

CURRICULUM VITAE

Personable:

Surname Doude van Troostwijk
First names Michael Adriaan
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The Netherlands
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Website www.waterdokter.nl
Date and place of birth September 9, 1963, Utrecht
Nationality Dutch
Marital status Single
Driving license Motorcar, motorbike



ing. Michael A. Doude van Troostwijk, driving force behind Waterdokter.nl, is a hands-on, all-round, type of (Process) Engineer / Consultant / Project & Site Manager, who has mainly been working on the Operational side of water treatment.

His mottos: "To get things done", "The show must go on", "There is always a plan B".

He has worked in Iraq, Kosovo, Tunisia, Turkey, South-Africa, Hong Kong, U.S.A., France, United Kingdom, Germany and the Benelux area.

A wide scope of personal interests and different types of projects, for instance in Water Treatment & Power Generation, Telecom, Construction or Nature-conservation & property development, created a strong all-round scope of experiences and wide employability.

Michiel is very well capable in leading complex projects, which, like e.g. his monument restoration experience, agricultural lawsuit or commissioning projects, hardly elapse as planned/expected.

His all-round background enables him separating 'sense and nonsense' in other people's work fields, to be able to take proper decisions, especially useful in remote areas.

Objectives & Experiences in key words:

- Hands-on type of projects.
- Consultancy, Engineering, Construction, Commissioning, Start-up, Operations, Trouble Shooting in a role as Consultant, Process Engineer and/or Project/Site Manager.
- Systems for:
drinking water, process water, boiler water, cooling water, waste water, sludge digestion, algae growing, oil & gas utilities, power generation.
- Key words:
field assessment, system selection, basic engineering, pilot-testing, field-trials, construction, commissioning, start-up, checking P&ID's, trouble shooting, optimization, shut down, revamp, capacity increase with existing installation, daily supervision, liaison with end customer or authorities, writing technical manuals & operator training, nature, property development, restoration cultural heritage.

Curriculum Vitae & Attachment, April 2024, Michiel A. Doude van Troostwijk, BSc.

www.waterdokter.nl ~ info@waterdokter.nl

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Professional qualifications and certificates:

- Hilversum Polytechnic (1982 - 1987): B.Sc. Chemical Engineering
- Siemens S7 PLC Programmers & Commissioning course
- VCA-VOL (= SHE diploma for managers)
- Officers training Royal Military Academy Breda
- "Working on heights" (=safety course by Dutch ARBO {=~safety} Authorities)
- First Aid Certificate
- Nokia System Training for GSM & RF Engineering (Certificates)
- Excellent knowledge of water treatment, broad interest in whole water chain.
- Good all-round knowledge of chemical, oil and gas industry, basic civil engineering, mechanics, 380/220/12 Volts electric's, avionics, radio amateurism, radio- & satellite communication.
- Knowledge of construction processes in Water, GSM networks and monument restoration.
- Familiar with drilling water holes, well production, construction water distribution networks.

Key competences:

- All-round, pragmatic, independent, commercially/technically orientated person, willing and able to operate in multitask work environments.
- Creative, social, coaching management style (preferable), can also be directive.
- Experienced in training of and communication with personnel with varying degrees of education.
- Good knowledge of typical interests in different management layers.
- Conflict mediation.
- Capable of separating 'sense and nonsense' in other people's work fields.
- Reliable, representative, globally available.
- Good general knowledge of Dutch law-system

Language ability:

Dutch: Fluent, English & German: Good, Afrikaans & French: Basic

IT ability:

Windows, IOS, Chrome, Word, Excel, Access, Outlook, Explorer, WordPress, Yoomla.
Familiar with implementation of big data bases coupled to GIS such as Arc View.

Leisure activities:

- Do it yourself, tree surgery, gardening, interested in water- and waste treatment, environment, oil & gas industry, telecom, developing countries, psychology, law, science or business as found in international reading material.
- Past: Scouts leader, corporate PR of country-wide Easter-hikes & organizing one three-day hike.
- Steward of a Scouting camping <http://www.loosdrecht.scouting.nl/>
- Former JCI member www.jci-utrecht.nl
- Sports: running, sailing, hiking, climbing & abseiling and cycling.

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Professional experience:

Please see attachment for more precise details. Please feel free to send this CV to whoever you like.

Refresco Maarheeze: optimization, acceptance testing, training operators new water treatment plant
Hofstede Sterreschans: ecological swimming pool development & restoration Noordschuur (1750)
Hatenboer Water: hands-on project manager commissioning drinking water treatment cruise ship
Veolia Water Technologies: construction supervisor medical demi water plant
Nature Conservation & Business Development: giving an 1850 National Monument a new future
PUM: creating a lab training and a manual about wastewater treatment for a project in Kosovo
Bredenoord: technology support regarding development innovative waste heat water production unit
Waterdokter.nl Technology Development: fool proof chemical free drinking water production plant
Royal Dutch Air Force: Defense wide operational water management training
Christ Holland: Reverse Osmosis operator training in a new Heineken brewery in Tunisia
Norit Process Technology: start-up and daily operation of the world's biggest leachate MBR project
Royal Dutch Air Force: operational water management training & other water related issues
OTV-Rossmark (Veolia): start-up Holland's biggest WWTP
Christ: Start-up & Operation 480m3/h Reverse Osmosis plant Tunisia
Scientific Committee Loosdrecht Lakes: consultancy regarding surface water quality improvement
OTV-Rossmark (Veolia): liaison construction team - authorities
Aqua for All: external expert disinfection
Reststoffenuie: consultancy sludge handling
Nalco Europe: external consultant
Dutch water training foundation: rework and development of training programs
Ministry of Defense: drinking water specialist in post-war areas
Optimization drinking water production processes: improving efficiency conventional plants
Development drinking water production plant: produces drinking water with fool proof technology
Amsterdam Water Supply: interim process engineer, optimization raw water production process
Telecom: acquisition, engineering, project management construction of 3 GSM networks
UNICEF Baghdad: Consultant Food for Oil Program, assessment water situation
Red Cross: assessment water situation Kosovo, preparing groundwork water projects
Nature Conservation: improving water quality ponds and management restoration landscape park
Construction: Worker and/or supervisor at several rehabilitation projects
Hadron International LTD. Hong Kong: Assisting start of this trading company
South-Africa: Trainer leadership courses according Covey, operator local drinking water plant
New Challenge: Trainer outdoor teambuilding
Nalco Chemical Company: technical sales consultant in the Water and Waste treatment division
General Electric Plastics: Process Control & Quality Engineer
Quaker Chemical: Quality Control
Bensdorp Cacao: Development particle distribution measurement methods for cacao samples
Kuwait Petroleum Europoort: assessment existing fuel-gas system, optimizing LPG-recovery
Norit Activated Carbon: development method for decreasing dust forming during hydraulic transport
Akzo/Nobel Coatings: improving stability water based through paint zeta potential measurement
Adobe, Oil & Gas – Texas: gas plant maintenance trainee

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Attachment: Detailed information Professional Experience

- **Bullets** directly relate to **water** issues.

Non-water projects, for example restauration of a 1760 farm-complex or construction of mobile networks, brought a unique widened horizon, which is scarce in the water business.

These activities need & develop multidisciplinary knowledge of different aspects, which are helpful in water projects.

- **Refresco Maarheeze** (2023)

Refresco is the world's biggest independent bottling company. In Maarheeze the old water treatment plant is replaced in stages by a state of the art new one. Michiel was involved in things like optimization, trouble shooting, equipment cleaning, hands-on training, design evaluation, acceptance testing, etc. Increase awareness around 'reduce, re-use, recycle water'.

www.refresco.com

Hofstede Sterreschans (since 2020, part time ongoing)

Restoration Noordschuur (2020-2021):

Hands-on restoration of the last unrestored building, the 'Noordschuur' (1750), together with a senior carpenter of our construction company. Due to 'corona', construction world was extremely busy. It was decided to do nearly everything ourselves and not wait for the availability of plumbers, electricians, painters etc. Think of grinding & impregnation of in- and outside of 250+ year old wooden walls, install specially made bug repellent ventilation strips between wooden wall and inside PIR-isolation, taking out brick floor, leveling sand bed, isolate floor, general woodwork, installing of water & sewage system, floor heating piping & distribution rack, plus installing/tuning central heating system, electrical installation, in-situ odor extraction system through toilet pot & urinary and painting windows/doors.

<https://sterreschans.nl/de-noordschuur/> (=our renter's Dutch website)

Part time:

Michiel is director of Hofstede Sterreschans B.V., owned by his father (1933). In this role responsible for general management around maintenance of farmhouse-complex & park and meadow. As a hands-on engineer Michiel is part time involved in doing maintenance himself. Think of ecological swimming pool construction/maintenance, chopping trees, mowing grass with a tractor etc. But also special projects like buying a bridge over the 6000m2 pond, or a new greenhouse. Plans are in development, to get some extra income for maintenance. An external project leader leads this development, Michael only assists.

From summer 2024 on, total management of Hofstede Sterreschans will be outsourced to a steward's office in order to be able to do international projects again.

- Ecological swimming pool development 2022-2024

The former 15 x 12 x 1,35 meters concrete mest-pit is transferred to an ecological swimming pool. In 6 vertical placed fiberglass reinforced plastic pipes (all 2nd life), natural purification is mimicked. For pre-treatment, a novel polyester cyclone was hand-built. Circulation & aeration will be done with an air-lift.

In summer 2024, system will be commisioned. Think of: extra water-plants, a floating planted island, dig in infra around pool, some controls & on-line measurements (Siemens Logo PLC, turbidity & temperature measurement, frost protection, flow & level control). Expand bee-friendly zone around pool to 50cm wide with a variety of plants.

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- **Hatenboer Water (2020)**

Hired by Hatenboer Water in a role as hands-on project manager for the commissioning and hand-over of drinking water treatment equipment on board of a cruise ship under construction at Meyer Yard in Papenburg, Germany. After a thorough preparation & testing at the yard, the final tests and hand-over to Saga Cruises took place at sea during two trials. Suppliers varying from say the carpet supplier up to the engine manufacturer joined.

Personal fun part was that the most important handover was at my birthday, Sept 9, just under de Norwegian coast.

Video of Spirit of Adventure: [Leaving the dock \(1:34 min\)](#)
www.hatenboer-water.com

- **Veolia Water Technologies (2019)**

Construction Supervisor of a demi water plant, for steam generation and pharma injection water. Responsibilities are supervision of sub-contractors and liaison with Veolia's principal. Besides that, Waterdokter.nl is also involved in hands-on work: fitting PVC piping, membrane loading, mounting equipment, testing/commissioning etc. www.veoliawatertechnologies.nl

- **Hofstede Sterreschans (monumental landscape park) (> 1999)**

Since 2008 responsibilities expanded from Maintenance Management only, to Maintenance Management & Business Development. Hobby became work! (More than 1500 hours per year...)

Since September 2015 director of Hofstede Sterreschans B.V.

Working principle is 'conservation by development'. Initiatives like e.g. repurposing of farm complex and new real estate development, must result in a positive cash flow and thus conservation of this unique over 200 years old National Monument. Since 1815 owned by the same family.

Crucial part of this process was winning an agricultural court case to end an agricultural lease of a very small (almost hobby type) farm, based on a '*consideration of interests*'. This was the first time in Dutch history that the owner (Michael's father) won a case like this. (The farmer earned 100% of his family income elsewhere, his farm-operation was losing money, versus the owner was losing money on the lease, due to a 'governmentally regulated lease contract system'.)

Court case was started in 2009 and won in 2014, farm was abandoned in 2015.

Farmhouse complex was under restoration since end of 2015 till 2020.

Oct.20 restoration of the anno 1750 Noordschuur started and took about 1 year.

This complex restoration faced a lot of unforeseen issues and took much longer than thought.

Farm complex is rented to a software company since Jan. 2021.

Please also see 'Nature Conservation' underneath. www.hofstedesterreschans.nl (Dutch)

- **PUM (2016)**

In 2015 and 2016 PUM worked on a waste water capacity building project in Kosovo. PUM experts made training manuals and prepared a technical lab training. University of Kosovo was the receiving party. www.pum.nl

- **Bredenoord (2015)**

For over 70 years, family owned Bredenoord has understood the business of supplying customized power for any situation. Bredenoord has developed a combined Water and Power unit. Waste heat of the generator is used to produce good quality water by means of vacuum distillation. Waterdokter.nl assists Bredenoord with consultancy services regarding water technology, market survey and field trials. www.bredenoord.nl

- **Waterdokter.nl Technology Development (> 2008)**

In 2008 & 2010 Waterdokter.nl was awarded two WBSO subsidies to develop a novel, electrical, chemical free, Direct Advanced Oxidation Process (DAOP). Some equipment was constructed and several test were done. This DAOP is part of a 'fool proof' water production concept. The concept is a combination of robust classical and novel techniques.

Due to other priorities, developments slowed down, might be picked up.

- **Royal Dutch Air Force (2008-2016)**

As a result of international missions, Preventive Health Care specialists of the Royal Dutch Army have a growing need for added expertise on drinking water and waste water.

RDAF organized a army wide training, for Preventive Health Care specialist.

Aim is to implement a Defense wide standard water approach.

Waterdokter.nl functions as a 'water help desk' as well.

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- **Ovivo Water (Christ Holland)** (June 2008)

Heineken constructs a new brewery near Tunis. Christ Holland has constructed a Reverse Osmosis unit with remineralisation. French speaking operators were trained how to operate this equipment. Training consisted of a theoretical part and a hands-on operations part with deliberately introduced alarms. www.ovivowater.com

- **Pentair Clean Process Technologies** (formerly Norit Membrane Technology) (May 2007 – Dec 2007)

Istanbul has two municipal dump sites of 175 hectares in total. They are the second biggest in the world. Through drainage pipes extremely polluted leachate water flows down to a lagoon from which it is pumped to a treatment unit. Due to future stricter EG regulations existing installation was replaced by a NORIT leachate Membrane Bio Reactor (MBR). This is Turkey's first MBR and with 5000 m³/day the world's biggest leachate MBR project. Waterdokter.nl was NORIT's long term on site Commissioning, Start-up and Operations Supervisor. www.x-flow.com www.pentair.com

- **Royal Dutch Air Force** (2006-2009)

As a result of international missions, Preventive Health Care specialists of the Air Force have a growing need for added expertise on drinking water and waste water. To meet these needs, Royal Air Force has requested Waterdokter.nl to develop a special training manual and a 5 day training session regarding Operational Water Management.

Course deals with topics like: Specific Regulations, Base Water Knowledge, Water Treatment Technology, Water Production Tools and Daily Operation. Course consists of a theoretical part and a equipment training part under simulated field conditions.

Besides this course upcoming questions regarding Operations & Water are dealt with in a pragmatic way. www.luchtmacht.nl (in Dutch)

- **OTV-Rossmark (Veolia)** (2006-2007)

In the Harsnaschpolder, near The Hague, the biggest waste water treatment plant of Europe is built and was started in September 2006.

Member of start-up team. As the only Dutch member of the Commissioning team also responsible for Operator training, writing operations manuals and liaison with authorities. www.veoliawater.com www.delfluent.nl

- **Ovivo Water (Christ Holland)** (2005/2006)

Christ Holland constructed the 4th line of 480m³/h for Sonede, Tunisia's national drinking water company. After Commissioning and Start-up, Waterdokter.nl operated this plant intensively to boost future optimization. Also made a proposal to further optimize the existing pre-treatment.

Please see www.waterdokter.nl reference page for details. www.sonede.com.tn

- **Scientific Committee Loosdrecht Lakes** (2005-2006)

The Loosdrecht Lakes is a famous Dutch water sports and nature area. Through the years water quality has gone down significantly through an overdose of incoming nutrients.

The city council of Wijdemeren has installed a Scientific Committee to advise her on possible solutions.

Waterdokter.nl brings in hands-on expertise on system optimization e.g. regarding nutrient removal/prevention, plus experience in nature conservation. www.wijdemeren.nl

- **OTV-Rossmark (Veolia Water)** (2005)

Liaise between construction team, future operator Delfluent Services B.V. and authorities responsible for issuing permits during start-up and operation of a big waste water treatment plant. This is the first major Public-Private operation in The Netherlands. www.veoliawater.com www.delfluent.nl

- **Aqua for All** (2004-2006)

Gathering data on available drinking water production e.g. disinfection techniques, suitable for developing countries. www.aquaforall.nl

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- **Reststoffenuie** (2005)

Reststoffenuie takes care of (new) applications for re-use of Dutch drinking water production plants by-products. Customer had specific questions on environmental and process issues regarding sludge handling in a drinking water application. www.reststoffenuie.com

- **Nalco Europe** (2005)

Translation of a technical training for the Benelux sales force on 3D Trasar. Nalco Trasar enables on-line dosing control of water treatment chemicals. www.nalco.com www.3dtrasar.com

- **Dutch water training foundation** (2004, 2005)

Dutch water training foundation (Wateropleidingen) is responsible for development and teaching of high quality trainings for employees of Dutch public water works. A mixed team with representatives of DHV, PWN and Vitens is developing a course on asset management for the foundation (2004).

Rework Process training (2005). Course teaches unit operations such as: coagulation/flocculation, (membrane) filtration, flotation, disinfection etc. Teaching the Process-training is the next step. www.wateropleidingen.nl

- **Ministry of Defense** (>2004)

Concept support field water treatment.

Active participant in KVNRO shooting trainings.

Officers training at KMA Breda (NLDA) to become a 1CMICo Functional Specialist (=FS) in the rank of Lieutenant-Colonel. A FS liaises with local authorities for rehabilitation of local drinking- and waste water infra structure during peace keeping missions.

Assessment of drinking water equipment of other NATO countries. During Operation Heroic Engineer in Germany first assessment of Dutch, Litouwenian and Hungarian equipment was done.

(As a result, in the pipe-line: project on water production and packing in the field.)

Concept development for quick reconstruction during peace keeping missions by collaboration of a FS, engineering works force and a local contractor.

www.defensie.nl/en www.landmacht.nl www.nlda.nl

- **Development 'fool proof' water production unit** (>2004)

Development of a modular line of 'foolproof' (drinking) water production plants for the international market. Equipment will be minimal depending on the availability of spare parts. Continuous capacity will be 5 - 75 m³/h per unit. Raw water source is sweet water. Removal of e.g. pesticides or arsene by a novel D-AOP. Idea orginated while working for Unicef in Iraq www.waterdokter.nl (projects)

- **Optimization drinking water processes** (2003-2005)

Several drinking water production plants in The Netherlands use surface water as raw water.

First process step often consists of adding traditional chemicals to improve removal of suspended solids. Involved in discussions with several drinking water companies about optimizing these processes. This is done by introducing more effective chemicals and process automation. This can result in significant cost reductions, combined with a better water quality.

As a result of this initiative, PWN (drinking water company) researched the concept itself, implemented it in their operation and now saves 30% on their UV Peroxide power requirement, mainly due to a much better removal of organic compounds (which are absorbed by UV).

- **Waternet** (formerly Amsterdam Water Supply) (2001-2002)

Interim Process Engineer, started in daily production issues, later became involved in several optimizations of the same process. Optimize coagulation of raw surface water with high coagulant dosage to half that dosage plus some polyelectrolyte. Perform jar and pilot tests to convince AWS of reliability and safety issues. Work on implementation of a sieve step in the softening process to recycle undersized calcite pellets. Optimize criteria for detection and classification of raw water intake from Amsterdam Rhine Canal in case of emergencies such as oil in/on water. Water is used for drinking water production and level control of the Loosdrecht Lake District, where different criteria apply. Implement new procedure and equipment for emergency chlorination. www.waternet.nl

- **Nature Conservation** (>1999, ongoing)

A farm and a monumental landscape park of 10 hectares, designed in 1850 by famous Land Landscape Architect van Laar is under restoration since 1994. Focus has moved from restoration & maintenance to maintenance & a search for income generation for conservation.

Improvement water quality of a half hectare pond. Pond was partly covered with trees, continuously fed with nutritious water from the river Vecht. This resulted in massive algae and water plant growth, pH drop by acid oak leaves and anaerobic conditions caused by rotting leaves. End result is turbid water in which only algae and water plants survive. A constructed float minimizes influent. Trees in the direct surrounding of the pond were chopped. Significant amounts of daphnia, which eat algae, and Grass Carpers, grass excessive water plants, were introduced. Pond is clear again, bottom can be seen.

Responsibilities: advising about equipment to be purchased, supervising contractors and workman, liaise with local authorities and all hands-on type of work such as mowing grass, climbing/chopping trees, checking water levels etc. www.hofstedesterreschans.nl (Dutch)

Construction: Worker and/or supervisor at several rehabilitation projects.

KPN Mobile (1999/2000)

Project Manager for the implementation of GSM 1800 in the Middle of Holland. KPN has bought extra radio frequencies in the 1800 MHz band to boost capacity. Equipment is installed on existing GSM 900 sites as much as possible. RF Design of these sites was another responsibility.

Nokia Netherlands (1999)

Nokia Netherlands constructs T-Mobile's (Ben) GSM 1800 network on a turnkey basis.

Duties are: acquire roof and indoor space in suitable buildings; conduct site surveys, in Eastern/Northern Holland with the end product of the entire operation being the construction of local switches (BSC's) in the acquired sites, from signals via microwave dishes on the roof. These switches control mobile telephone traffic in the area.

Involved in project management, basic engineering, looking for flexible solutions of problem areas and monitoring contractors.

- **Unicef Iraq** (1998)

Observer for the Water and Sanitation part of the Food for Oil deal (United Nations Security Council Resolution 986). This program allows the Government of Iraq to export an agreed amount of oil to cover expenditure for strictly humanitarian goods. UNICEF is involved in programs governing the areas of medicine, educational equipment and teaching supplies for schools in addition to technical equipment to improve/provide drinking water production and distribution, sanitation and power generation. United Nations observes distribution and implementation of these goods to ensure they are in accordance with an agreed Memorandum of Understanding.

One of my tasks in the area of water and sanitation was to monitor and track thousands of incoming one ton chlorine gas cylinders which were imported due to a possible dual use of the gas by authorities contravening the agreement. In addition to monitoring the use of the cylinders my duties were to track and monitor chlorine gas injectors, aluminum sulphate dosing pumps, drinking- and wastewater booster pumps. Goal: ensure proper installation and optimal usage of those goods. Train national UNICEF personnel or Government personnel where possible.

Indicated to UN in New York, which aspects of drinking water production needed more attention for future purchase of water and sanitation equipment.

Baghdad's drinking- and wastewater infrastructure was designed and build by foreign companies.

Helped Unicef writing a proposal in cooperation with authorities to invite leading European companies to make a plan for the coming ten years to upgrade water and sanitation systems.

In Northern Iraq, a separate program existed in UNICEF where my duties encompassed visiting major drinking water production plants and advised how to increase water production and water quality with existing equipment. Advised UNICEF which parts of the plants should be rehabilitated most urgently. Proposed several redesigns regarding better control and extra pump capacity, thus improving good quality water production by around 30%. Designing, ordering and construction of new plants takes lots

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of time. I' am told that since summer 1999 about 2 million people benefit from these advises and can thus have access to more drinking water. Judged the effectiveness of over-advanced analytical equipment implemented in governmental laboratories.

Asked by Kurdish authorities in Northern Iraq to write a training manual on drinking water production for their engineers. Many experienced engineers have left the country. www.unicef.org

Telfort - Amsterdam (Sept 1997-Sept 1998)

Setting up a department which focused on getting frame contracts with big property owners varying from Top50 real estate owners to high voltage pylons, Dutch Railroad Stations (former partner in Telfort) or industrial silos. Negotiating regarding conditions of constructing GSM 1800 base stations on those rooftops. Set up database about location and height of buildings, to be used by a Geographical Information System (GIS). Optimized database used by e.g. GIS tool. By means of this tool, Telfort tried to get the radio plan as much as possible on these so-called Friendly Land Lords rooftops/property, to speed up roll-out.

Also acting as a commercial semi-radio planner in difficult areas. Look for creative solutions and explain Land Lords about equipment, to be installed. Inspected several near completion construction sites for irregularities. www.telfort.nl

New Challenge (June 1997-Sep 1997) Trainer outdoor teambuilding

- **International Federation of the Red Cross - Kosovo** (1997)

Responsible for carrying out a regional assessment of the water and sanitation situation in the province of Kosovo. Subsequently prepared the groundwork for five projects thought appropriate for implementation.

These included; Replacement of water pumps serving a population of 3000 people and the improvement of spring water catchments and the reparation and laying of extensive pipe work to communities of several thousand families. Projects should also increase cooperation between different ethnic groups. Install telecommunication equipment and optimize operation / safety procedures.

www.redcross.nl www.ifrc.org www.icrc.org

Hadron International LTD.

Assisting the establishment of an export business in Hong Kong, early 1997.

1996

Travelled from Kenya to South-Africa. Outdoor centre instructor in a nature reserve near Durban, after travel. Taught leadership courses according to Covey's theories to mixed ethnic groups of students aged between six and sixty. www.spiritofadventure.co.za

Interim ranger, supervising 25 general workers.

- Assisting (volunteer) in the operation of www.umgeni.co.za drinking water station in the reserve, which produces drinking water from surface water by in-line coagulation & sand-filtration.

1995

Mainly involved as a volunteer in the organization of the World Jamboree.

Several rehabilitation construction projects. Planned mission for Red Cross was cancelled.

- **Nalco Chemical Company - Holland** (1989 - 1994)

Nalco Chemical Company (USA) is the world's largest producer of specialty chemicals and services for water treatment and other industrial processes.

Started with a intense technical and commercial training of one year. Worked for NALCO as a technical sales consultant in the Water and Waste treatment division and helped our customers to solve and prevent operational problems related to their drinking-, process- or waste water plants, boiler- or cooling systems. www.nalco.com

Some projects on drinking water, process water or waste water:

Performing field trials with coagulants/flocculants at Avebe, Heijmans, Akzo-Nobel, Shell, Campina, Texaco USA, Q8, Parengo, Mc Cain and several drinking water & meat processing plants

Avebe (world's biggest potato starch producer): Researching the most optimal way of thickening sludge streams for their new waste water plant. Optimizing boiler feed water production from surface water. Solving light sludge problems in waste water plant.

Akzo-Nobel: Optimization of biological sludge thickener – centrifuge - thermo drying process.

Optimization ground water de-ironing process.

Shell Pernis: Optimization treatment of heavy metal containing wash water stream coming from plant's catalyst, during maintenance, optimizing waste water treatment plant.

Texaco Houston: waste water trial to increase oil water separation

Campina (dairy) & meat processing companies: pioneering with chemical / physical purification of directly to a sewer going untreated waste water to save (80-90%) on waste water taxes.

A few boiler water projects:

Parengo (Paper Mill) & Avebe (Potato Starch): Water side start-up of steam boilers (>100 ton/h) and training basic water treatment knowledge operators.

Norit (Activated Carbon), NAM (joined venture Shell/Exxon) and others: performing system surveys, steam purity analysis, oxygen and hydrogen measurements, water analysis and internal boiler inspections.

Cooling water projects:

Start-up and daily operation Nalco's Mobile Engineering Centre (M.E.C.). MEC is a mobile pilot plant to test cooling water behavior under actual conditions. Involved in tests at the largest cooling water consumers in the Benelux area, such as Finaneste, Air Products, Hoekloos, Air Liquide, DSM and Kemira.

Water recycle projects:

Designing a more sophisticated trailer, investment 500.000 USD, which can simulate the reuse of waste water by means of several mini unit operations. Writing marketing and sales plan for this service. Trained in U.S.A. for half a year to become Nalco's European expert on water recycle projects. Run recycle trials with the American ARC. (see picture reference page website)

Other responsibilities were:

- General technical field support / Nalco Ambassador; for instance carrying out system surveys for colleagues or being the emergency all-round trouble shooter, visiting everything between refineries, paper mills, soil-cleaning projects and chicken/pig/veal slaughterhouses/destructors, hospitals.
- Training operators in basic water treatment.
- Helping customers with water saving and water recycle projects.
- Introducing new technology and training customers / colleagues how to apply; for instance regarding new chemicals used in drinking water production or sterilizing canned food.
- Public Relations, advertisements, writing technical articles for magazines.

Training: Every new technical sales consultant gets a one year internal technical and commercial training on industrial water treatment. Followed Xerox Personal Selling Skills. Worldwide quality training according Crosby because of ISO 9001. Safe driving training. Trained in U.S. in water recycle for half a year.

Travel & work in South-Africa (1989)

Traveled and worked on a farm in South Africa for half a year. This included the preparation of a number of water holes and the maintenance of agricultural equipment in cooperation with black workers.

Curriculum Vitae & Attachment, April 2024, Michiel A. Doude van Troostwijk, BSc.

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General Electric Plastics - Amsterdam (1988)

General Electric Plastics is the world market leader of ABS engineering plastics. Process Control Engineer, supporting plant management. Adviser on matters such as rework, off-spec material or production problems.

Quaker Chemical - Uithoorn (1988)

Quaker produces specialty chemicals for the steel, automotive and paper industry. Junior Chemist Quality Control. Responsible for checking incoming raw materials and return shipments for specification.

Bensdorp Cacao - Bussum (Thesis 1987)

Bensdorp is renowned worldwide for its typical Dutch cacao flavor. Developed and created methods for measuring the particle size distribution of a cacao sample. Also assessed factors, which influenced this distribution during cacao production.

Kuwait Petroleum Europoort - Rotterdam (Traineeship 1986)

Responsible for developing an inventory of the existing fuel-gas system and made a separate piping and indicator diagram (P& ID) of this system. Explored possibilities of optimizing the desulphurization and LPG-recovery of the fuel-gas system.

Norit Activated Carbon - Amersfoort (Traineeship 1985/1986)

This Dutch company is the world's largest producer of activated carbon. Simulated the wearing of activated carbon during hydraulic transport. This was done in order to reduce dust forming during filling or emptying of activated carbon filters.

Akzo/Nobel Coatings - Sassenheim (Traineeship 1985)

Responsible for assessing the influence of the molecular weight of the dispersion resin and the type of pigment on the stability of the paint. This Internship was part of an important research project for water based paint. Regular visits to paint application labs, where techniques such as electrostatic spraying, paint curtains, powder coatings etc. were tested in practice.

Adobe, Oil & Gas - Texas, USA (Summer 1982)

Employed at Adobe's gas plant as a maintenance trainee. Gathered process data replaced several parts of the compressors, searched for gas leaks in pipelines in the field and repaired them. Adobe was started in 1960 by Joe Pevehouse and is one of the most successful independent oil and gas companies in the US.

End of Curriculum Vitae & Attachment

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