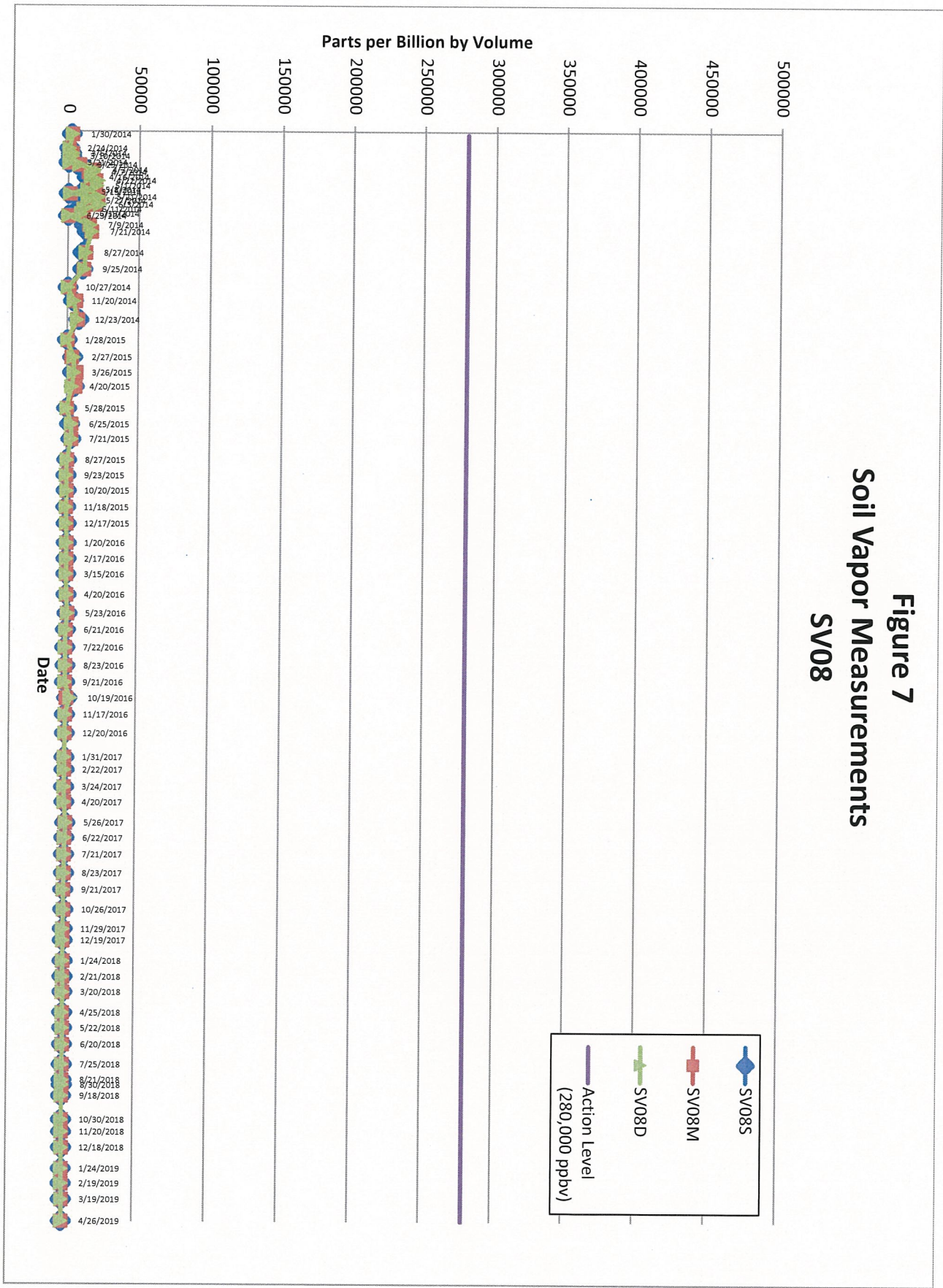


Figure 8
Soil Vapor Measurements
SV09

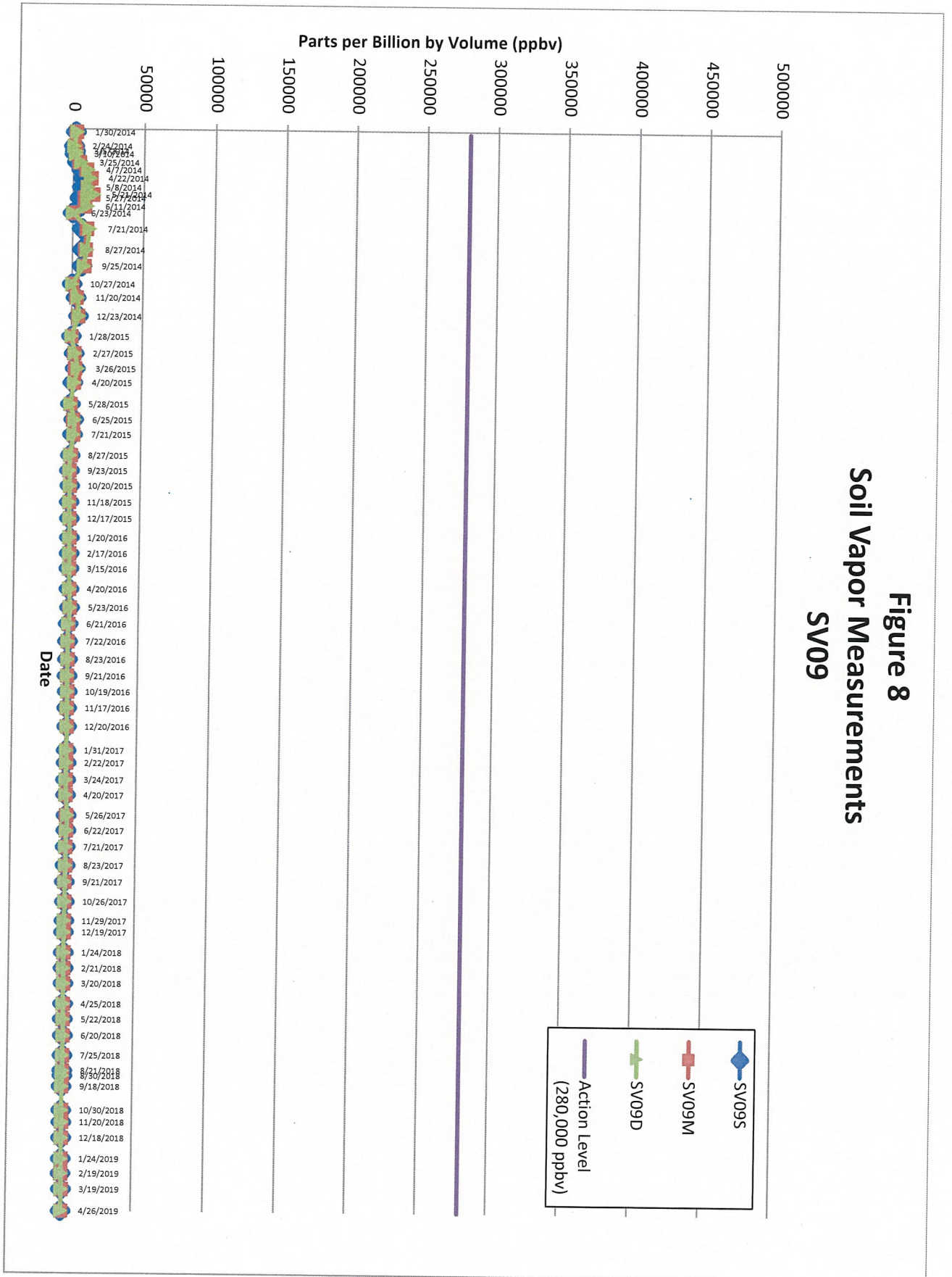


Figure 9
Soil Vapor Measurements
SV10

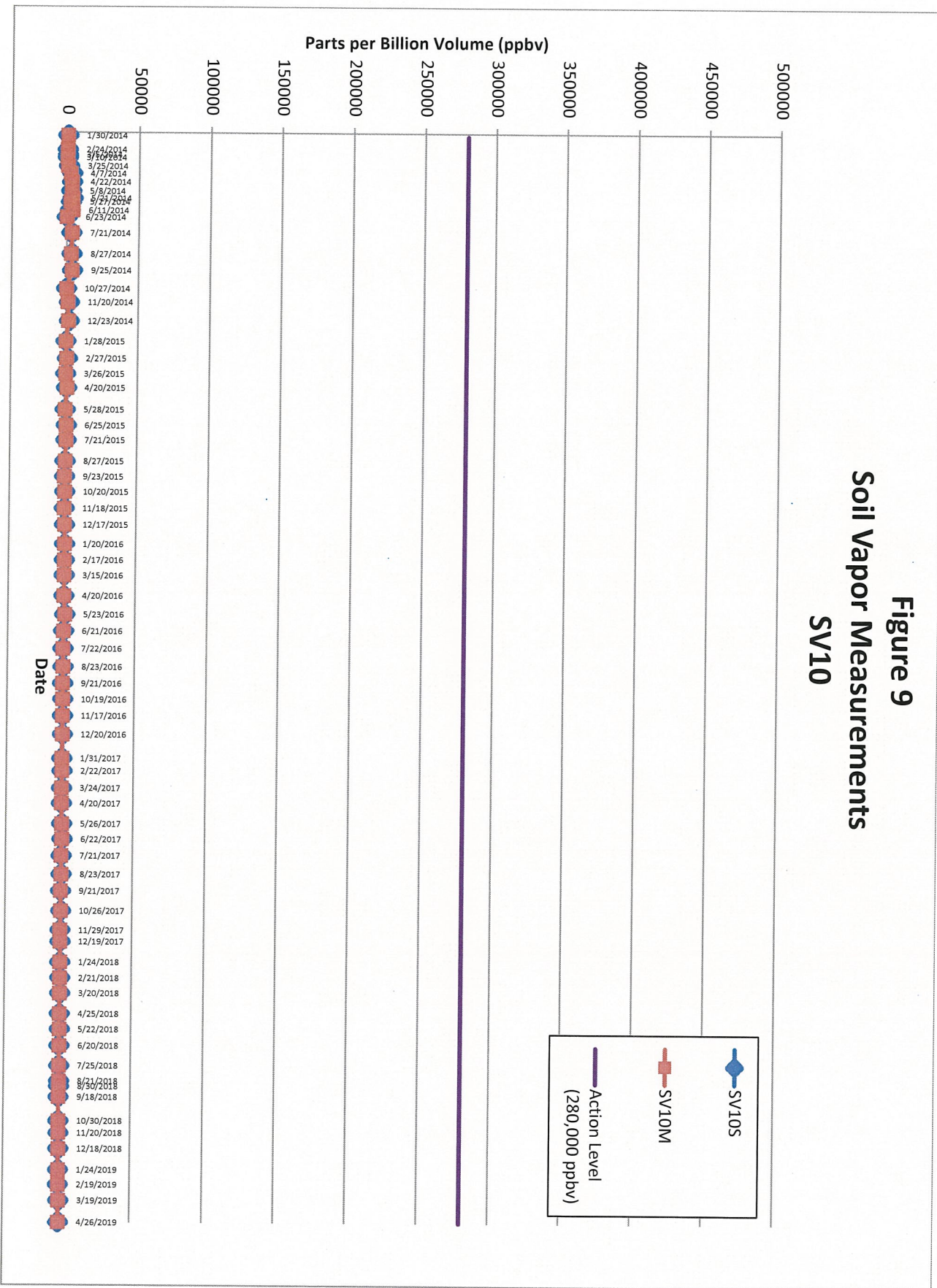


Figure 10
Soil Vapor Measurements
SV11

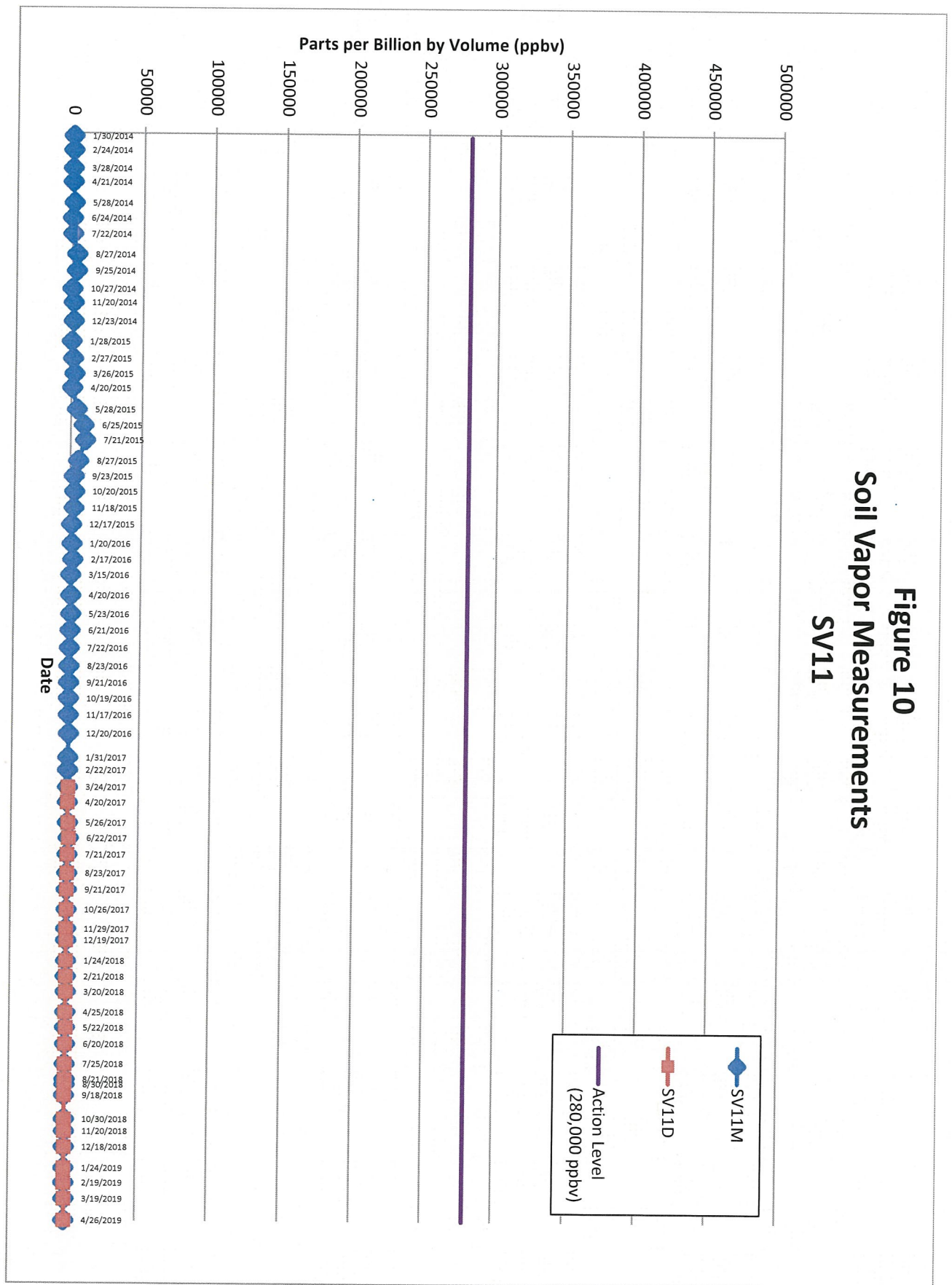


Figure 11
Soil Vapor Measurements
SV12

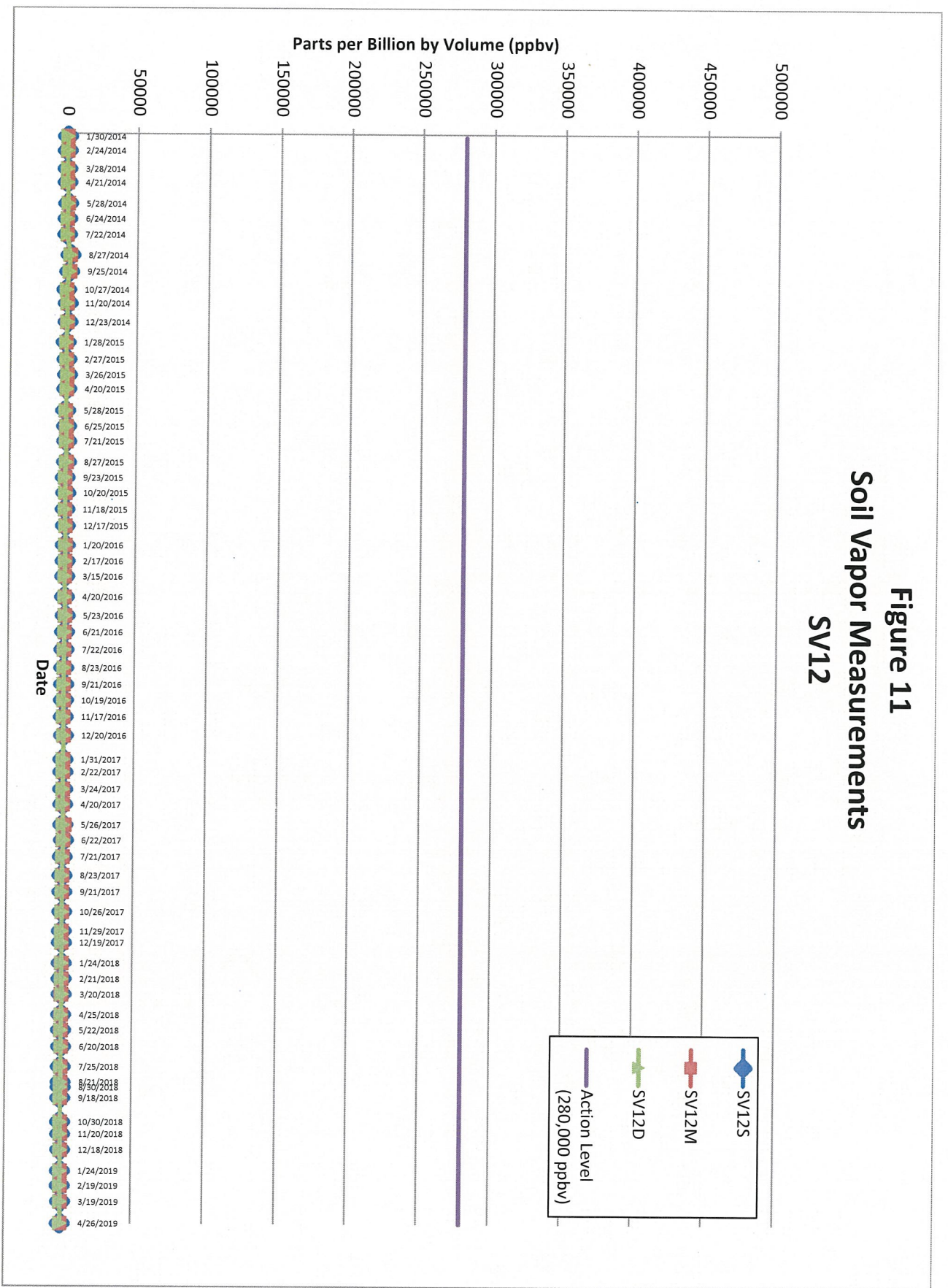


Figure 12
Soil Vapor Measurements
SV13

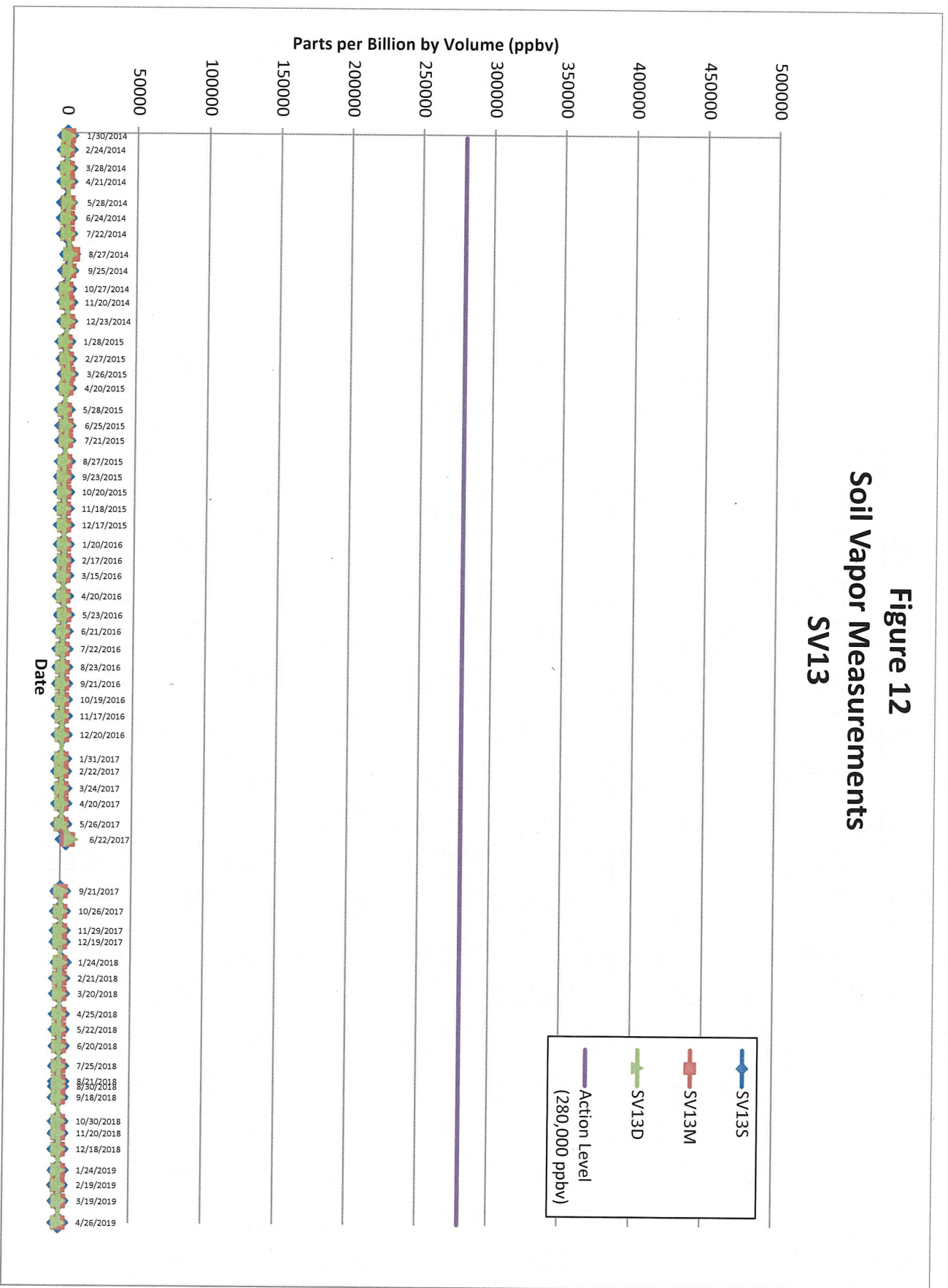


Figure 13
Soil Vapor Measurements
SV14

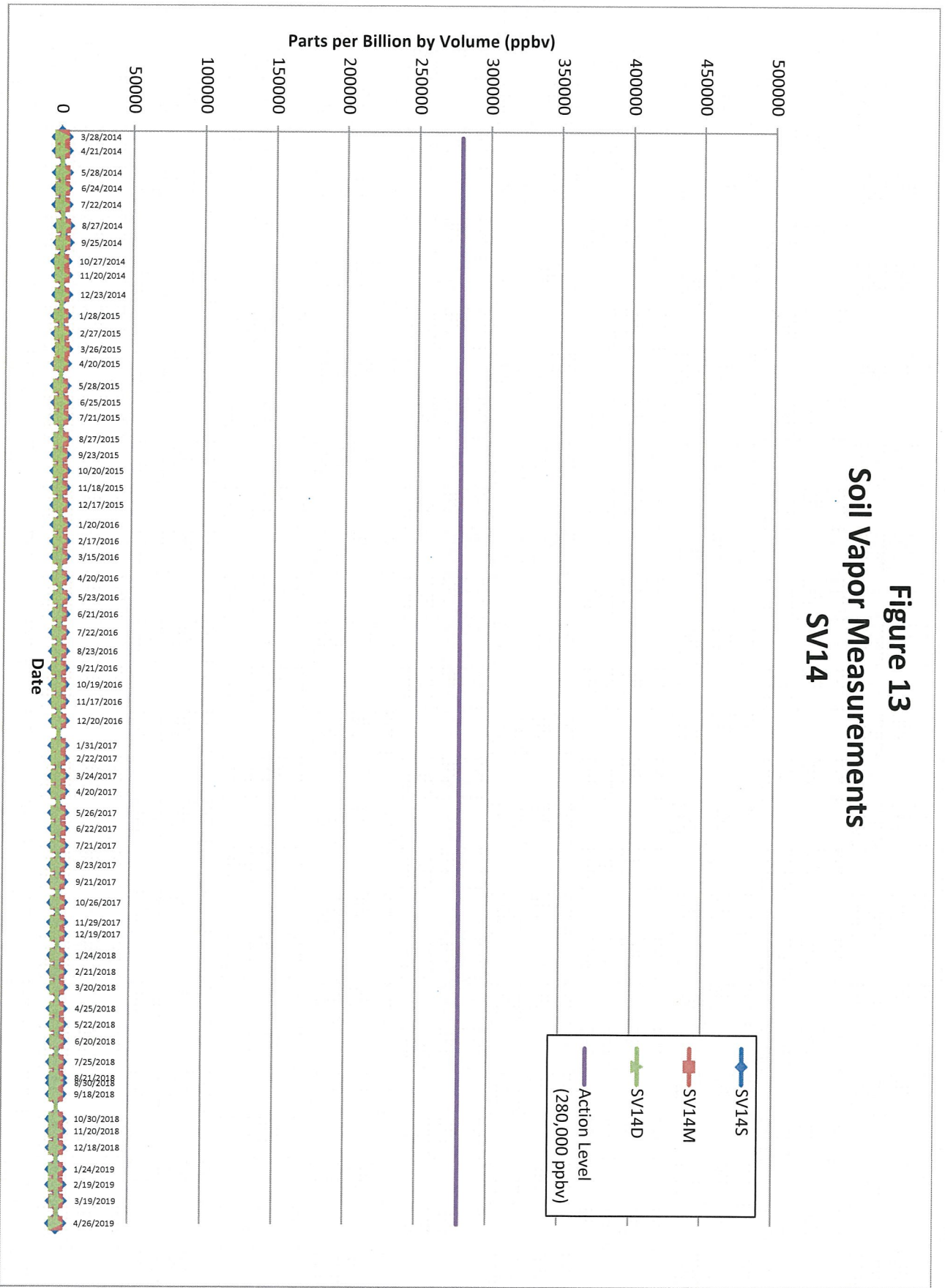


Figure 14
Soil Vapor Measurements
SV15

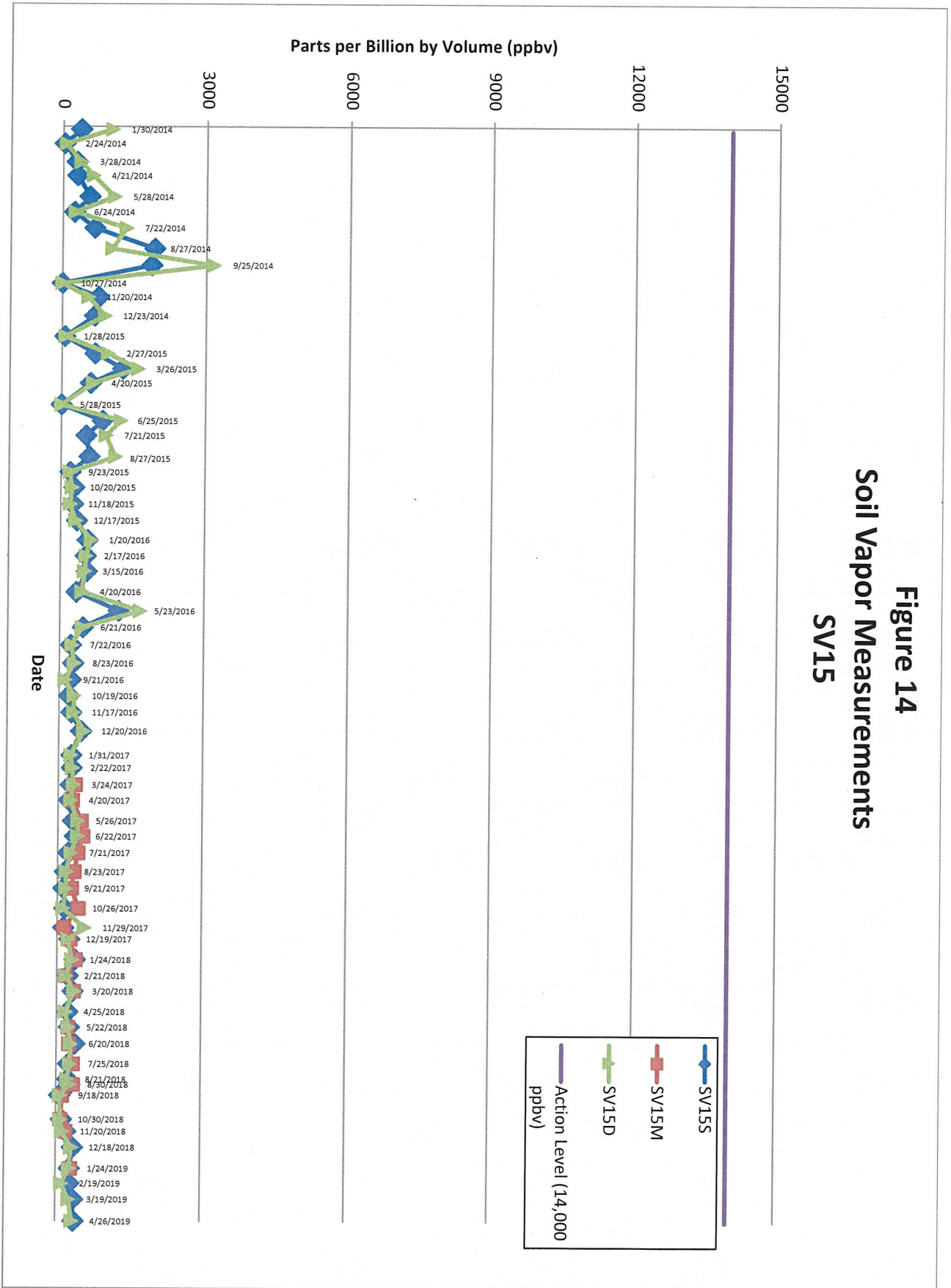


Figure 15
Soil Vapor Measurements
SV16

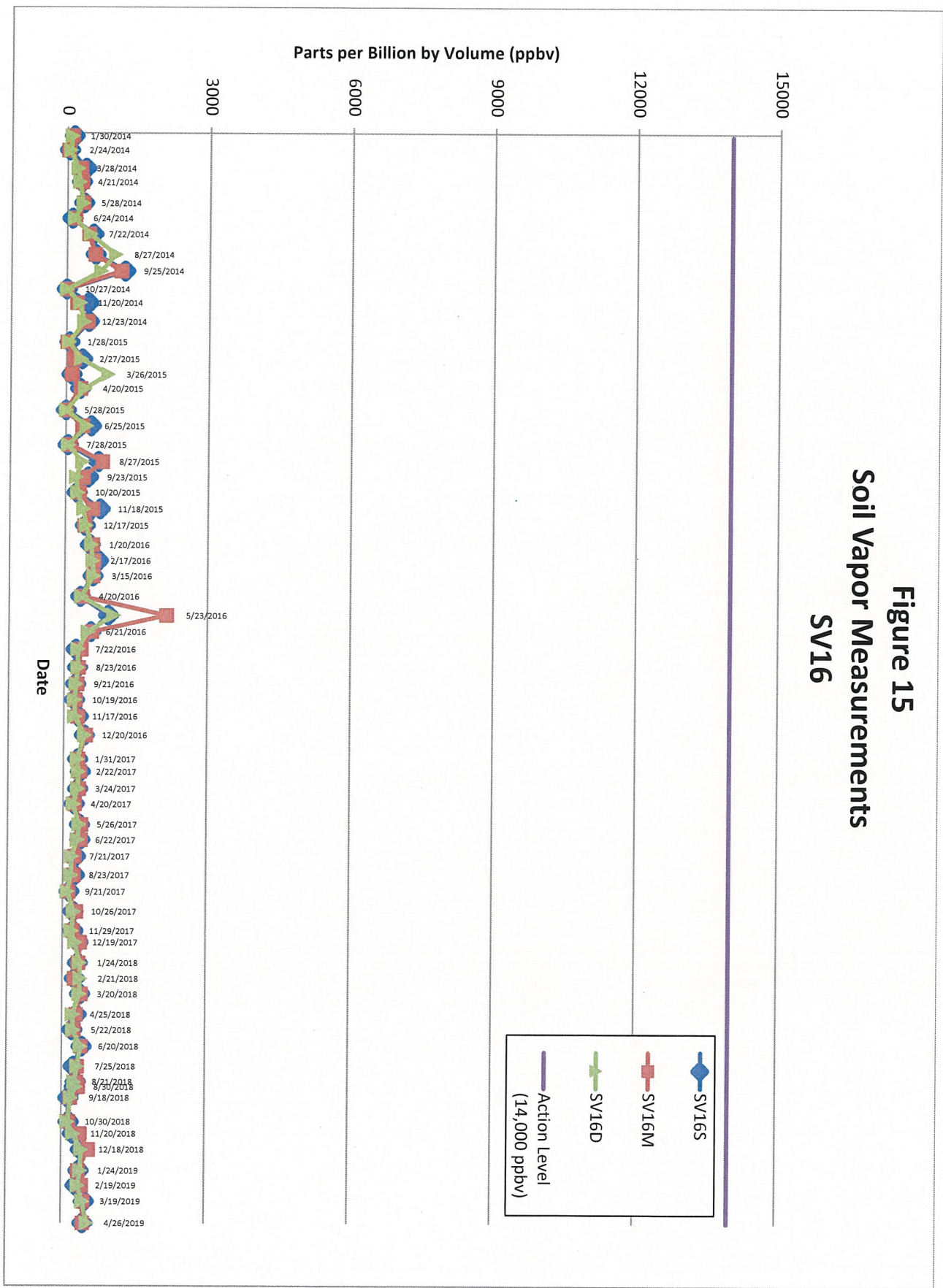


Figure 16
Soil Vapor Measurements
SV17

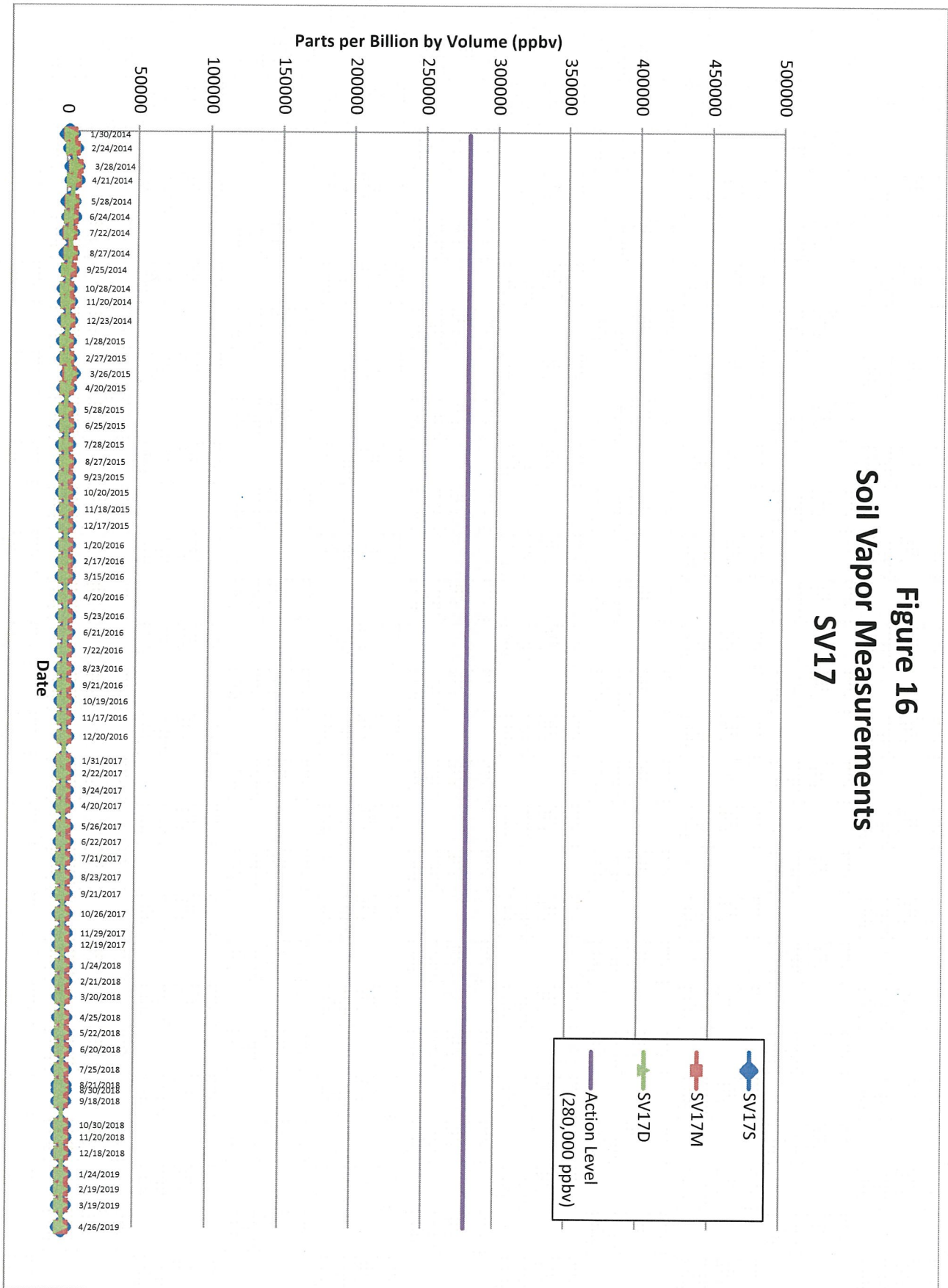


Figure 17
Soil Vapor Measurements
SV18

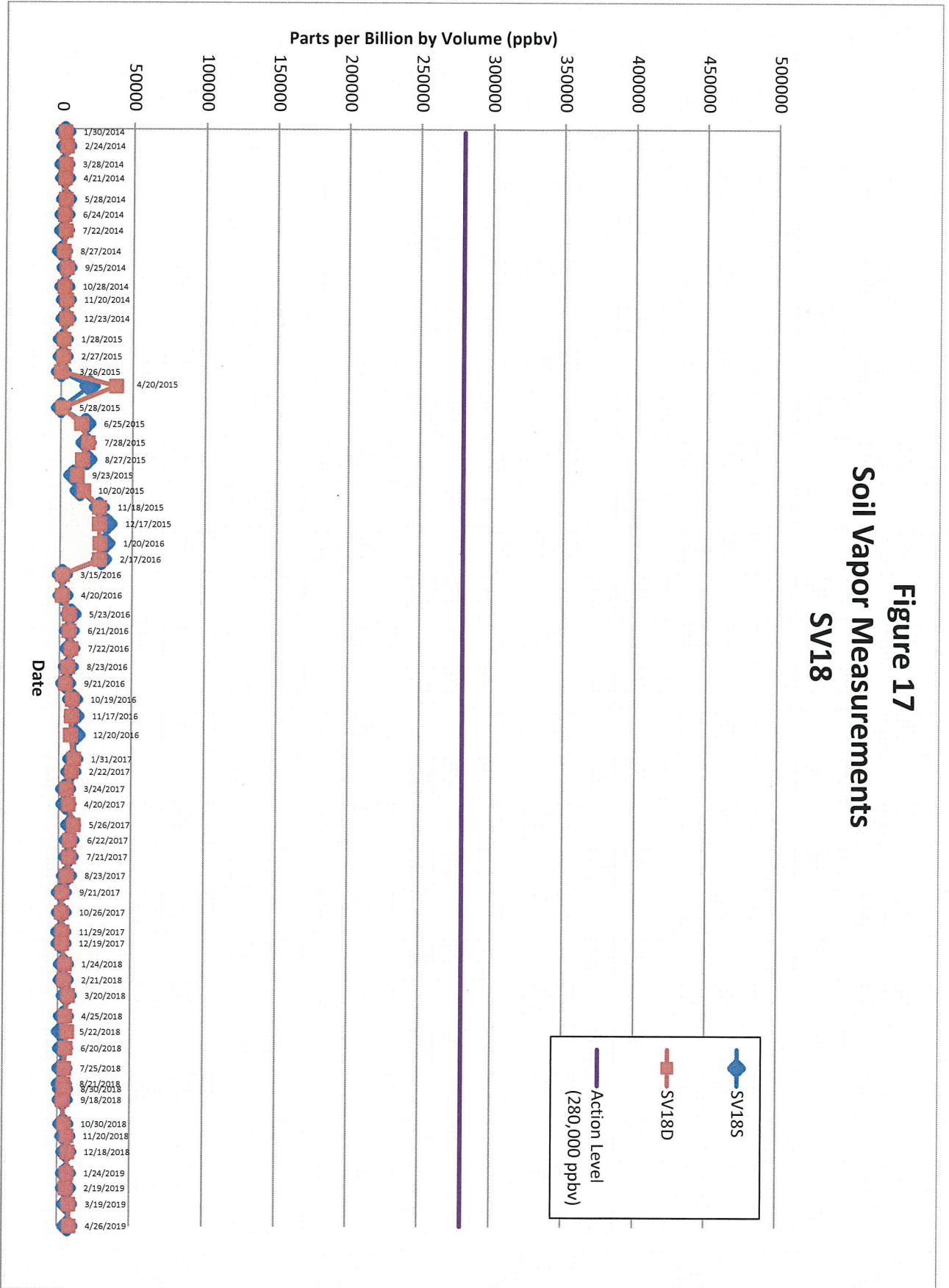
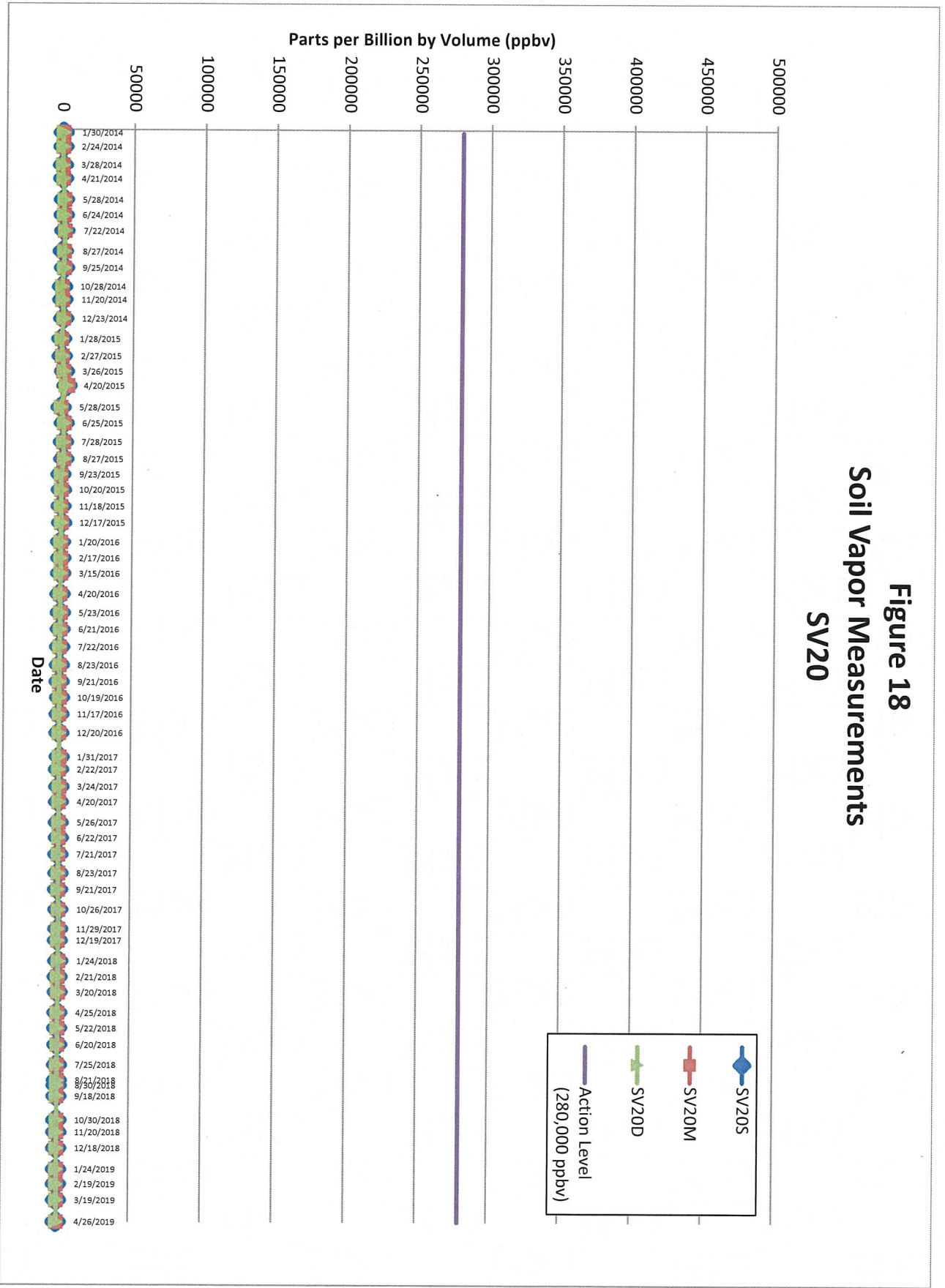


Figure 18
Soil Vapor Measurements
SV20



10 June 2019

From: Deputy Director, Fuel Department, NAVSUP FLC Pearl Harbor, HI
To: Environmental Department, NAVFAC Pearl Harbor, HI

Subj: NAVSUP FLC PEARL HARBOR CAUSATIVE RESEARCH REPORT IRT RED HILL
SOIL VAPOR MONITORING REPORT FOR APRIL 2019

Ref: (a) Red Hill Bulk Fuel Storage Facility Groundwater Protection Plan
(b) Red Hill Soil Vapor Monitoring Report for Round 133, dtd 03 May 2019

1. Ref (a) requires NAVSUP FLCPH investigate possible fuel leaks. Refs (b) reported the following soil vapor monitoring results at the Red Hill Fuel Storage Facility:

- Slightly increasing trends at tanks 2-4, 6-17, and 20
- Strongly increasing trend at tank 5 and 18

2. FLCPH causative research and findings:

a. Reviewed all AFHE Unscheduled Fuel Movement (UFM) Alarm Summaries and UFM Reports. The following UFM's were recorded between sampling events 132 and 133 during the period of 19 Mar to 26 Apr 2019:

b.

04 Apr: RH 15 - Low UFM warning occurred. Maintenance technician diagnosed the problem as probe drift. Trouble ticket 393911 initiated to correct problem. The tank was top-gauged, and tank valves verified closed. Confirmed no release of fuel from the tank occurred. RH 15 successfully passed tank tightness testing on May 02. RH 10 successfully passed tank tightness testing on April 22, 2019

12 Apr: RH 09 - Low UFM warning occurred after evolution was completed. Alarm caused by tank data failure to update after completion of evolution. Rover conducted tank inspection; tank appeared to be normal, and all valves closed. Tank was top-gauged, and the level was in tolerance. Confirmed no release of fuel from the tank occurred. RH 09 successfully passed tank tightness testing on June 01, 2019.

15 Apr: RH 10 - Low UFM warning occurred while tank was updating. Maintenance Technician determined that the problem was caused by the tank being "stuck" in updating status. Technician restarted the system and all conditions returned to normal. Tank gauging completed and it was determined that no fuel released to the environment. RH 10 successfully passed tank tightness testing on May 02, 2019.

c. Reviewed Red Hill Inventory Trend Analysis Reports for April 2019; reports did not reveal evidence of a loss of fuel in any Red Hill tank.

d. Red Hill maintenance and repair contractors did not report any factors that could have influenced increase in trends.

ENCLOSURE(2)

Subj: NAVSUP FLC PEARL HARBOR CAUSATIVE RESEARCH REPORT IRT RED HILL
SOIL VAPOR MONITORING REPORT FOR APRIL 2019

- e. Inspection of the area surrounding all Red Hill tanks did not show evidence of a fuel leak or evidence that fuel was spilled in the area.
 - f. All active tanks have passed tank tightness testing within the required periodicity.
4. There is no evidence of a leaking tank in the Red Hill Complex or evidence of a spill that may have contributed to elevated soil vapor VOC levels in the area of elevated VOC concentrations.

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ou=USN, cn=FLOYD.JOHN.LEWIS.1064149357
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JOHN FLOYD