

Annex to declaration of accreditation (scope of accreditation)
Normative document: EN ISO/IEC 17025:2017
Registration number: **L 043**

of **Vitens N.V.**
Waterexpertisecentre

This annex is valid from: **26-07-2023** to **01-06-2025**

Replaces annex dated: **19-07-2023**

Location(s) where activities are performed under accreditation

Head Office

Snekertrekweg 61
8912 AA
Leeuwarden
The Netherlands

Location	Abbreviation/ location code
Snekertrekweg 61 8912 AA Leeuwarden The Netherlands	L

No.	Material or product	Type of activity ¹	Internal reference number	Location
Sampling				
a.	Drinking water, groundwater, surface water and process water	Sampling of taps for inorganic-, organic- and microbiological analyses. (all accredited analyses referred to in this scope which begin with the internal reference numbers VL-W-AC, VL-W-ME, VL-W-OC and VL-W-MB)	VL-W-MN01 NEN-EN-ISO 5667-5	OnLo

¹ If there is a referral to a code starting with NAW, NAP, EA or IAF, this concerns a scheme mentioned BR010 List on <https://www.rva.nl/en/rules-and-decisions/>
If no date or version number is mentioned for a normative document, the accreditation concerns the most current version of the document or scheme.

This annex has been approved by the Board of the
Dutch Accreditation Council, on its behalf,

J.A.W.M. de Haas

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No.	Material or product	Type of activity ¹	Internal reference number	Location
b.	Groundwater	Sampling of monitoring wells (including anaerobe in-line filtration of water) for inorganic- and organic analyses. (all accredited analyses referred to in this scope which begin with the internal reference numbers VL-W-AC, VL-W-ME)	VL-W-MN02 and VL-W-MN04 NTA 8017	OnLo
c	Surface water	Collecting samples using a sampling beaker for inorganic-, organic- and microbiological analyses. (all accredited analyses referred to in this scope which begin with the internal reference numbers VL-W-AC, VL-W-ME, VL-W-OC and VL-W-MB)	VL-W-MN03 NEN 6600-2	OnLo
d	Drinking water and groundwater	Collecting samples for methane analyses.(analysis with the internal reference number VL-W-OC05)	VL-W-MN10 NEN-EN-ISO 5667-5	OnLo
e	Drinking water, groundwater (Matrix A) Process water, water from cooling towers and swimming pool water (Matrix B) Wastewater (Matrix C)	Sampling for <i>Legionella</i> testing with internal reference number VL-W-MB48 and VL-W-MB18	VL-W-MN11 NEN-EN-ISO 11731 and NEN-EN-ISO 19458	OnLo
f	Swimming water	Collecting samples for inorganic-, organic- and microbiological analyses. (all accredited analyses referred to in this scope which begin with the internal reference numbers VL-W-AC, VL-W-OC and VL-W-MB)	VL-W-MN05 NEN 6600-3	OnLo
g	Drinking water, groundwater and surface water	Sampling for assimilable organic carbon (AOC) testing	VL-W-MN37 NEN 6271	OnLo

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h	Drinking water, groundwater, surface water and process water	Sampling for microbiological testing (all accredited analyzes mentioned in this scope starting with the internal reference numbers VL-W-MB)	VL-W-MN36 NEN EN ISO 19458	OnLo

Field measurements

1.	Drinking water, groundwater, surface water, process water and swimming water	Determination of temperature; digital thermometer	VL-W-MN16 NEN 6414	OnLo
2.	Drinking water, groundwater, surface water, process water and swimming water	Determination of pH; potentiometry	VL-W-MN17 in house method	OnLo
3.	Drinking water, groundwater and process water	Determination of electric conductivity; conductometry	VL-W-MN18 in house method	OnLo
4.	Drinking water and swimming water	Determination of free available chlorine and total chlorine content; spectrophotometry	VL-W-MN20 NEN-EN-ISO 7393-2	OnLo

Radioactivity measurements

5.	Drinking water, groundwater and surface water	Determination of total β -activity concentration and rest- β -activity concentration of not-volatile substances	VL-W-AC11 in house method	L
6.	Drinking water, groundwater, surface water	The dertermination of total α -activity concentration of not-volatile substances	VL-W-AC11 in house method	L

Inorganic analyses (wet-chemistry)

7.	Drinking water, groundwater and surface water	Determination of suspended solids content; glass wool filtration and gravimetry	VL-W-AC19 NEN-EN 872	L
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8.	Drinking water, groundwater, surface water and swimming water	Determination of turbidity; nephelometry	VL-W-AC01 in house method	L
9.	Drinking water, groundwater and surface water	Determination of pH; potentiometry	VL-W-AC01 in house method	L
10.	Drinking water, groundwater, surface water	Determination of electric conductivity; conductometry	VL-W-AC01 NEN-ISO 7888	L
11.	Drinking water, groundwater, surface water	Determination of oxygen content; Luminescence	VL-W-AC01 NEN-ISO 17289	L
12.	Drinking water, groundwater, surface water and swimming water	Determination of carbonate (CO ₃) and hydrogen carbonate (HCO ₃) content; titrimetry	VL-W-AC01 in house method	L
13.	Drinking water, groundwater and surface water	Determination of colour intensity; spectrophotometry	VL-W-AC01 in house method	L
14.	Drinking water, groundwater and surface water	Determination of UV absorption; spectrophotometry	VL-W-AC01 in house method	L
15.	Drinking water, groundwater, surface water	Determination of ammonium content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
16.	Drinking water, groundwater, surface water	Determination of chloride content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
17.	Drinking water, groundwater, surface water	Determination of nitrate content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
18.	Drinking water, groundwater, surface water	Determination of nitrite content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L

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19.	Drinking water, groundwater, surface water	Determination of ortho-phosphate content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
20.	Drinking water, groundwater and surface water	Determination of silicate content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
21.	Drinking water, groundwater, surface water	Determination of sulphate content; discrete analyser spectrophotometry	VL-W-AC02 in house method	L
22.	Drinking water, groundwater, surface water and swimming water	Determination of potassium permanganate demand (permanganate index); continuous flow analyses spectrophotometry	VL-W-AC04 in house method	L
23.	Swimming water	Determination of urea content; continuous flow analyses spectrophotometry	VL-W-AC04 in house method	L
24.	Drinking water, groundwater and surface water	Determination of total cyanide content; continuous flow analyses spectrophotometry	VL-W-AC05 in house method	L
25.	Swimming water	Determination of cyanic acid content; spectrophotometry	VL-W-AC06 NEN 6493	L
26.	Drinking water, groundwater and surface water	Determination of dissolved anions; ion chromatography fluoride and bromide	VL-W-AC03 NEN-EN ISO 10304-1	L
27.	Drinking water, groundwater and surface water	Determination of dissolved anions; ion chromatography chlorate and nitrate	VL-W-AC03 in house method	L

Inorganic analyses (elementanalyses)

28.	Drinking water, groundwater and surface water	Determination of elements content, after acidifying with nitric acid to pH 1–2); ICP-MS aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, nickel, selenium, strontium, vanadium and zinc	VL-W-ME01 in house method	L
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No.	Material or product	Type of activity ¹	Internal reference number	Location
29.	Drinking water, groundwater and surface water	Determination of elements content after filtration (0,45 µm) and acidifying with nitric acid to pH 1–2; ICP-MS aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, nickel, selenium, strontium, vanadium and zinc	VL-W-ME01 in house method	L
30.	Drinking water, groundwater, waste water and surface water	Determination of elements content, after exclusion with nitric acid; ICP-MS aluminium, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, nickel, selenium, strontium, vanadium and zinc	VL-W-ME01 and VL-W-ME12 in house method	L
31.	Drinking water, groundwater and surface water	Determination of elements content after acidifying with nitric acid to pH 1-2; ICP-MS calcium, iron, potassium, magnesium, manganese and sodium	VL-W-ME04 in house method	L
32.	Drinking water, groundwater and surface water	Determination of elements content after filtration (0,45 µm) and acidifying with nitric acid to pH 1–2; ICP-MS calcium, potassium, magnesium, manganese, sodium and iron	VL-W-ME04 in house method	L
33.	Drinking water, groundwater, waste water and surface water	Determination of elements content, after exclusion with nitric acid; ICP-MS calcium, iron, potassium, magnesium, manganese and sodium	VL-W-ME04 and VL-W-ME12 in house method	L
34.	Drinking water, groundwater and surface water	Determination of calcium and magnesium content and corresponding hardness after acidifying with nitric acid to a pH of 1-2; ICP-MS	VL-W-ME04 in house method	L
35.	Drinking water, groundwater and surface water	Determination of calcium and magnesium content and corresponding hardness after filtration (0.45 µm) and acidifying with nitric acid to a pH of 1-2; ICP-MS	VL-W-ME04 in house method	L
36.	Drinking water, groundwater and surface water	Determination of elements content (after acidifying with hydrochloric acid to pH 1–2); ICP-MS antimony, mercury, molybdenum and tin	VL-W-ME05 in house method	L

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37.	Drinking water, groundwater and surface water	Determination of elements content after filtration (0,45 µm) and acidifying with hydrochloric acid to pH 1–2; ICP-MS antimony, mercury, molybdenum and tin	VL-W-ME05 in house method	L
38.	Drinking water, groundwater, waste water and surface water	Determination of molybdeen content after exclusion with nitric acid; ICP-MS	VL-W-ME05 and VL-W-ME12 in house method	L
39.	Drinking water, groundwater and surface water	Determination of silver and copper content with complex reagent; ICP-MS	VL-W-ME17 in house method	L
Organic analyses				
40.	Drinking water, groundwater and surface water	Determination of total organic carbon (TOC) and dissolved organic carbon (DOC) content; TOC-analyser with high-temperature combustion and NDIR detection	VL-W-OC02 NEN-EN-1484	L
41.	Drinking water and groundwater	Determination of methane content; GC-FID with static headspace	VL-W-OC05 in house method	L

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42.	Drinking water, groundwater and surface water	Determination of volatile hydrocarbons content; GC-MS headspace 1,1-dichloroethene, 1,2-(trans)-dichloroethene, 1,1-dichloroethene, 1,2-(cis) dichloroethene, bromochloromethene, trichloromethene, 1,1,1-trichloroethene, cyclohexane, tetrachloromethene, benzene, 1,2-dichloroethene, cyclohexene, 1,1-dichloropropane, trichloroethene, 1,2-dichloropropane, bromodichloromethene, 1,2-(trans) dibromoethene, 1,3-(cis) dichloropropene, methylbenzene, Methylisothiocyanaat (MITC), 1,3-(trans) dichloropropene, 1,2-(cis) dibromoethene, 1,1,2-trichloroethene, tetrachloroethene, 1,3-dichloropropane, dibromochloromethene, monochlorobenzene, ethylbenzene, 1,3+1,4-dimethylbenzene, 1,2-dimethylbenzene, fenylethene, tribromomethene, isopropylbenzene, 1,2,3-trichloropropane, n-propylbenzene, 1,3-ethylmethylbenzene, 1,4-ethylmethylbenzene, 1,3,5-trimethylbenzene, 1,2-ethylmethylbenzene, tribromoethene, 1,2,4-trimethylbenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2,3-trimethylbenzene, 1,2-dichlorobenzene, chloroethane, 2-chloropropene, dichloromethane, Methylisothiocyanaat (MTBE), tetrahydrofuran, 1,1-dichloropropene, tetrahydrothiophene, 1,2-dibromoethene, 2-chlorotoluene, 3-chlorotoluene, 4-chlorotoluene, 2,4-dichlorotoluene, 2,5-dichlorotoluene, 2,6-dichlorotoluene, 2,3-dichlorotoluene, 3,4-dichlorotoluene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,3,5-trichlorobenzene, t-butylbenzene, s-butylbenzene, p-isopropyltoluene, n-butylbenzene, hexachloroethene, hexachlorobutadiene and naphtalene	VL-W-OC07 in house method	L
43.	Drinking water, groundwater and surface water	Determination of polycyclic aromatic hydrocarbons (PAH) content; HPLC-FLU after on-line solid phase extraction naphtalene, acenaphtene, fluorene, fenantrene, anthracene, fluoranthene, pyrene, benz-(a)-anthracene, chrysene, benz-(b)-fluoranthene, benz-(k)-fluoranthene, benz-(a)-pyrene, dibenz-(a,h)-anthracene, benz-(g,h,i)perylene and indeno-(1,2,3-c,d)-pyrene	VL-W-OC10 in house method	L

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44.	Drinking water, groundwater and surface water	Determination of dikegulac content; HPLC MS/MS	VL-W-OC20 in house method	L

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45.	Drinking water, groundwater and surface water	<p>Determination of pesticide content (acetamides, organochlorine pesticides (OCP) and organophosphorus and nitrogen-containing pesticides (ONPB) and PCB's using GC-MS/MS after in-vial extraction.</p> <p>Acetamides: alachlor, dimethachlor, metazachlor, metolachlor, propachlor</p> <p>OCP: aldrin, cis-chlordane, trans-chlordane, o'p'-DDD, p'p'-DDD, o'p'-DDE, p'p'-DDE, o'p'-DDT, p'p'-DDT, dichlobenile, dicloran, dieldrin, a-endosulfan, b-endosulfan, endosulfan-sulphate, endrin, hexachlorobenzene (HCB), a-HCH, b-HCH, d-HCH, g-HCH, heptachlor, cis-heptachloroepoxide, trans-heptachloroepoxide, isodrin, o,p-methoxychlor, p,p-methoxychlor, mirex, pentachlorobenzene, quitozene, tecnazene and telodrin</p> <p>PCB: PCB-28, PCB-52, PCB-101, PCB-118, PCB-138, PCB-153, PCB-180 and PCB-194</p> <p>ONPB: 2,6-dichlorobenzamide (BAM), atrazine, atrazine-desethyl, atrazine-desisopropyl, ametryn, azinphos-ethyl, azinphos-methyl, bromacil, bromophos-ethyl, bromophos-methyl, cis-chlorofenvinphos, chloroprofam, chloropyriphos, chlorothalonil*1, coumaphos, crimidine, cyanazine, desmetryn, diazinon, dichlorovos, dimethoate, disulphoton, S-ethyldipropylthiocarbamaat (EPTC), ethion, ethoprophos, etrimphos, fenchlorophos, fenitrothion, phonophos, lenacil, malathion, mevinphos-cis, methidathion, metribuzine, paraoxon ethyl, paraoxon methyl, parathion ethyl, parathion methyl, permethrin c+t, phorate, pirimicarb, prometryn, propazine, propham, pyrazophos, sebuthylazine, simazine, sulfotep, terbutryn, terbutylazine, tetrachlorovinphos, tolcophos methyl, triadimefon, triallate, trietazine en trifluralin</p> <p>*1 Semi-quantitative detection of these components.</p>	VL-W-OC23 in house method	L
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Flexible scope²				
46.	Water	Determination of pesticide content (acetamides, organochlorine pesticides (OCP) and organophosphorus and nitrogen-containing pesticides (ONPB) and PCB's using GC-MS/MS.	VL-W-OC23	L
47.	Water	Determination of (chloro)phenols content after derivatization using GC-MS/MS	VL-W-OC04	L
48.	Water	Determination of aromatic amines content using GC-MS/MS	VL-W-OC33	L
49.	Water	Determination of polar anthropogenic organic compounds using HPLC-MS/MS	VL-W-OC37	L
Microbiological analyses				
50.	Surface water	Enumeration of (thermo-tolerant) coliform bacteria; membrane filtration and confirmation with Maldi-TOF	VL-W-MB02 and VL-W-MB45 isolation: NEN 6570 (1982) and NEN 6571 (1982) (confirmation: in house method)	L
51.	Drinking water and groundwater (Matrix A)	Enumeration of <i>Legionella</i> ; membrane filtration, medium A, B and confirmation with UV or PCR	VL-W-MB48 en VL-W-MB 18 NEN-EN-ISO 11731 (procedure 8,9,10) (isolation NEN-EN-ISO 11731, confirmation NEN-EN-ISO 11731)	L
52.	Process water, water from cooling towers and swimming pool water (Matrix B)	Enumeration of <i>Legionella</i> ; membrane filtration, medium C (MWY) and confirmation with UV or PCR	VL-W-MB48 en VL-W-MB 18 NEN-EN-ISO 11731 (procedure 8,9,10) (isolation NEN-EN-ISO 11731, confirmation NEN-EN-ISO 11731)	L
53.	Surfacewater and wastewater (Matrix C)	Enumeration of <i>Legionella</i> ; membranefiltration, medium C (MWY) and confirmation with UV or PCR	VL-W-MB48 en VLWMB18 NEN-EN-ISO 11731 (procedure 4) (isolation NEN-EN-ISO 11731, confirmation NEN-EN-ISO 11731)	L
54.	Legionella isolates from water	Determination of Legionella; real-time PCR <i>L. pneumophila 1, L.. pneumophila 2-15 en L. non-pneumophila</i>	VL-W-MB18 In house method	L

² This flexible scope requires the laboratory to maintain a current list of the methods applied under this flexible scope.

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55.	Drinking water, groundwater, surface water, process water and swimming water	Enumeration of sulphite reducing clostridia; membrane filtration	VL-W-MB49 NEN-ISO 6461-2	L
56.	Drinking water, groundwater and surface water	Enumeration of aeromonas-bacteria at 30°C; membrane filtration	VL-W-MB07 NEN 6263	L
57.	Surface water	Enumeration of Escherichia coli; membrane filtration	VL-W-MB09 NEN 6261 (1990)	L
58.	Drinking water, groundwater and swimming water	Enumeration of coliform bacteria and Escherichia coli; membrane filtration and MALDI-TOF confirmation.	VL-W-MB10 and VL-W-MB45 NEN-EN-ISO 9308-1 (2000) (conformation in house method)	L
59.	Drinking water, ground water, surface water, process water and swimming water	Enumeration of enterococci; membrane filtration	VL-W-MB12 NEN-EN ISO 7899-2	L
60.	Drinking water, groundwater and surface water	Enumeration of cultivable micro-organisms; colony count using R ₂ A-Agar at 25°C; plate count technique	VL-W-MB13 NEN 6276	L
61.	Drinking water, ground water, surface water, process water, swimming water, waste water and icewater	Enumeration of cultivable micro-organisms at 22°C en 36°C; colony count using yeast extract agar; pour plate technique	VL-W-MB19 NEN-EN ISO 6222 (including sample preservation)	L
62.	Drinking water, ground water, surface water and process water	Enumeration of F-specific RNA bacteriophages; direct plating method	VL-W-MB20 NEN-EN ISO 10705-1	L
63.	Drinking water, ground water and surface water	Enumeration of aeromonas-bacteria at 37°C; membrane filtration	VL-W-MB06 in house method	L

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64.	Drinking water, ground water, surface water, process water and swimming water	Confirmation of Clostridium perfringens colonies; Real Time Polymerase Chain Reaction technique	VL-W-MB26 in house method	L
65.	Drinking water, ground water and surface water	Enumeration of somatic coli-phages in water	VL-W-MB25 NEN-EN-ISO 10705-2	L
66.	Bacterie-isolates	Confirmation of bacterial- isolates: mass-spectrometry Legionella, E.coli, coliforms	VL-W-MB45 in house method	L
67.	Drinking water, ground water, surface water, process water and swimming water	Enumeration of Clostridia perfringens; membrane filtration	VL-W-MB34 NEN-EN-ISO 14189	L