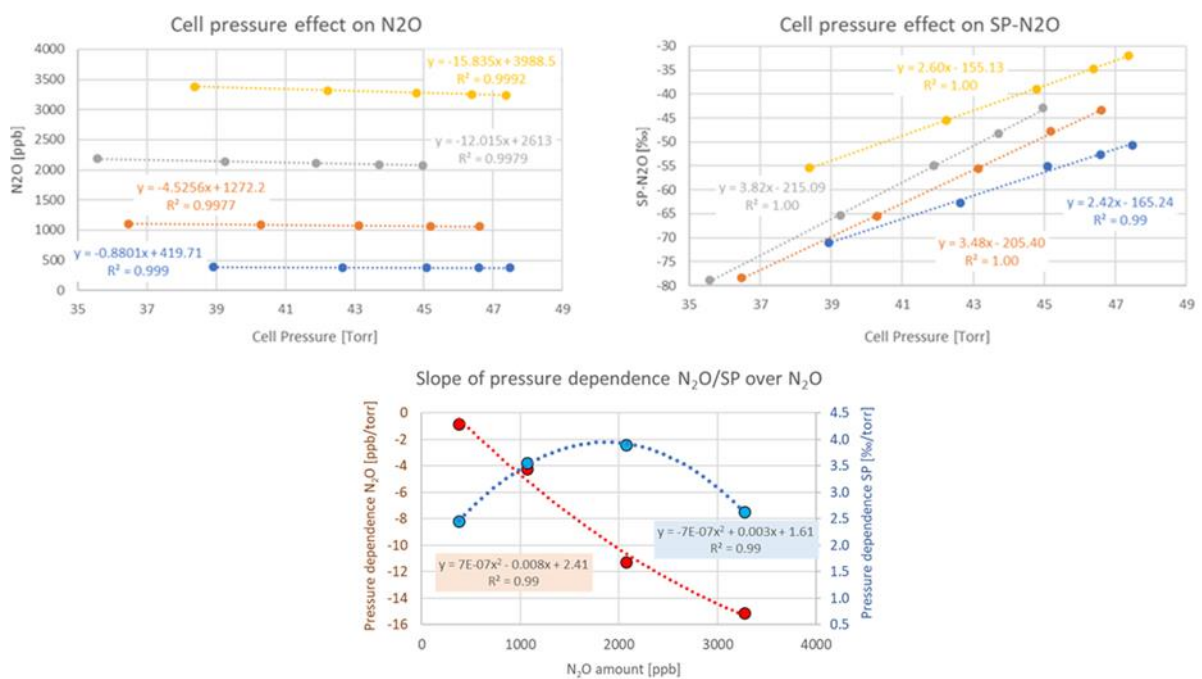


Name	$\delta^{15}\text{N}_{\text{AIR}}$	$\delta^{15}\text{N}^{\alpha}_{\text{AIR}}$	$\delta^{15}\text{N}^{\beta}_{\text{AIR}}$	$\delta^{18}\text{O}_{\text{VSMOW-SLAP}}$	$S_{\text{P}}$
USGS51	$+1.32 \pm 0.04 \text{ ‰}$	$+0.48 \pm 0.09 \text{ ‰}$	$+2.15 \pm 0.12 \text{ ‰}$	$+41.23 \pm 0.04 \text{ ‰}$	$-1.67 \text{ ‰}$
USGS52	$+0.44 \pm 0.02 \text{ ‰}$	$+13.52 \pm 0.04 \text{ ‰}$	$-12.64 \pm 0.05 \text{ ‰}$	$+40.64 \pm 0.03 \text{ ‰}$	$+26.15 \text{ ‰}$

**Figure 1:** Certified values from USGS51 and USGS52 as shown on the manufacturer certificate.



**Figure 2:** Top – left: Pressure effect on N<sub>2</sub>O (ppb) at four different N<sub>2</sub>O mole fractions between 380 and 3300 ppb. Top – Right: Pressure effect on SP-N<sub>2</sub>O. Bottom: Polynomial fits of the pressure dependence on N<sub>2</sub>O or SP-N<sub>2</sub>O.

Exp	Culture	n.20	ng.g.DW..g.L.Rates.N2	X.N.Used	Rep	Species	date.time	sample.ID	d15Na	d15Nb	d18O	d15Nbulk	SP..1.poin	SP..2.poin	U	SP	X	X.1	d18O_low	d18O_high	d15Nbulk	d15Nbulk
2	C. reinhart	690.86	1.067	359.7105	0.276344	1	C. reinhart	16/11/2023 10:42 #1_ID-173	-92.5	-118.4	27.2	-105.5	26	25.2	1.07	NA	NA	NA	33.2	34.2	-106.9	-133.9
2	C. reinhart	669.34	0.99	375.6117	0.267736	2	C. reinhart	16/11/2023 17:13 #4_ID-173	-92.8	-119.2	27.3	-106	26.4	25.6	1.14	NA	NA	NA	33.3	34.3	-107.4	-134.4
2	C. reinhart	725.13	0.833	483.6134	0.290052	3	C. reinhart	16/11/2023 23:43 #5_ID-173	-92.3	-118.8	27.1	-105.6	26.5	25.7	1.11	NA	NA	NA	33.1	34.1	-107	-134
2	C. reinhart	427.73	1.1	216.0253	0.171092	4	C. reinhart	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	C. vulgaris	800.47	1.15	386.7005	0.320188	1	C. vulgaris	07/10/2023 08:25 #1_ID-173	-102.1	-127	28.7	-114.5	24.9	24.2	0.84	NA	NA	NA	34.7	35.7	-115.9	-142.9
2	C. vulgaris	800.47	1.15	386.7005	0.320188	1	C. vulgaris	14/10/2023 10:58 #1_ID-173	-102	-127.6	30.4	-114.8	25.6	24.7	0.96	NA	NA	NA	36.4	37.4	-116.2	-143.2
2	C. vulgaris	1413.65	1.04	755.1549	0.56546	2	C. vulgaris	07/10/2023 14:56 #4_ID-173	-102.5	-127.4	30.3	-114.9	25	24.3	0.84	NA	NA	NA	36.3	37.3	-116.3	-143.3
2	C. vulgaris	1629.17	1.63	555.2727	0.651968	3	C. vulgaris	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	C. vulgaris	1245.83	1.55	446.5341	0.498332	4	C. vulgaris	07/10/2023 21:27 #5_ID-173	-101.7	-126.1	29.4	-113.9	24.5	23.8	1.02	NA	NA	NA	35.4	36.4	-115.3	-142.3
2	C. vulgaris	1890.07	1.4	750.0278	0.756026	5	C. vulgaris	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	M. aerugin	1683.69	1.95	479.6838	0.673476	1	M. aerugin	14/10/2023 17:29 #4_ID-173	-110.5	-111.1	16.2	-110.8	0.7	0.6	0.97	NA	NA	NA	22.2	23.2	-112.2	-139.2
2	M. aerugin	1683.69	1.95	479.6838	0.673476	1	M. aerugin	05/10/2023 11:52 #1_ID-173	-117.6	-113.8	8.6	-115.7	-3.8	-3.8	1.7	NA	NA	NA	14.6	15.6	-117.1	-144.1
2	M. aerugin	1088.86	1.44	420.0849	0.435544	2	M. aerugin	06/10/2023 00:54 #5_ID-173	-111.7	-114.3	15.3	-113	2.6	2.6	1.57	NA	NA	NA	21.3	22.3	-114.4	-141.4
2	M. aerugin	NA	0.93	NA	NA	3	M. aerugin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	M. aerugin	600.72	0.99	337.1044	0.240288	4	M. aerugin	05/10/2023 18:23 #4_ID-173	-116.6	-114.3	9.5	-115.4	-2.2	-2.2	1.47	NA	NA	NA	15.5	16.5	-116.8	-143.8
2	M. aerugin	842.94	1.15	407.2174	0.337176	5	M. aerugin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	Denitrifier	38276.95	7.16	2969.968	15.31078	1	Denitrifier	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	Denitrifier	30216.08	7.72	2174.444	12.08643	2	Denitrifier	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	Denitrifier	36262.01	8.1	2487.106	14.5048	3	Denitrifier	14/07/2023 15:24 #7_17184	-12.8	-9.5	23	-11.2	-3.3	-3.3	0.89	NA	NA	NA	29	30	-12.6	-39.6
1	Denitrifier	36262.01	8.1	2487.106	14.5048	3	Denitrifier	21/07/2023 12:42 #7_17184	-11.6	-8.5	25.6	-10	-3.1	-3.1	1.35	NA	NA	NA	31.6	32.6	-11.4	-38.4
1	C. reinhart	510.53	0.72	393.9275	0.204212	1	C. reinhart	12/07/2023 15:31 #5_17188	-92.8	-115.9	23.9	-104.3	25.9	26.6	1.18	NA	NA	NA	29.9	30.9	-105.7	-132.7
1	C. reinhart	551.14	0.8	382.7361	0.220456	2	C. reinhart	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	C. vulgaris	3536.21	1.36	1444.53	1.414484	1	C. vulgaris	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	C. vulgaris	3069.8	1.46	1168.113	1.22792	2	C. vulgaris	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1	M. aerugin	2034.46	1.68	672.7712	0.813784	1	M. aerugin	12/07/2023 10:08 #1_17186	-115.4	-125.3	7.5	-120.3	13	13.4	1.22	NA	NA	NA	13.5	14.5	-121.7	-148.7
1	M. aerugin	1701.55	1.28	738.52	0.68062	2	M. aerugin	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

**Figure 3.** Screenshot of the raw data that will be uploaded separately. Some of the data will also be included in the manuscript.