

US EPA ARCHIVE DOCUMENT

99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|-------------------|-----------------------|--|-------------------------------|-------------------|-------------------|-------------------|----------------|-----------------|---------------------|----------------------------------|----------------|----------------|----------------|-------------------|---|
| Seattle, WA | Boron | 0.01860 | 0.00004 | 0.00002 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Gypsum Products | 7.65000 | 0.01640 | 0.00773 | 0 | 0.01430 | 0.01170 | 0 | 0.00080 | 0.00070 | 0.00020 | 0 | 0.00501 | 0.01000 | 0 | NA | 0.01591 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 130.00000 | 0.25200 | 0.11900 | 0 | 0.21800 | 0.17600 | 0 | 0.01000 | 0.00701 | 0.00300 | 0 | 0.07010 | 0.20000 | 0 | NA | 0.28011 |
| | Micronutrients | 0.03630 | 0.00008 | 0.00004 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00007 | 0 | NA | 0.00010 |
| | Mn | 0.00208 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 22.10000 | 0.04120 | 0.01940 | 0 | 0.04040 | 0.03180 | 0 | 0.00201 | 0.00100 | 0.00030 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03130 |
| | NPK for P2O5 | 10.10000 | 0.01840 | 0.00867 | 0 | 0.01740 | 0.01400 | 0 | 0.00100 | 0.00040 | 0.00010 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01451 |
| | P2O5 - 1 | 8.32000 | 0.01650 | 0.00780 | 0 | 0.01520 | 0.01280 | 0 | 0.00090 | 0.00050 | 0.00020 | 0 | 0.00501 | 0.01000 | 0 | NA | 0.01571 |
| | Potash | 0.16700 | 0.00030 | 0.00014 | 0 | 0.00030 | 0.00024 | 0 | 0.00002 | 0.00001 | 0.00000 | 0 | 0.00009 | 0.00020 | 0 | NA | 0.00030 |
| | S as Nutrient | 3.93000 | 0.00759 | 0.00358 | 0 | 0.00707 | 0.00561 | 0 | 0.00040 | 0.00020 | 0.00007 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00827 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08460 | 0.00018 | 0.00008 | 0 | 0.00015 | 0.00012 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00020 | 0 | NA | 0.00026 |
| | Albuquerque, NM | Boron | 0.02010 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 8.21000 | 0.00576 | 0.00272 | 0 | 0.01310 | 0.01000 | 0 | 0.00090 | 0.00020 | 0.00007 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01527 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 138.00000 | 0.10200 | 0.04810 | 0 | 0.21500 | 0.15500 | 0 | 0.01010 | 0.00300 | 0.00100 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27400 |
| Micronutrients | | 0.04060 | 0.00003 | 0.00001 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00006 | 0 | NA | 0.00008 |
| Mn | | 0.00227 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 24.30000 | 0.01660 | 0.00784 | 0 | 0.03600 | 0.02700 | 0 | 0.00300 | 0.00040 | 0.00010 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03050 |
| NPK for P2O5 | | 10.90000 | 0.00754 | 0.00355 | 0 | 0.01610 | 0.01230 | 0 | 0.00100 | 0.00020 | 0.00005 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01425 |
| P2O5 - 1 | | 9.11000 | 0.00610 | 0.00288 | 0 | 0.01400 | 0.01080 | 0 | 0.00100 | 0.00020 | 0.00006 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01526 |
| Potash | | 0.18600 | 0.00013 | 0.00006 | 0 | 0.00029 | 0.00022 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00009 | 0.00020 | 0 | NA | 0.00029 |
| S as Nutrient | | 4.19000 | 0.00315 | 0.00149 | 0 | 0.00633 | 0.00474 | 0 | 0.00050 | 0.00008 | 0.00002 | 0 | 0.00200 | 0.00401 | 0 | NA | 0.00611 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09250 | 0.00007 | 0.00003 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Atlanta, GA | | Boron | 0.01770 | 0.00004 | 0.00002 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 7.32000 | 0.01400 | 0.00658 | 0 | 0.01320 | 0.01100 | 0 | 0.00080 | 0.00060 | 0.00020 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01580 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 125.00000 | 0.23900 | 0.11300 | 0 | 0.21400 | 0.17200 | 0 | 0.01000 | 0.00600 | 0.00200 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27800 |
| | Micronutrients | 0.03480 | 0.00007 | 0.00003 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00006 | 0 | NA | 0.00008 |
| | Mn | 0.00195 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 20.60000 | 0.03260 | 0.01540 | 0 | 0.03530 | 0.02800 | 0 | 0.00200 | 0.00070 | 0.00030 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.03001 |
| | NPK for P2O5 | 9.51000 | 0.01720 | 0.00811 | 0 | 0.01660 | 0.01330 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01440 |
| | P2O5 - 1 | 7.83000 | 0.01510 | 0.00710 | 0 | 0.01390 | 0.01110 | 0 | 0.00090 | 0.00030 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01540 |
| | Potash | 0.16200 | 0.00028 | 0.00013 | 0 | 0.00028 | 0.00023 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00029 |
| | S as Nutrient | 3.64000 | 0.00658 | 0.00310 | 0 | 0.00639 | 0.00514 | 0 | 0.00040 | 0.00020 | 0.00005 | 0 | 0.00200 | 0.00500 | 0 | NA | 0.00725 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08080 | 0.00015 | 0.00007 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |

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Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Bismarck, ND | Boron | 0.01980 | 0.00001 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA | 0.00005 |
| | Gypsum Products | 8.08000 | 0.00260 | 0.00123 | 0 | 0.01210 | 0.00900 | 0 | 0.00090 | 0.00010 | 0.00003 | 0 | 0.00401 | 0.00901 | 0 | NA | 0.01315 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 138.00000 | 0.04220 | 0.01990 | 0 | 0.19900 | 0.14100 | 0 | 0.01000 | 0.00100 | 0.00040 | 0 | 0.06000 | 0.10000 | 0 | NA | 0.16140 |
| | Micronutrients | 0.03900 | 0.00001 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00221 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 22.80000 | 0.00692 | 0.00326 | 0 | 0.03350 | 0.02470 | 0 | 0.00300 | 0.00020 | 0.00006 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02927 |
| | NPK for P2O5 | 10.90000 | 0.00347 | 0.00164 | 0 | 0.01510 | 0.01110 | 0 | 0.00100 | 0.00006 | 0.00002 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01408 |
| | P2O5 - 1 | 8.93000 | 0.00276 | 0.00130 | 0 | 0.01350 | 0.01000 | 0 | 0.00100 | 0.00008 | 0.00003 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01511 |
| | Potash | 0.17900 | 0.00006 | 0.00003 | 0 | 0.00026 | 0.00019 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00010 | 0 | NA | 0.00017 |
| | S as Nutrient | 4.14000 | 0.00130 | 0.00062 | 0 | 0.00602 | 0.00437 | 0 | 0.00050 | 0.00004 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00605 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09200 | 0.00003 | 0.00001 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| | Boise, ID | Boron | 0.02070 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 8.66000 | 0.00813 | 0.00383 | 0 | 0.01380 | 0.01050 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01540 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 146.00000 | 0.14800 | 0.06990 | 0 | 0.22800 | 0.17400 | 0 | 0.02000 | 0.00400 | 0.00100 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27500 |
| Micronutrients | | 0.04080 | 0.00004 | 0.00002 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00006 | 0 | NA | 0.00009 |
| Mn | | 0.00231 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| NPK as N | | 24.40000 | 0.02260 | 0.01070 | 0 | 0.03980 | 0.03040 | 0 | 0.00300 | 0.00050 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03070 |
| NPK for P2O5 | | 11.20000 | 0.01040 | 0.00489 | 0 | 0.01750 | 0.01350 | 0 | 0.00100 | 0.00020 | 0.00007 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01428 |
| P2O5 - 1 | | 9.30000 | 0.00961 | 0.00453 | 0 | 0.01550 | 0.01210 | 0 | 0.00100 | 0.00030 | 0.00009 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01539 |
| Potash | | 0.18600 | 0.00018 | 0.00009 | 0 | 0.00030 | 0.00023 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| S as Nutrient | | 4.32000 | 0.00412 | 0.00195 | 0 | 0.00671 | 0.00517 | 0 | 0.00050 | 0.00010 | 0.00004 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00814 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09620 | 0.00010 | 0.00005 | 0 | 0.00016 | 0.00012 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Boulder, CO | | Boron | 0.02030 | 0.00003 | 0.00001 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 8.34000 | 0.00959 | 0.00452 | 0 | 0.01410 | 0.01130 | 0 | 0.00090 | 0.00040 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01550 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 145.00000 | 0.14800 | 0.06970 | 0 | 0.22600 | 0.17500 | 0 | 0.02000 | 0.00500 | 0.00200 | 0 | 0.08000 | 0.20000 | 0 | NA | 0.28700 |
| | Micronutrients | 0.03940 | 0.00004 | 0.00002 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00006 | 0 | NA | 0.00009 |
| | Mn | 0.00231 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 23.50000 | 0.02300 | 0.01090 | 0 | 0.03760 | 0.02890 | 0 | 0.00300 | 0.00070 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03090 |
| | NPK for P2O5 | 11.10000 | 0.01130 | 0.00533 | 0 | 0.01720 | 0.01290 | 0 | 0.00100 | 0.00020 | 0.00008 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01429 |
| | P2O5 - 1 | 9.13000 | 0.01020 | 0.00481 | 0 | 0.01470 | 0.01150 | 0 | 0.00100 | 0.00030 | 0.00009 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01539 |
| | Potash | 0.18300 | 0.00020 | 0.00009 | 0 | 0.00030 | 0.00023 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 4.16000 | 0.00474 | 0.00223 | 0 | 0.00668 | 0.00515 | 0 | 0.00050 | 0.00010 | 0.00004 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00814 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09270 | 0.00011 | 0.00005 | 0 | 0.00015 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |

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Vanadium (Adult)

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|-------------------|-----------------------|--|-------------------------------|-------------------|-------------------|-------------------|----------------|-----------------|---------------------|----------------------------------|----------------|----------------|----------------|-------------------|---|
| Casper, WY | Boron | 0.01990 | 0.00001 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA | 0.00005 |
| | Gypsum Products | 8.19000 | 0.00300 | 0.00142 | 0 | 0.01270 | 0.00938 | 0 | 0.00090 | 0.00010 | 0.00003 | 0 | 0.00401 | 0.00900 | 0 | NA | 0.01314 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 142.00000 | 0.04930 | 0.02320 | 0 | 0.20400 | 0.15100 | 0 | 0.01000 | 0.00200 | 0.00050 | 0 | 0.06010 | 0.10000 | 0 | NA | 0.16260 |
| | Micronutrients | 0.03950 | 0.00001 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00223 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 23.90000 | 0.00796 | 0.00376 | 0 | 0.03420 | 0.02480 | 0 | 0.00300 | 0.00020 | 0.00007 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02928 |
| | NPK for P2O5 | 10.70000 | 0.00343 | 0.00162 | 0 | 0.01540 | 0.01130 | 0 | 0.00100 | 0.00007 | 0.00003 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01311 |
| | P2O5 - 1 | 8.96000 | 0.00323 | 0.00152 | 0 | 0.01330 | 0.00996 | 0 | 0.00100 | 0.00009 | 0.00004 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01513 |
| | Potash | 0.17600 | 0.00006 | 0.00003 | 0 | 0.00026 | 0.00019 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00010 | 0 | NA | 0.00017 |
| | S as Nutrient | 4.09000 | 0.00149 | 0.00070 | 0 | 0.00593 | 0.00427 | 0 | 0.00050 | 0.00004 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00605 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09090 | 0.00003 | 0.00002 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |
| | Charleston, SC | Boron | 0.01770 | 0.00003 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 7.36000 | 0.01250 | 0.00589 | 0 | 0.01270 | 0.01020 | 0 | 0.00080 | 0.00040 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01550 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 127.00000 | 0.18400 | 0.08700 | 0 | 0.19900 | 0.15700 | 0 | 0.01000 | 0.00500 | 0.00100 | 0 | 0.06000 | 0.20000 | 0 | NA | 0.26600 |
| Micronutrients | | 0.03560 | 0.00006 | 0.00003 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00200 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 21.40000 | 0.02080 | 0.00981 | 0 | 0.03380 | 0.02640 | 0 | 0.00200 | 0.00060 | 0.00030 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02991 |
| NPK for P2O5 | | 9.83000 | 0.01290 | 0.00607 | 0 | 0.01630 | 0.01290 | 0 | 0.00100 | 0.00030 | 0.00008 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01438 |
| P2O5 - 1 | | 8.15000 | 0.01200 | 0.00566 | 0 | 0.01390 | 0.01070 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01441 |
| Potash | | 0.15900 | 0.00021 | 0.00010 | 0 | 0.00026 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| S as Nutrient | | 3.71000 | 0.00526 | 0.00248 | 0 | 0.00593 | 0.00462 | 0 | 0.00040 | 0.00010 | 0.00004 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00614 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.08390 | 0.00014 | 0.00006 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |
| Chicago, IL | | Boron | 0.01910 | 0.00005 | 0.00002 | 0 | 0.00004 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA |
| | Gypsum Products | 7.78000 | 0.01820 | 0.00859 | 0 | 0.01490 | 0.01240 | 0 | 0.00090 | 0.00070 | 0.00020 | 0 | 0.00600 | 0.01000 | 0 | NA | 0.01690 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 129.00000 | 0.29400 | 0.13900 | 0 | 0.24100 | 0.19800 | 0 | 0.01000 | 0.00900 | 0.00201 | 0 | 0.07010 | 0.20000 | 0 | NA | 0.28111 |
| | Micronutrients | 0.03750 | 0.00009 | 0.00004 | 0 | 0.00007 | 0.00006 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00007 | 0 | NA | 0.00010 |
| | Mn | 0.00210 | 0.00001 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 23.10000 | 0.04040 | 0.01900 | 0 | 0.04220 | 0.03360 | 0 | 0.00201 | 0.00100 | 0.00040 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03140 |
| | NPK for P2O5 | 10.40000 | 0.02240 | 0.01060 | 0 | 0.01870 | 0.01540 | 0 | 0.00100 | 0.00040 | 0.00020 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01560 |
| | P2O5 - 1 | 8.65000 | 0.02070 | 0.00977 | 0 | 0.01630 | 0.01350 | 0 | 0.00100 | 0.00070 | 0.00020 | 0 | 0.00600 | 0.01000 | 0 | NA | 0.01690 |
| | Potash | 0.17600 | 0.00037 | 0.00017 | 0 | 0.00032 | 0.00025 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00009 | 0.00020 | 0 | NA | 0.00030 |
| | S as Nutrient | 4.03000 | 0.00871 | 0.00411 | 0 | 0.00717 | 0.00598 | 0 | 0.00040 | 0.00030 | 0.00007 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00837 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08780 | 0.00019 | 0.00009 | 0 | 0.00016 | 0.00013 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Cleveland, OH | Boron | 0.01920 | 0.00004 | 0.00002 | 0 | 0.00004 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| | Gypsum Products | 7.89000 | 0.01790 | 0.00845 | 0 | 0.01470 | 0.01220 | 0 | 0.00090 | 0.00070 | 0.00020 | 0 | 0.00600 | 0.01000 | 0 | NA | 0.01690 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 132.00000 | 0.27100 | 0.12800 | 0 | 0.23400 | 0.19300 | 0 | 0.01000 | 0.00801 | 0.00300 | 0 | 0.07010 | 0.20000 | 0 | NA | 0.28111 |
| | Micronutrients | 0.03740 | 0.00009 | 0.00004 | 0 | 0.00007 | 0.00006 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00007 | 0 | NA | 0.00010 |
| | Mn | 0.00216 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 22.60000 | 0.04540 | 0.02140 | 0 | 0.04120 | 0.03340 | 0 | 0.00300 | 0.00100 | 0.00040 | 0 | 0.01000 | 0.02010 | 0 | NA | 0.03150 |
| | NPK for P2O5 | 10.60000 | 0.02240 | 0.01060 | 0 | 0.01910 | 0.01560 | 0 | 0.00100 | 0.00040 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01550 |
| | P2O5 - 1 | 8.74000 | 0.01900 | 0.00897 | 0 | 0.01630 | 0.01340 | 0 | 0.00100 | 0.00060 | 0.00020 | 0 | 0.00600 | 0.01000 | 0 | NA | 0.01680 |
| | Potash | 0.17500 | 0.00039 | 0.00019 | 0 | 0.00032 | 0.00027 | 0 | 0.00002 | 0.00001 | 0.00000 | 0 | 0.00009 | 0.00020 | 0 | NA | 0.00030 |
| | S as Nutrient | 4.01000 | 0.00890 | 0.00420 | 0 | 0.00736 | 0.00600 | 0 | 0.00040 | 0.00020 | 0.00006 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00826 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08740 | 0.00019 | 0.00009 | 0 | 0.00016 | 0.00013 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00020 | 0 | NA | 0.00026 |
| | Fresno, CA | Boron | 0.02000 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 8.25000 | 0.00677 | 0.00319 | 0 | 0.01330 | 0.01030 | 0 | 0.00090 | 0.00030 | 0.00008 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01538 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 141.00000 | 0.11100 | 0.05240 | 0 | 0.21300 | 0.15900 | 0 | 0.01000 | 0.00300 | 0.00100 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27400 |
| Micronutrients | | 0.03900 | 0.00003 | 0.00001 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00006 | 0 | NA | 0.00008 |
| Mn | | 0.00229 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 23.50000 | 0.01850 | 0.00873 | 0 | 0.03610 | 0.02760 | 0 | 0.00300 | 0.00040 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03060 |
| NPK for P2O5 | | 10.70000 | 0.00826 | 0.00390 | 0 | 0.01640 | 0.01240 | 0 | 0.00100 | 0.00020 | 0.00006 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01426 |
| P2O5 - 1 | | 9.01000 | 0.00736 | 0.00347 | 0 | 0.01440 | 0.01090 | 0 | 0.00100 | 0.00020 | 0.00007 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01527 |
| Potash | | 0.18600 | 0.00015 | 0.00007 | 0 | 0.00029 | 0.00022 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| S as Nutrient | | 4.15000 | 0.00350 | 0.00165 | 0 | 0.00655 | 0.00494 | 0 | 0.00050 | 0.00009 | 0.00003 | 0 | 0.00201 | 0.00500 | 0 | NA | 0.00713 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09290 | 0.00008 | 0.00004 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Grand Island, NE | | Boron | 0.02000 | 0.00001 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 8.43000 | 0.00361 | 0.00170 | 0 | 0.01280 | 0.00954 | 0 | 0.00090 | 0.00010 | 0.00004 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01514 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 140.00000 | 0.05640 | 0.02660 | 0 | 0.20700 | 0.14800 | 0 | 0.02000 | 0.00200 | 0.00060 | 0 | 0.06010 | 0.20000 | 0 | NA | 0.26270 |
| | Micronutrients | 0.03930 | 0.00002 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00228 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 23.40000 | 0.00895 | 0.00422 | 0 | 0.03540 | 0.02620 | 0 | 0.00300 | 0.00020 | 0.00008 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03028 |
| | NPK for P2O5 | 10.80000 | 0.00405 | 0.00191 | 0 | 0.01560 | 0.01150 | 0 | 0.00100 | 0.00009 | 0.00003 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01412 |
| | P2O5 - 1 | 9.10000 | 0.00379 | 0.00179 | 0 | 0.01370 | 0.01040 | 0 | 0.00100 | 0.00010 | 0.00004 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01514 |
| | Potash | 0.17800 | 0.00008 | 0.00004 | 0 | 0.00027 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00010 | 0 | NA | 0.00017 |
| | S as Nutrient | 4.22000 | 0.00194 | 0.00091 | 0 | 0.00631 | 0.00451 | 0 | 0.00050 | 0.00005 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00606 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09020 | 0.00004 | 0.00002 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Harrisburg, PA | Boron | 0.01890 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| | Gypsum Products | 7.77000 | 0.00656 | 0.00309 | 0 | 0.01250 | 0.00952 | 0 | 0.00090 | 0.00030 | 0.00008 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01538 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 131.00000 | 0.11100 | 0.05230 | 0 | 0.20500 | 0.15400 | 0 | 0.01000 | 0.00301 | 0.00100 | 0 | 0.06010 | 0.20000 | 0 | NA | 0.26411 |
| | Micronutrients | 0.03730 | 0.00003 | 0.00002 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00210 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 21.90000 | 0.01780 | 0.00840 | 0 | 0.03480 | 0.02590 | 0 | 0.00300 | 0.00050 | 0.00020 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02971 |
| | NPK for P2O5 | 10.30000 | 0.00856 | 0.00404 | 0 | 0.01560 | 0.01140 | 0 | 0.00100 | 0.00020 | 0.00005 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01425 |
| | P2O5 - 1 | 8.46000 | 0.00716 | 0.00338 | 0 | 0.01330 | 0.01010 | 0 | 0.00100 | 0.00020 | 0.00008 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01528 |
| | Potash | 0.17200 | 0.00013 | 0.00006 | 0 | 0.00027 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00020 | 0 | NA | 0.00027 |
| | S as Nutrient | 3.95000 | 0.00336 | 0.00158 | 0 | 0.00614 | 0.00458 | 0 | 0.00040 | 0.00010 | 0.00003 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00613 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08610 | 0.00007 | 0.00004 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |
| | Hartford, CT | Boron | 0.01810 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA |
| Gypsum Products | | 7.53000 | 0.00594 | 0.00280 | 0 | 0.01190 | 0.00910 | 0 | 0.00080 | 0.00020 | 0.00007 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01328 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 128.00000 | 0.09540 | 0.04500 | 0 | 0.19200 | 0.14100 | 0 | 0.01000 | 0.00300 | 0.00090 | 0 | 0.06000 | 0.20000 | 0 | NA | 0.26390 |
| Micronutrients | | 0.03630 | 0.00003 | 0.00002 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00206 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 21.90000 | 0.01600 | 0.00755 | 0 | 0.03370 | 0.02500 | 0 | 0.00201 | 0.00030 | 0.00010 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02941 |
| NPK for P2O5 | | 9.71000 | 0.00840 | 0.00396 | 0 | 0.01540 | 0.01170 | 0 | 0.00100 | 0.00010 | 0.00004 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01315 |
| P2O5 - 1 | | 8.19000 | 0.00616 | 0.00291 | 0 | 0.01310 | 0.00988 | 0 | 0.00090 | 0.00020 | 0.00007 | 0 | 0.00401 | 0.00901 | 0 | NA | 0.01329 |
| Potash | | 0.16700 | 0.00013 | 0.00006 | 0 | 0.00025 | 0.00019 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00010 | 0 | NA | 0.00017 |
| S as Nutrient | | 3.84000 | 0.00296 | 0.00140 | 0 | 0.00595 | 0.00449 | 0 | 0.00040 | 0.00007 | 0.00002 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00609 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.08480 | 0.00007 | 0.00003 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Houston, TX | | Boron | 0.01840 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA |
| | Gypsum Products | 7.60000 | 0.00548 | 0.00258 | 0 | 0.01190 | 0.00910 | 0 | 0.00080 | 0.00020 | 0.00006 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01426 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 130.00000 | 0.08180 | 0.03860 | 0 | 0.18900 | 0.13900 | 0 | 0.01000 | 0.00201 | 0.00060 | 0 | 0.06000 | 0.10000 | 0 | NA | 0.16261 |
| | Micronutrients | 0.03530 | 0.00003 | 0.00001 | 0 | 0.00005 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00208 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 21.10000 | 0.01210 | 0.00570 | 0 | 0.03280 | 0.02390 | 0 | 0.00200 | 0.00030 | 0.00010 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02941 |
| | NPK for P2O5 | 9.83000 | 0.00622 | 0.00293 | 0 | 0.01450 | 0.01070 | 0 | 0.00100 | 0.00010 | 0.00004 | 0 | 0.00301 | 0.00900 | 0 | NA | 0.01215 |
| | P2O5 - 1 | 8.10000 | 0.00570 | 0.00269 | 0 | 0.01220 | 0.00946 | 0 | 0.00090 | 0.00010 | 0.00005 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01416 |
| | Potash | 0.16200 | 0.00010 | 0.00005 | 0 | 0.00024 | 0.00018 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00020 | 0 | NA | 0.00027 |
| | S as Nutrient | 3.81000 | 0.00269 | 0.00127 | 0 | 0.00564 | 0.00420 | 0 | 0.00040 | 0.00007 | 0.00002 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00609 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08360 | 0.00007 | 0.00003 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Huntington, WV | Boron | 0.01890 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| | Gypsum Products | 7.69000 | 0.00881 | 0.00416 | 0 | 0.01290 | 0.01000 | 0 | 0.00090 | 0.00040 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01550 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 134.00000 | 0.15200 | 0.07160 | 0 | 0.21600 | 0.16600 | 0 | 0.01000 | 0.00401 | 0.00100 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27501 |
| | Micronutrients | 0.03690 | 0.00004 | 0.00002 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00006 | 0 | NA | 0.00008 |
| | Mn | 0.00211 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 22.50000 | 0.02290 | 0.01080 | 0 | 0.03570 | 0.02650 | 0 | 0.00201 | 0.00050 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03070 |
| | NPK for P2O5 | 10.30000 | 0.01130 | 0.00535 | 0 | 0.01640 | 0.01250 | 0 | 0.00100 | 0.00020 | 0.00008 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01428 |
| | P2O5 - 1 | 8.56000 | 0.00990 | 0.00467 | 0 | 0.01420 | 0.01100 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01540 |
| | Potash | 0.16600 | 0.00019 | 0.00009 | 0 | 0.00028 | 0.00021 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 3.87000 | 0.00433 | 0.00204 | 0 | 0.00630 | 0.00489 | 0 | 0.00040 | 0.00010 | 0.00004 | 0 | 0.00200 | 0.00500 | 0 | NA | 0.00714 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08810 | 0.00010 | 0.00005 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| | Las Vegas, NV | Boron | 0.02030 | 0.00001 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA |
| Gypsum Products | | 8.17000 | 0.00316 | 0.00149 | 0 | 0.01220 | 0.00910 | 0 | 0.00090 | 0.00010 | 0.00004 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01415 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 144.00000 | 0.04440 | 0.02090 | 0 | 0.20800 | 0.14700 | 0 | 0.01000 | 0.00101 | 0.00050 | 0 | 0.06010 | 0.10000 | 0 | NA | 0.16161 |
| Micronutrients | | 0.03910 | 0.00001 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00225 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 24.00000 | 0.00734 | 0.00346 | 0 | 0.03400 | 0.02460 | 0 | 0.00300 | 0.00020 | 0.00007 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02928 |
| NPK for P2O5 | | 10.90000 | 0.00385 | 0.00182 | 0 | 0.01640 | 0.01190 | 0 | 0.00100 | 0.00008 | 0.00003 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01312 |
| P2O5 - 1 | | 9.09000 | 0.00324 | 0.00153 | 0 | 0.01330 | 0.00958 | 0 | 0.00100 | 0.00010 | 0.00003 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01513 |
| Potash | | 0.18600 | 0.00006 | 0.00003 | 0 | 0.00027 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| S as Nutrient | | 4.27000 | 0.00156 | 0.00074 | 0 | 0.00606 | 0.00443 | 0 | 0.00050 | 0.00004 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00605 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09300 | 0.00003 | 0.00002 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Los Angeles, CA | | Boron | 0.01990 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 8.22000 | 0.00848 | 0.00400 | 0 | 0.01350 | 0.01040 | 0 | 0.00090 | 0.00030 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01540 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 138.00000 | 0.14500 | 0.06840 | 0 | 0.22200 | 0.17000 | 0 | 0.02000 | 0.00401 | 0.00200 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27601 |
| | Micronutrients | 0.03890 | 0.00004 | 0.00002 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00006 | 0 | NA | 0.00008 |
| | Mn | 0.00224 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 23.20000 | 0.02340 | 0.01100 | 0 | 0.03570 | 0.02720 | 0 | 0.00300 | 0.00060 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03080 |
| | NPK for P2O5 | 10.70000 | 0.01130 | 0.00532 | 0 | 0.01660 | 0.01260 | 0 | 0.00100 | 0.00020 | 0.00007 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01428 |
| | P2O5 - 1 | 8.94000 | 0.00910 | 0.00429 | 0 | 0.01450 | 0.01130 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01540 |
| | Potash | 0.17700 | 0.00019 | 0.00009 | 0 | 0.00029 | 0.00022 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 4.11000 | 0.00445 | 0.00210 | 0 | 0.00653 | 0.00516 | 0 | 0.00040 | 0.00010 | 0.00004 | 0 | 0.00200 | 0.00500 | 0 | NA | 0.00714 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09120 | 0.00010 | 0.00004 | 0 | 0.00015 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Memphis, TN | Boron | 0.01750 | 0.00003 | 0.00002 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| | Gypsum Products | 7.22000 | 0.01400 | 0.00659 | 0 | 0.01310 | 0.01060 | 0 | 0.00080 | 0.00050 | 0.00020 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01471 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 121.00000 | 0.21000 | 0.09900 | 0 | 0.20800 | 0.16200 | 0 | 0.01000 | 0.00700 | 0.00200 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27900 |
| | Micronutrients | 0.03480 | 0.00007 | 0.00003 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00006 | 0 | NA | 0.00009 |
| | Mn | 0.00195 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 20.30000 | 0.03290 | 0.01550 | 0 | 0.03720 | 0.03030 | 0 | 0.00200 | 0.00080 | 0.00030 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03110 |
| | NPK for P2O5 | 9.84000 | 0.01730 | 0.00815 | 0 | 0.01620 | 0.01370 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01440 |
| | P2O5 - 1 | 8.03000 | 0.01590 | 0.00751 | 0 | 0.01460 | 0.01210 | 0 | 0.00090 | 0.00040 | 0.00020 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01461 |
| | Potash | 0.15400 | 0.00028 | 0.00013 | 0 | 0.00028 | 0.00023 | 0 | 0.00002 | 0.00001 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00029 |
| | S as Nutrient | 3.68000 | 0.00692 | 0.00326 | 0 | 0.00642 | 0.00526 | 0 | 0.00040 | 0.00020 | 0.00006 | 0 | 0.00200 | 0.00401 | 0 | NA | 0.00627 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08070 | 0.00015 | 0.00007 | 0 | 0.00015 | 0.00012 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |
| | Miami, FL | Boron | 0.01800 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00001 | 0.00003 | 0 | NA |
| Gypsum Products | | 7.22000 | 0.00564 | 0.00266 | 0 | 0.01130 | 0.00845 | 0 | 0.00080 | 0.00010 | 0.00005 | 0 | 0.00400 | 0.00800 | 0 | NA | 0.01215 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 127.00000 | 0.05880 | 0.02770 | 0 | 0.18200 | 0.13000 | 0 | 0.01000 | 0.00200 | 0.00050 | 0 | 0.05010 | 0.10000 | 0 | NA | 0.15260 |
| Micronutrients | | 0.03550 | 0.00003 | 0.00001 | 0 | 0.00005 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| Mn | | 0.00200 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 18.10000 | 0.00969 | 0.00457 | 0 | 0.02630 | 0.01930 | 0 | 0.00200 | 0.00020 | 0.00007 | 0 | 0.00800 | 0.02000 | 0 | NA | 0.02827 |
| NPK for P2O5 | | 9.13000 | 0.00399 | 0.00188 | 0 | 0.01380 | 0.01020 | 0 | 0.00100 | 0.00008 | 0.00003 | 0 | 0.00300 | 0.00700 | 0 | NA | 0.01011 |
| P2O5 - 1 | | 8.09000 | 0.00450 | 0.00212 | 0 | 0.01200 | 0.00875 | 0 | 0.00090 | 0.00010 | 0.00004 | 0 | 0.00400 | 0.00900 | 0 | NA | 0.01314 |
| Potash | | 0.14800 | 0.00006 | 0.00003 | 0 | 0.00022 | 0.00016 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00006 | 0.00010 | 0 | NA | 0.00016 |
| S as Nutrient | | 3.72000 | 0.00258 | 0.00122 | 0 | 0.00555 | 0.00415 | 0 | 0.00040 | 0.00004 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00605 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.08420 | 0.00005 | 0.00002 | 0 | 0.00012 | 0.00009 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |
| Minneapolis, MN | | Boron | 0.01960 | 0.00004 | 0.00002 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA |
| | Gypsum Products | 8.24000 | 0.01330 | 0.00627 | 0 | 0.01430 | 0.01150 | 0 | 0.00090 | 0.00050 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01560 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 138.00000 | 0.23600 | 0.11100 | 0 | 0.23400 | 0.18400 | 0 | 0.01010 | 0.00700 | 0.00200 | 0 | 0.08000 | 0.20000 | 0 | NA | 0.28900 |
| | Micronutrients | 0.03850 | 0.00007 | 0.00003 | 0 | 0.00007 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00007 | 0 | NA | 0.00010 |
| | Mn | 0.00217 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 23.10000 | 0.03240 | 0.01530 | 0 | 0.03750 | 0.02960 | 0 | 0.00300 | 0.00090 | 0.00030 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03120 |
| | NPK for P2O5 | 10.30000 | 0.01600 | 0.00757 | 0 | 0.01720 | 0.01390 | 0 | 0.00100 | 0.00030 | 0.00009 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01440 |
| | P2O5 - 1 | 8.84000 | 0.01450 | 0.00683 | 0 | 0.01520 | 0.01220 | 0 | 0.00100 | 0.00040 | 0.00010 | 0 | 0.00600 | 0.01000 | 0 | NA | 0.01650 |
| | Potash | 0.17700 | 0.00028 | 0.00013 | 0 | 0.00030 | 0.00024 | 0 | 0.00002 | 0.00001 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00029 |
| | S as Nutrient | 4.07000 | 0.00663 | 0.00313 | 0 | 0.00692 | 0.00546 | 0 | 0.00040 | 0.00020 | 0.00005 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00825 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09150 | 0.00016 | 0.00007 | 0 | 0.00016 | 0.00013 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Philadelphia, PA | Boron | 0.01850 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA | 0.00006 |
| | Gypsum Products | 7.53000 | 0.00722 | 0.00340 | 0 | 0.01220 | 0.00963 | 0 | 0.00090 | 0.00030 | 0.00008 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01538 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 128.00000 | 0.11400 | 0.05350 | 0 | 0.19600 | 0.15200 | 0 | 0.01000 | 0.00300 | 0.00100 | 0 | 0.06000 | 0.10100 | 0 | NA | 0.16500 |
| | Micronutrients | 0.03640 | 0.00003 | 0.00002 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00202 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 21.30000 | 0.01550 | 0.00731 | 0 | 0.03450 | 0.02590 | 0 | 0.00201 | 0.00040 | 0.00020 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02961 |
| | NPK for P2O5 | 10.10000 | 0.00854 | 0.00403 | 0 | 0.01520 | 0.01140 | 0 | 0.00100 | 0.00020 | 0.00004 | 0 | 0.00400 | 0.00900 | 0 | NA | 0.01324 |
| | P2O5 - 1 | 8.29000 | 0.00711 | 0.00336 | 0 | 0.01320 | 0.01000 | 0 | 0.00100 | 0.00020 | 0.00007 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01428 |
| | Potash | 0.17100 | 0.00017 | 0.00008 | 0 | 0.00027 | 0.00021 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 3.84000 | 0.00352 | 0.00166 | 0 | 0.00591 | 0.00460 | 0 | 0.00040 | 0.00009 | 0.00002 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00611 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08680 | 0.00008 | 0.00004 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |
| | Phoenix, AZ | Boron | 0.02040 | 0.00001 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 8.18000 | 0.00354 | 0.00167 | 0 | 0.01260 | 0.00942 | 0 | 0.00090 | 0.00020 | 0.00005 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01426 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 142.00000 | 0.05880 | 0.02770 | 0 | 0.20700 | 0.15300 | 0 | 0.02000 | 0.00200 | 0.00060 | 0 | 0.06010 | 0.20000 | 0 | NA | 0.26270 |
| Micronutrients | | 0.03970 | 0.00002 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00227 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 23.40000 | 0.00986 | 0.00465 | 0 | 0.03550 | 0.02580 | 0 | 0.00300 | 0.00020 | 0.00009 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02930 |
| NPK for P2O5 | | 11.20000 | 0.00465 | 0.00219 | 0 | 0.01590 | 0.01190 | 0 | 0.00100 | 0.00009 | 0.00003 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01412 |
| P2O5 - 1 | | 9.11000 | 0.00398 | 0.00188 | 0 | 0.01370 | 0.01030 | 0 | 0.00100 | 0.00010 | 0.00004 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01514 |
| Potash | | 0.18000 | 0.00008 | 0.00004 | 0 | 0.00028 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| S as Nutrient | | 4.18000 | 0.00178 | 0.00084 | 0 | 0.00606 | 0.00447 | 0 | 0.00050 | 0.00005 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00606 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09290 | 0.00004 | 0.00002 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Portland, ME | | Boron | 0.01730 | 0.00003 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 7.34000 | 0.01200 | 0.00566 | 0 | 0.01290 | 0.01020 | 0 | 0.00080 | 0.00050 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01560 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 123.00000 | 0.18700 | 0.08830 | 0 | 0.20600 | 0.16200 | 0 | 0.01000 | 0.00501 | 0.00200 | 0 | 0.06010 | 0.20000 | 0 | NA | 0.26711 |
| | Micronutrients | 0.03410 | 0.00006 | 0.00003 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00198 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 20.20000 | 0.02850 | 0.01340 | 0 | 0.03280 | 0.02610 | 0 | 0.00200 | 0.00070 | 0.00030 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.03001 |
| | NPK for P2O5 | 9.37000 | 0.01400 | 0.00659 | 0 | 0.01590 | 0.01250 | 0 | 0.00100 | 0.00030 | 0.00009 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01340 |
| | P2O5 - 1 | 7.81000 | 0.01190 | 0.00562 | 0 | 0.01350 | 0.01090 | 0 | 0.00090 | 0.00030 | 0.00010 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01441 |
| | Potash | 0.15400 | 0.00022 | 0.00010 | 0 | 0.00026 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 3.75000 | 0.00684 | 0.00323 | 0 | 0.00653 | 0.00524 | 0 | 0.00040 | 0.00020 | 0.00005 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00625 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08060 | 0.00014 | 0.00006 | 0 | 0.00014 | 0.00011 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00015 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|--------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| Raleigh-Durham, NC | Boron | 0.01790 | 0.00005 | 0.00002 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Gypsum Products | 7.48000 | 0.01590 | 0.00750 | 0 | 0.01340 | 0.01090 | 0 | 0.00090 | 0.00060 | 0.00020 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01580 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 127.00000 | 0.24800 | 0.11700 | 0 | 0.21600 | 0.17900 | 0 | 0.01000 | 0.00800 | 0.00300 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.28100 |
| | Micronutrients | 0.03550 | 0.00008 | 0.00004 | 0 | 0.00007 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00007 | 0 | NA | 0.00009 |
| | Mn | 0.00204 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 20.90000 | 0.03390 | 0.01600 | 0 | 0.03590 | 0.02890 | 0 | 0.00200 | 0.00090 | 0.00030 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03120 |
| | NPK for P2O5 | 9.98000 | 0.02110 | 0.00996 | 0 | 0.01620 | 0.01350 | 0 | 0.00100 | 0.00040 | 0.00010 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01450 |
| | P2O5 - 1 | 8.20000 | 0.01750 | 0.00826 | 0 | 0.01440 | 0.01210 | 0 | 0.00090 | 0.00050 | 0.00020 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01570 |
| | Potash | 0.16700 | 0.00035 | 0.00017 | 0 | 0.00029 | 0.00023 | 0 | 0.00002 | 0.00001 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00029 |
| | S as Nutrient | 3.82000 | 0.00799 | 0.00377 | 0 | 0.00646 | 0.00525 | 0 | 0.00040 | 0.00020 | 0.00006 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00826 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.08540 | 0.00021 | 0.00010 | 0 | 0.00015 | 0.00013 | 0 | 0.00001 | 0.00001 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |
| | Salem, OR | Boron | 0.01850 | 0.00002 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| Gypsum Products | | 7.59000 | 0.00637 | 0.00301 | 0 | 0.01230 | 0.00947 | 0 | 0.00080 | 0.00030 | 0.00007 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01438 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 130.00000 | 0.10500 | 0.04930 | 0 | 0.20100 | 0.14900 | 0 | 0.01000 | 0.00300 | 0.00100 | 0 | 0.07000 | 0.10000 | 0 | NA | 0.17400 |
| Micronutrients | | 0.03630 | 0.00003 | 0.00001 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00207 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 21.30000 | 0.01570 | 0.00739 | 0 | 0.03330 | 0.02510 | 0 | 0.00300 | 0.00040 | 0.00020 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02961 |
| NPK for P2O5 | | 10.20000 | 0.00762 | 0.00359 | 0 | 0.01570 | 0.01140 | 0 | 0.00100 | 0.00010 | 0.00005 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01316 |
| P2O5 - 1 | | 8.44000 | 0.00698 | 0.00329 | 0 | 0.01320 | 0.01010 | 0 | 0.00100 | 0.00020 | 0.00007 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01527 |
| Potash | | 0.16300 | 0.00013 | 0.00006 | 0 | 0.00026 | 0.00020 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00020 | 0 | NA | 0.00027 |
| S as Nutrient | | 3.87000 | 0.00322 | 0.00152 | 0 | 0.00597 | 0.00456 | 0 | 0.00040 | 0.00007 | 0.00002 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00609 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.08600 | 0.00007 | 0.00003 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| Salt Lake City, UT | | Boron | 0.02050 | 0.00003 | 0.00001 | 0 | 0.00003 | 0.00003 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00004 | 0 | NA |
| | Gypsum Products | 8.40000 | 0.01060 | 0.00500 | 0 | 0.01390 | 0.01130 | 0 | 0.00090 | 0.00050 | 0.00010 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01560 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 148.00000 | 0.16400 | 0.07730 | 0 | 0.22900 | 0.17600 | 0 | 0.02000 | 0.00500 | 0.00101 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27601 |
| | Micronutrients | 0.04050 | 0.00006 | 0.00003 | 0 | 0.00007 | 0.00005 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00006 | 0 | NA | 0.00009 |
| | Mn | 0.00228 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00001 |
| | NPK as N | 24.50000 | 0.02630 | 0.01240 | 0 | 0.03870 | 0.03030 | 0 | 0.00300 | 0.00070 | 0.00020 | 0 | 0.01000 | 0.02000 | 0 | NA | 0.03090 |
| | NPK for P2O5 | 11.00000 | 0.01320 | 0.00621 | 0 | 0.01780 | 0.01410 | 0 | 0.00100 | 0.00030 | 0.00009 | 0 | 0.00401 | 0.01000 | 0 | NA | 0.01440 |
| | P2O5 - 1 | 9.31000 | 0.01170 | 0.00551 | 0 | 0.01570 | 0.01240 | 0 | 0.00100 | 0.00030 | 0.00010 | 0 | 0.00501 | 0.01000 | 0 | NA | 0.01541 |
| | Potash | 0.17900 | 0.00020 | 0.00010 | 0 | 0.00029 | 0.00023 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00020 | 0 | NA | 0.00028 |
| | S as Nutrient | 4.42000 | 0.00543 | 0.00256 | 0 | 0.00714 | 0.00569 | 0 | 0.00050 | 0.00020 | 0.00004 | 0 | 0.00300 | 0.00500 | 0 | NA | 0.00824 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09630 | 0.00012 | 0.00006 | 0 | 0.00016 | 0.00012 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00016 |

**99th Percentile Media Concentrations and Risks from Application of Fertilizer Products
Vanadium (Adult)**

| Climate Region | Product | soil conc (mg/kg) | fruit conc (mg/kg-DW) | above-ground vegetable conc (mg/kg-DW) | below-ground veg conc (mg/kg) | beef conc (mg/kg) | milk conc (mg/kg) | fish conc (mg/kg) | Soil Ingestion | Fruit Ingestion | Vegetable Ingestion | Below-ground Vegetable Ingestion | Beef Ingestion | Milk Ingestion | Fish Ingestion | Direct Inhalation | All Indirect Pathways Combined ¹ |
|-------------------|------------------|----------------------|--------------------------|---|-------------------------------------|----------------------|----------------------|----------------------|-------------------|--------------------|------------------------|--|-------------------|-------------------|-------------------|----------------------|---|
| San Francisco, CA | Boron | 0.02010 | 0.00001 | 0.00001 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA | 0.00005 |
| | Gypsum Products | 8.32000 | 0.00565 | 0.00266 | 0 | 0.01310 | 0.00975 | 0 | 0.00090 | 0.00020 | 0.00007 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01527 |
| | Iron | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Liming Materials | 141.00000 | 0.09210 | 0.04340 | 0 | 0.21100 | 0.15600 | 0 | 0.02000 | 0.00300 | 0.00080 | 0 | 0.07000 | 0.20000 | 0 | NA | 0.27380 |
| | Micronutrients | 0.03950 | 0.00003 | 0.00001 | 0 | 0.00006 | 0.00005 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| | Mn | 0.00224 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| | NPK as N | 24.10000 | 0.01610 | 0.00759 | 0 | 0.03610 | 0.02630 | 0 | 0.00300 | 0.00040 | 0.00010 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02951 |
| | NPK for P2O5 | 10.70000 | 0.00716 | 0.00338 | 0 | 0.01560 | 0.01170 | 0 | 0.00100 | 0.00010 | 0.00005 | 0 | 0.00400 | 0.01000 | 0 | NA | 0.01415 |
| | P2O5 - 1 | 8.85000 | 0.00601 | 0.00284 | 0 | 0.01320 | 0.00998 | 0 | 0.00090 | 0.00020 | 0.00006 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01526 |
| | Potash | 0.18300 | 0.00012 | 0.00006 | 0 | 0.00028 | 0.00021 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00007 | 0.00020 | 0 | NA | 0.00027 |
| | S as Nutrient | 4.11000 | 0.00283 | 0.00133 | 0 | 0.00607 | 0.00458 | 0 | 0.00040 | 0.00009 | 0.00002 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00611 |
| | S as Ph | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| | Zinc | 0.09160 | 0.00006 | 0.00003 | 0 | 0.00014 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00005 | 0.00010 | 0 | NA | 0.00015 |
| | Winnemucca, NV | Boron | 0.02020 | 0.00000 | 0.00000 | 0 | 0.00003 | 0.00002 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00003 | 0 | NA |
| Gypsum Products | | 8.20000 | 0.00137 | 0.00065 | 0 | 0.01200 | 0.00881 | 0 | 0.00090 | 0.00005 | 0.00002 | 0 | 0.00401 | 0.00900 | 0 | NA | 0.01308 |
| Iron | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Liming Materials | | 139.00000 | 0.02300 | 0.01090 | 0 | 0.19400 | 0.14100 | 0 | 0.02000 | 0.00070 | 0.00020 | 0 | 0.06010 | 0.10000 | 0 | NA | 0.16100 |
| Micronutrients | | 0.03940 | 0.00001 | 0.00000 | 0 | 0.00006 | 0.00004 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00002 | 0.00005 | 0 | NA | 0.00007 |
| Mn | | 0.00231 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0.00000 | 0 | 0.00000 | 0.00000 | 0 | NA | 0.00000 |
| NPK as N | | 22.60000 | 0.00350 | 0.00165 | 0 | 0.03250 | 0.02320 | 0 | 0.00300 | 0.00009 | 0.00003 | 0 | 0.00901 | 0.02000 | 0 | NA | 0.02913 |
| NPK for P2O5 | | 10.80000 | 0.00175 | 0.00083 | 0 | 0.01470 | 0.01090 | 0 | 0.00100 | 0.00003 | 0.00001 | 0 | 0.00400 | 0.00901 | 0 | NA | 0.01305 |
| P2O5 - 1 | | 9.12000 | 0.00148 | 0.00070 | 0 | 0.01330 | 0.00972 | 0 | 0.00100 | 0.00005 | 0.00002 | 0 | 0.00500 | 0.01000 | 0 | NA | 0.01507 |
| Potash | | 0.18500 | 0.00003 | 0.00001 | 0 | 0.00026 | 0.00019 | 0 | 0.00002 | 0.00000 | 0.00000 | 0 | 0.00008 | 0.00010 | 0 | NA | 0.00018 |
| S as Nutrient | | 4.21000 | 0.00074 | 0.00035 | 0 | 0.00606 | 0.00429 | 0 | 0.00050 | 0.00002 | 0.00001 | 0 | 0.00200 | 0.00400 | 0 | NA | 0.00603 |
| S as Ph | | NA | NA | NA | NA | NA | NA | 0 | NA | NA | NA | NA | NA | NA | 0 | NA | NA |
| Zinc | | 0.09240 | 0.00001 | 0.00001 | 0 | 0.00013 | 0.00010 | 0 | 0.00001 | 0.00000 | 0.00000 | 0 | 0.00004 | 0.00010 | 0 | NA | 0.00014 |

¹ All Indirect Pathways Combined includes Fruit, Vegetable, Below-ground Vegetable, Beef, and Milk Ingestion.

Numbers less than 0.00001 appear as a default of 0.00000.