

PERSONAL DETAILS

Full Names: Fredrika Ndeutala Shagama
Profession: Hydrogeologist / Geohydrologist &
Environmental Assessment Practitioner (Consultant)
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**PROFESSIONAL PROFILE, CORE SKILLS AND EXPERTISE**

Fredrika is an Environmental and Water Consultant with over 8 years of experience in Groundwater and Environmental Consulting, with experience both in Namibia, South Africa and the Czech Republic. She is passionate about the environment and water resources who can work either as an individual or in a team. Her core skills are in Hydrogeology (Groundwater exploration, Supply, Drilling supervision, and Impact Assessment), Geotechnical investigation phase 1, Proposal and Project Technical Report Compilation. Although Fredrika is a geological engineer (Hydrogeologist) by qualification and experience, she has also gained experience in conducting Environmental Impact Assessments (EIAs) and compilation of Environmental Management Plans (EMPs), facilitating EIA Consultation meetings and Stakeholders' Engagement, as well as incorporating specialists' inputs to EIA Reports that are both funded locally or internationally.

PROFESSIONAL MEMBERSHIPS (AFFILIATIONS)

- **International Association of Hydrogeologists** - Full Member, No.139790 https://iah.org/wp-content/uploads/2019/05/IAHSpring2019Newsletter_web.pdf on page 19
- **Namibian Hydrogeological Association** - Member, <http://namhydro.com/wp/members/>
- **Environmental Assessment Professionals of Namibia (EAPAN)** - Ordinary member practitioner, <http://eapan.org/registered-members>, Membership No. 183.

PROFESSIONAL COURSES OR TRAININGS ATTENDED

- Groundwater Flow Modelling with GMS (MODFLOW, MODPATH) by AQUAVEO at VSB-Technical University of Ostrava, June 2015
- Groundwater Investigations and Supply Assessment for Technical Reporting and EIA Report Compilation, GCS Water & Environment Consultants & GCS Namibia (Pretoria, 2016 & Windhoek, 2016)
- Hydrocarbon Contamination Assessment (Field Procedures and Report Writing), GCS Water & Environment Consultants (Pretoria, 2016)
- Social Impact Assessment: Stakeholders & Community Engagement Training and Procedures (GCS Namibia, 2017)

EDUCATIONAL QUALIFICATIONS

Educational Institution	Qualification obtained	Study period
VSB - Technical University of Ostrava, Czech Republic	PhD. Student: Civil Engineering (Geotechnics & Environmental Hydrogeology)	2020 (ongoing)
VSB - Technical University of Ostrava, Czech Republic	MSc. Geological Engineering (Cum Laude) – with a primary focus in Hydrogeology Thesis title: <i>Groundwater Pollution Transport from Tsumeb Copper Smelter in Namibia</i> Professional course attended: Groundwater Flow Modelling with GMS (MODFLOE, MODPATH) by AQUAVEO at VSB-Technical University of Ostrava, June 2015	2013 - 2015
VSB - Technical University of Ostrava, Czech Republic	BSc. Geological Engineering Mini thesis title: <i>Water Quality Prediction in the Skorpion Mine Pit Lake in Namibia</i>	2010 - 2013
Charles University in Prague, Mariánské Lázně Study Centre (UJOP), Czech Republic	Certificate Level B2 , Czech Language for academic purposes	2009
University of Namibia	BSc. Environmental Science & Geology – studies ended upon obtaining a scholarship to study in the Czech Republic	2008 – 2009

LANGUAGES

Language	Speaking	Reading	Writing
English	Excellent	Excellent	Excellent
Oshiwambo	Excellent/Native	Excellent/Native	Excellent/Native
Czech	Excellent	Excellent	Excellent

EMPLOYMENT RECORD

Since starting her professional career over 8 years ago, Fredrika has been involved in numerous groundwater (hydrogeological), geotechnical, Environmental Impact Assessment projects. Groundwater projects have been focusing on groundwater investigation for new water supply sources, groundwater impact assessment and monitoring. The specific groundwater, geotechnical and environmental project responsibilities range from proposal writing, technical

report compilation, environmental assessment public meeting facilitation, site visits (fieldwork) & supervision, environmental compliance monitoring on sites and project management. The projects have been mainly based in different areas in Namibia, with groundwater projects (monitoring) and hydrocarbon contamination assessments that were based in Limpopo Province and Gauteng (Johannesburg), early 2016, respectively. Since January 2020, under her PhD Study Department of Geotechnics & Underground Engineering (VSB – TU Ostrava) in the Czech Republic, Fredrika has been involved in some technical projects responsible for Groundwater (Data) Management projects for Czech environmental and water management firms/organizations as part of the University-Industry collaborations.

Fredrika has been employed as per order of employment record below:

Period	Name of Employer, Position and Responsibilities
01 Aug 2020 to date	<p>Serja Hydrogeo-Environmental Consultants CC (Self-Founded)</p> <p>Position: Principal Hydrogeologist and Environmental Assessment Practitioner (EAP)</p> <p>Responsibilities: Conducting Groundwater (Hydrogeological) Studies (Exploration and Impact Assessment), Groundwater Monitoring, Project Management, Technical & Financial Proposal Compilation, Technical Report compilation, Environmental Impact Assessments (EIAs) and Management Plans, Compiling project technical reports for Groundwater studies (as a specialist's input to EIAs) and adding input into projects' Environmental Management Plans (EMPs) where needed, Renewal of Environmental Clearance Certificates (ECCs) and Conducting Environmental Monitoring (Compliance Auditing) as well as Mentoring/Training of Environmental and Water Management graduates (young consultants)</p>
1 Jan 2020 to date	<p>VSB – Technical University of Ostrava, Ostrava</p> <p>Position: PhD Student: Assistant Hydrogeologist / Groundwater Modeller and Researcher</p> <p>Responsibilities: Conducting Research on Water, Geotechnical and Environmental Technical (Industrial) Projects, Data Preparation and Analysis, Numerical Surface Water and Groundwater Modelling (using MIKE SHE and GMS: MODFLOW, respectively – In Training)</p>
1 Apr 2019 to date	<p>Independent Water and Environmental Consultant, Windhoek / Ostrava</p> <p>Responsibilities: Conducting Groundwater studies, Environmental Impact Assessments, advising clients on Environmental and Water management, Project Management, compiling project proposal and technical reports for Groundwater studies (including reports for water permit applications) and Environmental Impact Assessments (EIAs) and Environmental Management Plans (EMPs).</p> <p>Major Association/Collaborations</p>

Highlight: Contracted by the African Development Bank (AfDB) with four other independent consultants for a 3.5-month project under the Ministry of Agriculture, Water and Land Reform (MAWLR) for the *Namibia Water Sector Support Programme's Strategic Environmental & Social Assessment (SESA)* Duration: August 2019 to November 2019.
https://www.afdb.org/sites/default/files/documents/environmental-and-social-assessments/namibia_water_sector_support_program_nwssp_phase_1_esmf_p-na-e00-005.pdf.

1 Jan 2019 – 30 June 2023 **Excel Dynamic Solutions (Pty) Ltd, Windhoek**

Position: Associate Consultant / Technical Advisor - Hydrogeology and EIAs

Responsibilities: Conducting Groundwater (Hydrogeological) studies, Groundwater Monitoring, Project Management & Staff management, Technical compilation of Groundwater studies and EIA reports and EMPs, Training and mentoring of young Consultants.

3 Aug 2015 – 31 Dec 2018 **GCS Water Environmental Engineering Namibia (Pty) Ltd (GCS Namibia), Windhoek**

Position: Country Hydrogeologist, Environmental Assessment Practitioner (EAP) and Safety, Health & Environmental (SHE) Officer

Responsibilities: Conducting Groundwater (Hydrogeological), Geological & Geochemical studies, Geotechnical investigations, Groundwater Monitoring, Air Quality Monitoring, Project Management, Proposal and Technical Report writing and Environmental Impact Assessments & Environmental Management Plans. Further responsibility included training of junior geologists and environmental assessment practitioners and ensuring health and safety implementation in the office.

1 06 Jul 2014 – 30 Sept 2014 **Dundee Precious Metals Tsumeb (DPMT), Tsumeb**

Position: Intern Geologist / Hydrogeologist in the Environmental Department (under the Supervision of GCS Water & Environmental Consultants (Pty) Ltd)

Responsibilities: Measuring Groundwater Levels, Water Sampling and Preservation.

SOME OF THE KEY PROJECTS UNDERTAKEN (INCLUDING CLIENTS, RESPONSIBILITIES AND PERIOD/YEAR)

INFRASTRUCTURAL (ROADS, WATER, TELECOMMUNICATIONS) AND MINING RELATED ENVIRONMENTAL ASSESSMENT STUDIES (EIAs AND WATER STUDIES)

- Hydrogeological Assessment for the Proposed Upgrade Low Volume Seal (LVS) Bitumen Road for DR3425-DR3447-DR3400 (155km: Sikanduko-Ncaute-Ndonga Linena) in the Kavango East Region: A Part of the Environmental & Social Impact Assessment Study. Client: D&P Consulting Engineers, Archetype Project Consultants, & Tweya Consulting Engineers (DAT-Joint Venture) for Roads Authority of Namibia.

Responsibilities: Site/route Visit & Assessment, Groundwater Supply Assessment, Selected stakeholder/public familiarization (pre-consultation meetings), compilation of the Water Supply Assessment Report. **Year:** 2024.

- Hydrogeological Impact Assessment for the Proposed Aquaculture Project and associated Activities near Henties Bay Town in the Erongo Region, Namibia. **Client: EnviroPlan Consulting CC for Blue Ridge Aquaculture Africa (Pty) Ltd. Responsibilities:** Site visit & assessment, and Compilation of the Water Resources (Hydrogeological) Impact Assessment Report. **Year:** 2024.
- Hydrological & Hydrogeological Assessment Study for the Upgrading and Subsequent Operation of a Fleet Management Fuel Station in Windhoek, Khomas Region. **Client: Namibia Environmental Consultants CC for the City of Windhoek. Responsibilities:** Site visit & assessment, and Compilation of the Water Resources (Hydrogeological) Impact Assessment Report. **Year:** 2023/2024.
- Environmental & Social Impact Assessment Studies for the Ruacana South Phase 1 & Katima-Ngoma Phase 3 & 4 and the Reservoir Rural Water Supply Schemes in the Omusati and Zambezi Regions - as part of the Namibia Water Sector Support Program (NWSSP). Namibia. **Client: Ministry of Agriculture, Water and Land Reform (MAWLR). Responsibilities:** Baseline Assessments, Facilitation of Stakeholders Engagement, Compilation of ESIA Reports & ESMPs. **Year:** 2023.
- Hydrogeological Assessment Study for the Construction of Otavi Primary School in Otavi, Otjozondjupa Region. **Client: I.D Building Contractors CC. Responsibilities:** Hydrogeological Baseline Assessment, Site Visit & Assessment, and Compilation of the Hydrogeological Assessment Report. **Year:** 2023
- Groundwater Supply Assessment and Environmental & Social Impact Assessment (ESIA) for the Upgrade to Low Volume Bituminous Seal Standard of the DR3425 Ncaute to Karukuvisa Road (87km) in the Kavango East and West Regions. **Client: D&P Consulting Engineers, Archetype Project Consultants, & Tweya Consulting Engineers (DAT-Joint Venture) for Roads Authority of Namibia. Responsibilities:** Site/route Visit & Assessment, Groundwater Supply Assessment, Stakeholder/public engagement (consultation meetings facilitation), compilation of the Water Supply Assessment & ESIA Reports and ESMP. **Year:** 2023.
- Environmental and Social Scoping Assessments for the Proposed Mineral Prospecting and Exploration Activities on two Exclusive Prospecting Licenses (EPL) No. 8955 situated North of Opuwo Town and 8967 located northwest of Sesfontein in the Kunene Region, Namibia. **Client: Max Kefas Nuseb (under OMAVI Geotechnical & Environmental Services). Responsibilities:** Environmental impact assessments, public & stakeholders' engagement/consultation, Site visits and assessments, compilation of the two EIA Reports and Environmental Management Plans (EMP). **Year:** 2023.
- Environmental Scoping Assessment (ESA) Study for the Proposed Prospecting and Exploration Activities on Two Exclusive Prospecting Licenses (EPLs) No. 8779 & 8780 located northwest of Sesfontein and EPL-8770 near Opuwo Town in the Kunene Region, Namibia. **Client: Tamarillo Investments (Pty) Ltd. Responsibilities:** Environmental impact assessments, public & stakeholders' engagement/consultation, Site visits, compilation of the two EIA Reports and Environmental Management Plans (EMP). **Year:** 2023.
- Environmental Scoping Assessment (ESA) Study for the Proposed Prospecting and Exploration Activities on Exclusive Prospecting License (EPL) No. 8838 at Warmbad Settlement in the //Kharas Region, Namibia. **Client: Mistletoe Investments Pty Ltd. Responsibilities:** Environmental baseline assessment, public & stakeholders' engagement/consultation compilation of the EIA Report and Environmental Management Plan (EMP). **Year:** 2023.

- Environmental & Social Impact Assessment (ESIA) for the Upgrade to Low Volume Bituminous Seal Standard of the DR3425 Ncaute to Karukuvisa Road (87km) in the Kavango East and West Regions. **Client: D&P Consulting Engineers, Archetype Project Consultants, & Tweya Consulting Engineers (DAT-Joint Venture) for Roads Authority of Namibia. Responsibilities:** Site/route Visit & Assessment, Groundwater Supply Assessment, Stakeholder/public engagement (consultation meetings facilitation), compilation of the ESIA Report & ESMP. **Year:** 2023.
- Environmental Impact Assessment (EIA) Studies for the Proposed Dewatering of the Underground Mine through Asis West (AW) and Asis Far West (AFW) shafts and Underground Exploration & Mining Activities and on Mining Licenses (MLs) No. 73B, 16 & 9 at the Kombat Mine in the Otjozondjupa Region, Namibia. **Client: Trigon Mining Namibia (Pty) Ltd (under Excel Dynamic Solutions (Pty) Ltd). Responsibilities:** Environmental impact assessments, public & stakeholders' engagement/consultation, Site visit, Assessment, compilation of the two EIA Reports and Environmental Management Plans (EMPs), and application of the Groundwater abstraction permit. **Year:** 2022/2023.
- Environmental Scoping Assessments (ESAs) Studies for the Proposed Prospecting and Exploration Activities on Exclusive Prospecting License (EPL) No. 7582 located North of Omaruru and EPL-8788 west of Uis in the Erongo Region. **Client: Tarah Hainana. Responsibilities:** Environmental impact assessments, public & stakeholders' engagement meeting, Site visits & Assessments, compilation of the EIA Reports and EMPs. **Year:** 2023.
- Environmental Impact Assessment (EIA) Study for the Establishment of Urban Agricultural Activities on Extension 5 in Karibib, Erongo Region. **Client: Karibib Town Council (under Excel Dynamic Solutions (Pty) Ltd). Responsibilities:** Environmental impact assessment, public & stakeholders' engagement, Site visit & Assessment, compilation of the EIA Report and EMP. **Year:** 2022/2023.
- Development of the Comprehensive Environmental Management Plan (EMP) for the Existing Effluent Treatment Plant in Lüderitz, //Karas Region, Namibia. **Client: Lüderitz Town Council under Excel Dynamic Solutions (Pty) Ltd. Responsibilities:** Project Supervision of 2 interns / graduates working on the project, Site Visits and Assessment, Compilation of the Comprehensive EMP. **Year:** Year: 2022-2023.
- The Physical Environmental Baseline (Soils, Geology, Hydrogeology and Hydrology) for Aquacultural Activities in Dolphin Beach Aqua Park, Walvis Bay in the Erongo Region and for the Maricultural Project Site in Swakopmund, Erongo Region. **Client: KPM Environmental Consultants. Responsibilities:** The Baseline Write-Up of Physical Environment (Soils, Geology, Hydrogeology and Hydrology). **Year:** 2022/2023.
- Desktop Water Resources Assessment as part of the Environmental Impact Assessment (EIA) for the proposed Irrigation Activities in Divundu Settlement, Kavango East Region. **Client: I.N.K Enviro Consultants cc. Responsibilities:** Baseline Assessment of surface & groundwater resources and Compilation of Water Resources Impact Assessment Report. **Year:** 2023
- Hydrogeological (Groundwater) Exploration Study for the siting of 2 new boreholes on Portion 2 of Farm Omapyu South II No. 76 near Omaruru in the Erongo Region. **Client: Mr. G. Narib. Responsibilities:** Desktop Study, Borehole siting, compilation of the Desktop & Siting Report. **Year:** 2022/2023.
- Geohydrological/Hydrogeological Assessment Report as part of the Environmental Impact Assessment (EIA) for the Proposed Mining Activities on the Mining Licence (ML) No. 247 (ML-247) located northeast of Karibib in the Erongo Region, Namibia. **Client: Africa Big Rhino Mining (Pty) Ltd. Responsibilities:** Site visit,

Assessment, compilation of the Groundwater Assessment Report. **Year:** 2022. The compilation of the Technical Report for the Application of Groundwater Abstraction & Use Permit. **Year:** 2023.

- Hydrogeological Assessment Study for the proposed New Landfill within the Karibib Townlands of the Erongo Region, Namibia. **Client:** Karibib Town Council. **Responsibilities:** Site visit, Data collection & analysis, compilation of the Groundwater Impact Assessment Report. **Year:** 2022.
- Amendment of the Environmental Impact Assessment (EIA) & Development of the Environmental Management Plan (EMP) for the Road Design for the Proposed Upgrade to Bitumen Standard of the DR3633 Tsandi-Omugulugombashe road (22km) in the Omusati Region, Namibia. **Client:** D&P, Archetype and Tweya (DAT-Joint Venture) for Roads Authority of Namibia. **Responsibilities:** Updating the EIA Report and EMP to incorporate the borrow pits. **Year:** 2022.
- Desktop Hydrological & Hydrogeological Assessment Study for the Construction (Establishment) and Operation of a Bulk Fuel Storage Facility at the Eros Airport, Windhoek in the Khomas Region, Namibia. **Client:** Central Oil Namibia (Pty) Ltd. **Responsibilities:** Compilation of the Water Resources Impact Assessment Report. **Year:** 2022.
- Socio-economic Impact Assessment (and Action Plan) for B2Gold Otjikoto Mine (current status and mine closure preparation) in the Otjozondjupa Region, Namibia. **Client:** Southern African Institute for Environmental Assessment (SAIEA) for B2Gold Namibia. **Responsibilities:** Conducting Employee Interviews (One-on-One) / Socio-Economic Surveys with the B2Gold Namibia (Ottjokoto Mine) employees from the Mining, and Environmental Departments / Sections (for the representative sample of 330 employees). **Year:** 2022
- Hydrogeological Impact Assessment Report for the Proposed Establishment of a Mixed Residential and Commercial Property Development (Avis Ridge) at Avis Dam of the Klein Windhoek Suburb, Windhoek – Khomas Region, Namibia. **Client:** OMAVI Geotechnical & Geo-Environmental Consultants cc for KHD Investments CC. **Responsibilities:** Site visit, Data collection & analysis, compilation of the Groundwater Assessment Report. **Year:** 2022
- Feasibility Study: Upgrading Scenario for MR033 Mata-Mata Border Post - Gochas -Stampriet (291 Km) in the Hardap Region and small part of //Karas Region, Namibia. **Client:** Archetype Project Consultants, D&P Consulting Engineers & Amir Consulting Services (ADA-Joint Venture) for Roads Authority. **Responsibilities:** Site Visit & Assessment, Hydrogeological Impact Assessment, Co-Author of the Environmental & Social Impact Assessment (ESIA) Report & Management Plan (ESMP). **Year:** 2022
- The Strategic Environmental Assessment (SEA) for the Windhoek Municipal Council (City of Windhoek). In the Khomas Region: Strategic Planning for 2020 to 2023. **Client:** Windhoek Municipal Council (City of Windhoek). **Responsibilities:** Compilation of the Hydrogeological (Groundwater) Baseline Status Quo, Impact Assessment & Implementation. **Year:** 2021-2023.
- Environmental Scoping Assessment Study for the Proposed Mineral Prospecting & Exploration Activities on five (5) Exclusive Prospecting Licenses (EPLs) No. 8655, 8656, 8664, 8671 & 8672 located northeast of Gobabis in the Omaheke Region, Namibia. **Client:** Noronex Exploration and Mining Company Pty Ltd, under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Site visit & Assessment, Facilitation of Public Participation & Engagement and Compilation of Environmental Assessment Report & EMP. **Year:** 2022
- Comprehensive Environmental Management Plans (EMPs) for the Existing Solid Waste Dumpsites: Rehoboth in the Hardap Region and Rundu in the Kavango East Region, Namibia. **Client:** Rehoboth Town Council &

- Rundu Town Council** under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Site Visits & Assessments, Data Collection & Analysis, Compilation of Comprehensive EMPs, Project Supervision of the interns / environmental trainees on the projects, and Project Documents Review. **Year:** 2022
- Environmental Impact Assessment (EIA) Study and Development of an Environmental Management Plan (EMP) for the Proposed Oniipa Town Solid Waste Dumpsite in the Oshikoto Region, Namibia. **Client: Oniipa Town Council** under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Site Selection, Visit & Assessment, Facilitation of Public/Stakeholders Consultation & Engagement (including Consultation Meetings), Compilation of the EIA Report & EMP, Project Supervision of the intern / environmental trainee on the project, and Project Documents Review. **Year:** 2022 – ongoing.
 - Environmental Management Plan (EMP) for the Existing Rehoboth Solid Waste Dumpsite in Hardap Region, Namibia. **Client: Rehoboth Town Council** under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Project Supervision of 4 interns / graduates working on the projects, Site Visit and Assessment, Data Collection, and Project Documents Review. **Year:** 2022.
 - Environmental Impact Assessment (EIA) Study for the Oxidation Ponds and Sewage Treatment Plant in Eenhana Town, Ohangwena Region, Namibia. **Client: Eenhana Town Council** under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Project Supervision of 4 interns / graduates working on the projects, Site Visits and Assessments, Project Documents Review. **Year:** 2022-ongoing
 - Development of the Environmental Management Plan (EMP) for the Existing Effluent Treatment Plant in Lüderitz, //Karas Region, Namibia. **Client: Lüderitz Town Council** under Excel Dynamic Solutions (Pty) Ltd. **Responsibilities:** Project Supervision of 4 interns / graduates working on the projects, Site Visits and Assessments, Project Documents Review. **Year:** 2022 -current. **Year:** 2022.
 - Environmental and Social Impact Assessment (ESIA) for the Upgrade of the Ohangwena II Wellfield Water Supply Scheme in the Ohangwena Region, Namibia. **Client: NamWater** under Outrun Consultants cc. **Responsibilities (Subcontractor):** Preliminary Public & Stakeholders' Consultation Meetings Facilitation, Site Visit and Assessments. **Year:** 2022.
 - Baseline Water Resources Assessment & Environmental and Social Impact Assessment (ESIA) for the Upgrade of the Ohangwena II Wellfield Water Supply Scheme in the Ohangwena Region, Namibia - as part of the Namibia Water Sector Support Program (NWSSP). **Client: Namibia Water Corporation Limited (NamWater) (under Outrun Consultants CC and Element Consulting Engineers).** **Responsibilities:** Public & Stakeholders' Consultation Meetings Facilitation (6 meetings), Site Visit & Assessments, and contributing author of the ESIA documents. **Year:** 2022-2023.
 - Development of the Environmental Compliance Guideline Manual for the Flexible Land Tenure System (FLTS) Implementation by the Relevant Authorities in Namibia. **Client: Ministry of Agriculture, Water and Land Reform (supported by GIZ Namibia under D&P Engineers and Environmental Consultants).** **Responsibilities:** Compilation of the Guideline Manual and preparation of the Draft FLTS Manual Presentation. **Year:** 2022.
 - Environmental Scoping Assessment (ESA) Study for the Construction, Operation and Decommissioning of a New Waste Dumpsite for the Helao Nafidi Town Council, Ohangwena Region, Namibia. **OMAVI Geotechnical & Geo-Environmental Consultants CC (O. B. O Helao Nafidi Town Council).** **Responsibilities:** Compilation of the ESA Report and Environmental Management & Rehabilitation Plan (EMRP). **Year:** 2022

- Environmental Assessment for the proposed prospecting and exploration activities on Exclusive Prospecting Licenses (EPLs) No. 8234 & 8323 near Aus, EPL 8350 between Tses & Asab and Gibeon in the //Karas Region and Hardap Region, respectively. **Client: Dwyka Investment CC. Responsibilities:** Site visits & Assessments, Facilitation of Public Participation & Engagements and Compilation of Environmental Assessment Reports & EMPs and Project Management. **Year:** 2022
- Renewal, Amendment and Transfer of the Environmental Clearance Certificate (ECC) for the Continued Operation of the Existing Walvis Bay Stone Processing Facility on Farm No. 38 and Reclamation / Rehabilitation of an Abandoned Quarry within the Walvis Bay Rural Constituency, Erongo Region, Namibia. **Client: OMAVI Geotechnical & Geo-Environmental Consultants CC (O. B. O BC Stone Products Namibia (Pty) Ltd).** **Responsibilities:** Compilation of the ECC Renewal, Transfer & Amendment Applications, Environmental Overview, Management & Rehabilitation Plan (EMRP), Public/Stakeholder Updated & Consultation Facilitation, and Site visit & assessment. **Year:** 2022
- Environmental Assessment for the Proposed Construction and Operation of Four Oxidation Ponds in the Tses Village, //Karas Region. **Client: Dunamis Consulting Engineers & Project Managers (Pty) Ltd.** **Responsibilities:** Site visit & Assessment, Facilitation of Public Participation and Compilation of Environmental Assessment Report & EMP as well Bi-Annual Environmental Monitoring. **Year:** 2021 - 2023
- Geohydrological Assessment for the Proposed Upgrade to Bitumen Standard of the DR1953 Karibib-Otjimbingwe Road (56km) in the Erongo Region, Namibia: Road Construction Water Supply. **Client: Tweya Consulting Engineers for Roads Authority of Namibia.** **Responsibilities:** Data collection & analysis, compilation of the Groundwater Report. **Year:** 2021
- Geohydrological Assessment for the Proposed Upgrade to Bitumen Standard of the DR3616 Tsandi-Onesi-Epalela road (48km) in the Omusati Region, Namibia: Road Construction Water Supply. **Client: D&P, Archetype and Tweya (DAT-Joint Venture) Consulting Engineers for Roads Authority of Namibia.** **Responsibilities:** Data collection & analysis, compilation of the Groundwater Report. **Year:** 2021
- The Strategic Environmental Assessment for the Windhoek Municipal Council (City of Windhoek) for the period of 2020 to 2030 in the Khomas Region, Namibia. **Client: Windhoek Municipal Council (under Excel Dynamic Solutions (Pty Ltd).** **Responsibilities:** Groundwater Baseline & Assessment Component and Legal Framework Review. **Year:** 2021 -2022
- Detailed Environmental Assessment for the proposed exploration and mining of dimension stone on Mining Claims No. 71609 to 71617 near Arandis in the Erongo Region, Namibia. **Client: OMAVI Geotechnical & Geo-Environmental Consultants CC (O.B.O Okonde Mining and Exploration CC).** **Responsibilities:** Facilitation of Public Participation, Compilation of Environmental Assessment Report & EMP and incorporating specialists' input into the Report and EMP. **Year:** 2021
- Desktop Geohydrological Assessment (DGA): Proposed Groundwater Abstraction for Agricultural activities along the Orange River between Oranjemund (Namdeb Mining area) and Rosh Pinah in the Oranjemund Constituency, //Karas Region, Namibia. **Client: KPM Environmental Consulting (O.B.O Oranjemund Constituency Office).** **Responsibilities:** Baseline Geohydrological Assessment, Data Analysis and Compilation of the Report. **Year:** 2020
- Hydrogeochemical Data Management of Potential Hydrocarbon Contamination Areas for the Kladno District Project in the Central Bohemian Region, Czech Republic. **Client: Green Gas DPB a.s (under the VSB**

Technical University of Ostrava). **Responsibilities:** Groundwater and soil chemistry Data Analysis in Preparation for Reporting & Database entry. **Year:** 2020

- Groundwater Data Management for the Prackovice D8 (highway) Landslide Project in the Litoměřice District, Ústí nad Labem Region of the Czech Republic. **Client: Czech Geological Survey** under VSB-Technical University Ostrava projects. **Responsibilities:** Borehole Data Analysis in Preparation for Reporting & Numerical Modelling. **Year:** 2020
- Environmental Scoping Assessment (ESA) Studies for the Proposed Exploration Activities of Dimension Stone and Industrial Minerals on Exclusive Prospecting Licenses (EPLs) 6139 and 7008 near Karibib in the Erongo Region, Namibia. **Client: OMAVI Geotechnical & Geo-Environmental Consultants CC (O.B.O Agulhas Mineral Resources CC & Naris Mineral Resources CC**, respectively). **Responsibilities:** Facilitation of Public Participation and Engagements, Site visits & assessments, Compilation of Environmental Assessment Reports & EMPs. **Year:** 2020
- Desktop Water Resources Assessments as part of the two Environmental Impact Assessments (EIAs) for the Embankment of Muzii and Nankuntwe Combined School Platforms in the Zambezi Region, Namibia. **Client: I.N.K Enviro Consultants (O.B.O Zambezi Regional Council)**. **Responsibilities:** Baseline Assessment of surface & groundwater resources and Compilation of Water Resources Risk Assessment Reports. **Year:** 2020
- Desktop Geohydrological Assessment (DGA) as part of the Environmental Impact Assessments (EIA) - The Proposed Eco-Friendly Seawater Desalination Plant in Henties Bay, Erongo Region, Namibia. **Client: Namib Eden Trading CC**. **Responsibilities:** Desktop Study and Compilation of the Water Impact Resources Report. **Year:** 2019/2020
- Desktop Geohydrological Assessments as part of the Environmental and Social Impact Assessments (ESIAs) for the Proposed Pilot Desalination Plants in Bethanie Town and Grünau Settlement in the //Karas Region, Namibia. **Client: KPM Environmental Consulting (O.B.O NamWater)**. **Responsibilities:** Baseline Geohydrological Assessment, Data Analysis and Compilation of the two Reports. **Year:** 2019
- A Strategic Environmental and Social Assessment (SESA) / Environmental and Social Management Framework (ESMF) for the Namibia Water Sector Support Program (NWSSP), Namibia. **Client: African Development Bank Group (AfDB) with the Ministry of Agriculture, Water and Land Reform (MAWLR)**. **Responsibilities:** Baseline Hydrogeological and Environmental Assessment, Reports & Framework Compilation, Key Stakeholders Engagement, and Internal Documents Review. **Year:** 2019/2020
- Environmental Assessment (EA) for the proposed Construction and Operation of a Wastewater Treatment Plant for Linus Shashipapo Secondary School in the Kavango East Region, Namibia. **Client: Dunamis Consulting Engineers & Project Managers**. **Responsibilities:** Project Management, Site visit & Assessment, Facilitation of Public Participation (including public meeting) and Compilation of Environmental Assessment Report & EMP. **Year:** 2019
- Hydrogeological Assessment and Groundwater Abstraction and Use Permit Application & Environmental Scoping Assessment for the proposed Lucerne Irrigation Scheme on Farm Klein Nabas 137 (Marlo Portion) near Stampriet, Hardap Region, Namibia. **Client: Green Team Consultants (O.B.O Jonkheer Boerdery Pty Ltd)**. **Responsibilities:** Site visit and assessment, Compilation of Desktop Groundwater Report and Technical Report for Groundwater Permit application and Environmental Assessment Report & EMP. **Year:** 2019

- Hydrogeological Study for the Expansion of Tsumeb Smelter Monitoring network (new boreholes) in the Oshikoto Region, Namibia. **Client: Dundee Precious Metals Tsumeb (DPMT). Responsibilities:** Borehole siting (geophysical survey), Drilling & borehole construction supervision & data analysis. **Year:** 2018
- National Environmental Assessment for the MTC Namibia 100% Population Coverage: Proposed new 554 network towers / sites in all the Regions of Namibia. **Client: Mobile Telecommunications Limited (MTC Namibia). Responsibilities:** Facilitation of (Northern Regions) Regional Focused Consultation Meetings, Compilation of 14 Draft & 14 Generic EMPs, Site visits, Landscape (soil, topography, hydrology, and geohydrology) specialist, and Environmental Assessment Reports. **Year:** 2017-2018
- Updating of the Numerical Groundwater Flow Model for the Lower Kuiseb River Aquifers near Walvis Bay, Erongo Region, Namibia. **Client: Namibia Water Corporation Limited (NamWater). Responsibilities:** Co-Training of NamWater Project Staff (Modelling) and Data Collection & Collation, assisted with the updating of the numerical model, and overall Model Update Report Compilation. **Year:** 2018
- Groundwater Monitoring as part of Environmental Audit and Groundwater abstraction & use permit license renewal for Okatji Mine, Erongo Region, Namibia. **Client: Okatji Marble Mine cc. Responsibilities:** Compilation of Groundwater Abstraction Permit Report, Training of mine personnel on EMP implementation and groundwater level measurement & sampling and Environmental monitoring report. **Year:** 2017/2018
- Dust monitoring for Otjozonde Mine for a period of 6 months (Aug 2017 to Jan 2018). **Client: Otjozonde Mining (Pty) Ltd. Responsibilities:** Training of Site Personnel on bucket installation at site, Monitoring and Monthly Air Quality Report Compilation. **Year:** 2017-2018.
- Baseline Air Quality Assessment for the proposed establishment and operation of an incinerator in Ongwediva, Oshana Region. **Client: Ongwediva Town Council for Excel Dynamic Solutions Pty Ltd. Responsibilities:** Site visit, air quality survey and compilation of the Baseline Air Quality Report (under the Supervision of Quentin Hurt/SkySide). **Year:** 2017
- Oranjemund Water Sustainability Study Phase 1 & 2, //Karas Region, Namibia. **Client: Freedthinkers. Responsibilities:** Data Analysis, Hydrogeochemical Component & Report Compilation (contributing author). **Year:** 2017
- Geohydrological Investigation of the Groundwater Resources at Outjo and the Possible Impact of the Development of 60 New Residential Plots in the Kunene Region, Namibia. **Client: Municipality of Outjo. Responsibilities:** Field Investigation, Project Management, Data collection & Analysis Technical Report Compilation and Client Liaison. **Year:** 2016
- Groundwater Quality Assessment for Sambyu Village Water Supply Scheme, Kavango East Region, Namibia. **Client: Iiso Consulting Namibia O.B.O NamWater. Responsibilities:** Groundwater sampling, Site visit, Groundwater impact assessment, Compilation of groundwater quality report and Project management. **Year:** 2017.
- Groundwater Monitoring and Sampling for the De Brochen Project in the Limpopo Province, South Africa. **Client: Anglo American Platinum. Responsibilities:** Groundwater Level measurement, Surface water sampling. **Year:** 2016
- Environmental Hydrocarbon Contamination Assessments Phase 1 for Interchain Logistics and Nulaid Fuel Stations in Johannesburg, Gauteng Province, South Africa. **Client: SASOL. Responsibilities:** Site Inspection, Measurement of water levels in tank observation wells, Soil Augering, sampling and co-reporting. **Year:** 2016

- Groundwater Pollution and Level Monitoring and Sampling. **Client: Dundee Precious Metals** Tsumeb (DPMT) in the Oshikoto Region, Namibia. **Responsibilities:** Hydrocensus, Borehole profiling and Data analysis. **Year:** 2015 to 2017
- Skorpion Zinc Mine Closure Plan in the //Karas Region, Namibia. **Client: Skorpion Zinc (Pty) Ltd.** **Responsibilities:** Compilation of Mine Closure Report, Geochemical and Groundwater input, Integrating specialists' inputs in EIA report. **Year:** 2015

KEY ENERGY INFRASTRUCTURE PROJECTS' ENVIRONMENTAL ASSESSMENT STUDIES

- Environmental Impact Assessment (EIA) Supplementary Study to meet IFC Standards – Proposed Construction and Operation Of a 55MW Solar Photovoltaic (PV) Plant and Associated Infrastructures on a Portion of Portion 2 of Farm Klein Spitskop No. 153 near Keetmanshoop, ||Kharas Region. **Client: SolNam Energy (Pty) Ltd.** **Responsibilities:** Compilation of the Background Information Document (BID), facilitation of public & stakeholders' engagement/consultation meeting, Site visit and assessment, Compilation of the Stakeholder Engagement Plan (SEP), supplementary EIA Report and Environmental Management Plan (EMP). **Year:** 2023.
- Bi-Annual Environmental Monitoring (October 2023 onwards) for the Construction of the Cleanergy Green Hydrogen Demonstration Plant (GHDP) in Walvis Bay Town of the Erongo Region, Namibia. **Client: Cleanergy Solutions Namibia (Pty) Ltd (a JV between Ohlthaver & List and CMB.TECH).** **Responsibilities:** Site Visit & Auditing, Observations, conducting personnel interviews on Environmental Compliance, and Compilation of the Monitoring Report. **Year:** 2023.
- Environmental Impact Assessment Study and Development of the Environmental Management Plan for the proposed Cleanergy Green Hydrogen Demonstration Plant Environmental Impact Assessment, Walvis Bay, Namibia. **Client: Client: Cleanergy Solutions Namibia (Pty) Ltd (a JV between Ohlthaver & List and CMB.TECH).** **Responsibilities:** Project Consultant under SRK Consulting South Africa) (Pty) Ltd. **Year:** 2022.
- Environmental Impact Assessment (EIA) for the Environmental Clearance Certificate (ECC) of the Construction and operational activities of a 5-megawatt (MW) Solar (Photovoltaic) Power Plant and ongoing Bi-Annual Environmental Monitoring in Okatope, Oshikoto Region, Namibia. **Client: Unisun Energy (Pty) Ltd (Enertronica Santerno Group (Italy)).** **Responsibilities:** Environmental Clearance Certificate Renewal Report, Site Visit, Environmental Compliance Check, Project Management, and Continued Environmental auditing. **Year:** 2021 to date.
- Environmental Impact Assessment (EIA) amendment for the ECC of the 22.80 Mega-Watt (MW) Trekkopje Solar (Photovoltaic) Park and ongoing Bi-Annual Environmental Monitoring near Arandis in the Erongo Region, Namibia. **Client: Sertum Energy Namibia Pty Ltd.** **Responsibilities:** Compilation of the ECC Renewal Report/Updating the EMP, Site Assessment, Project Management, and Continued / Ongoing Bi-Annual Environmental Auditing. **Year:** 2020 to date.
- Comprehensive Draft Environmental Management Plan (EMP) for the Operations and Maintenance of the Existing 3-Megawatt (MW) Solar Photovoltaic (PV) Park within the Townlands of Arandis in the Erongo Region, Namibia: An Application for Environmental Clearance Certificate (ECC). **Client: OLC Arandis Solar Energy Pty Ltd.** **Responsibilities:** Site Visit & Auditing, Compilation of the Comprehensive EMP and Project Management. **Year:** 2022.

- Environmental Scoping Assessment (ESA) for the Proposed Construction and Operation of a 125km 33kv Overhead Power Distribution Line from Maroelaboom to Mangetti Dune in the Otjozondjupa Region. **Client: Central North Regional Electricity Distributor (CENORED).** **Responsibilities:** Environmental impact assessment, public & stakeholders engagement, Site/route visit, Assessment, compilation of the EIA Report and EMP. **Year:** 2020.
- Environmental Assessments of two 66 kV powerlines for the Solar PV sites near Keetmanshoop, //Karas Region and Mariental, Hardap Region, Namibia. **Client: GreeNam Electricity (Pty) Ltd.** **Responsibilities:** Compilation of Environmental Assessment Reports & EMPs and Public Consultation. **Year:** 2017.

REFERENCES

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Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my educational qualifications, and professional experience.



.....

Signature

Date: 10 March 2024

EAPAN



ENVIRONMENTAL ASSESSMENT PROFESSIONALS OF NAMIBIA

PROFESSIONAL MEMBERSHIP 2024

This is to certify that

Fredrika Shagama

*Is a registered member of EAPAN under the following
membership category*

“PRACTITIONER”

A handwritten signature in black ink, appearing to be 'H. Shagama'.

President

A handwritten signature in black ink, appearing to be 'H. Petrus'.

Secretary

Membership No: 183

Valid from 01 January 2024 to 31 December 2024