Managing Social and Environmental Risks and Opportunities in a New Uranium Mine: The Case of UraMin's Trekkopje Project in Namibia

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Abstract

A comprehensive Social and Environmental Impact Assessment (SEIA) is now mandatory for companies that strive to meet the performance standards established by the Equator Principles. These principles, agreed to by major banks, are frequently a condition of financing. Additionally, leading companies seek to meet the IFC Performance Standards on Social and Environmental Sustainability, even when financing has not been provided by the IFC.

SEIAs commence with baseline studies of all the affected environmental and social components, and are informed by a fully participative public engagement process. The SEIA must comply with legislative and policy requirements and relevant international agreements and is linked to an implementable Social and Environmental Management Plant (SEMP) and closure plan. The potential for promoting sustainable development is an important factor in evaluating alternatives, and impact mitigation strategies will only be considered where avoidance of impacts is not possible.

This paper outlines how these best practice requirements have guided the environmental and social impact assessment for the Trekkopje Uranium Project, located in Namib Desert near Namibia's west coast. The paper also demonstrates how a comprehensive SEIA improves a mining company's ability to manage project risks. Particular reference is made to the public participation process.

1. Introduction

Internationally, operators and financiers of mines and large industrial projects are being held increasingly accountable for environmental degradation and social dislocation. This has led to many companies following rigorous social and environmental impact assessments (SEIAs). This paper describes the SEIA process for the Trekkopje Uranium Project, which lies some 70 km north-east of Swakopmund, covering an area of about 30,000 ha (see Figure 1). The Rössing Uranium mine lies 35 km south of the property and the newly developed Langer Heinrich Uranium mine lies approximately 80 km to the east-south-east.

2. The Trekkopje Uranium Project

The Trekkopje Project is located in the hyper-arid Namib Desert. Hot dry conditions during the day and cool nights are common. There is no surface water on the site, except during rare periods of exceptional rainfall. Major rivers in the region, such as the Swapkop River, flow less than five times in a decade. Limited quantities of highly saline ground water are present within the tenement.

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Trekkopje lies in the Central Namib vegetation zone. Desert environments are typically very sensitive to disturbance and require long recovery times (sometimes thousands of years). For this reason, and the presence of many endemic species, careful management of the sensitive ecosystems surrounding the ore deposit is required. Rare and keystone species are identified and where buffer zones cannot be created to protect individuals, suitable species are removed for replanting.

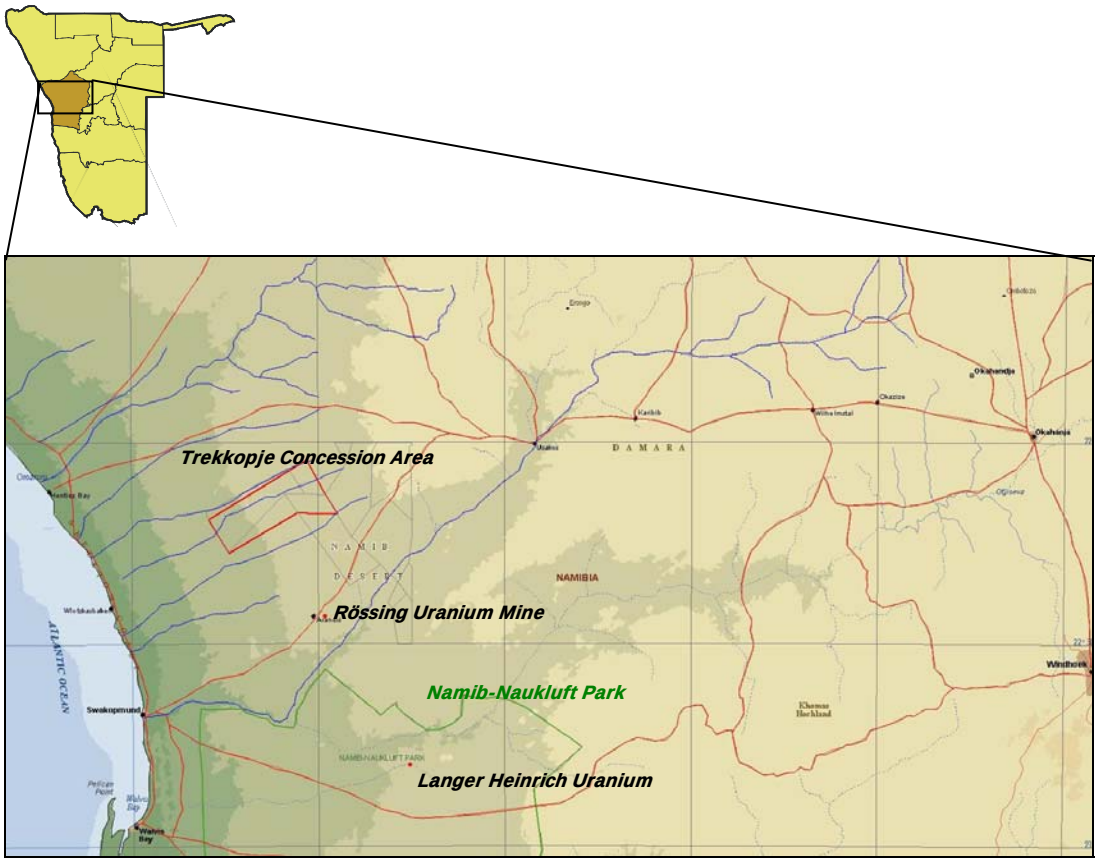

Figure 1. Regional setting of the Trekkopje Uranium Project.

The zone of influence of the mine is not restricted to the mining lease area – it extends along the servitudes required by the mine to bring in water and electricity, and along the road links. Management of environmental issues is therefore not restricted to the site.

3. SEIA

SEIA processes are conducted to assist projects to contribute to poverty alleviation, employment creation and improved economic development while protecting the natural environment, minimising waste and identifying appropriate interventions for ameliorating unavoidable impacts. SEIAs seek to predict the impacts of a proposed project on the human and natural environment. They require a multi-disciplinary team who attempt to identify the methods, approaches and alternatives which represent the optimal combination of economic, social and environmental costs and benefits. The process should identify ways of avoiding or reducing unacceptable impacts and shaping the project to suit its environment. The SEIA process is predictive and must ultimately produce a decision-making tool. The incorporation of impact mitigation into project design facilitates progress towards sustainable development.

A comprehensive SEIA is now mandatory for companies that strive to meet the requirements established by the Equator Principles. These principles, agreed to by major banks are frequently a condition of financing. The Equator Principles are a framework for financial institutions to manage environmental and social issues in project financing. They provide guidance on the management of sustainability issues and principles to which projects must adhere if funding from banks that have adopted the Equator Principles is sought[3].

The Equator Principles require an impact assessment to address the following:

- assessment of baseline environmental and social conditions,
- requirements under host country laws and regulations, applicable international treaties and agreements,
- sustainable development and use of renewable natural resources (in this case the primary commodity, uranium ore, is not renewable, but other resources that are required are renewable – water, for example).
- protection of human health, cultural properties and biodiversity, including endangered species and sensitive ecosystems,
- use of dangerous substances,
- major hazards,
- occupational health and safety,
- fire prevention and safety,
- socioeconomic impacts,
- land acquisition and land use,
- impacts on indigenous peoples and communities,
- cumulative impacts of existing projects, the proposed project, and anticipated future projects,
- participation of affected parties in the design, review and implementation of the project,
- consideration of feasible environmentally and socially preferable alternatives,
- efficient production, delivery and use of energy, and
- pollution prevention and waste minimisation, pollution controls, and solids and chemical waste management.

(source: www.equator-principles.com)

In Namibia, assessment processes must be aligned with the requirements of the Namibian Constitution, relevant legislation (including the Minerals Act, no. 33 of 1992, and the Environmental Management Bill) and the Namibian Environmental Assessment Policy (MET, 1995). Stakeholder participation is an important component of the SEIA process. Participants must have opportunities to question the process, suggest changes, raise issues and concerns and ensure that their contributions to the process have been evaluated.

An environmental impact assessment is a mandatory requirement for mining projects in Namibia in terms of Section 50 of the Minerals Act (No. 33 of 1992). This imperative is reinforced by the Namibian Environmental Assessment Policy (MET, 1995), which has, as its objectives, to:

- inform decision makers and promote accountability for decisions,
- enable a broad range of options and alternatives to be considered,
- ensure a high degree of public participation and involvement by all sectors of the Namibian public, and
- promote sustainable development, ensure that costs and benefits are taken into account and that internationally recognised standards are promoted. In addition negative, secondary and cumulative impacts must be minimised and benefits enhanced.

[3] The Principles arose from a meeting between the International Finance Corporation (IFC) and the banks to address environmental and social risks in project financing. For more information, see www.equator-principles.com

SEIA commences with baseline studies of all the affected environmental and social components, with a fully participative, integrated, culturally appropriate and on-going public engagement process (see Figure 2). The implication for the Trekkopje Project of this approach was that a substantial public engagement process was followed from the outset. Contributions from stakeholders were invaluable in identifying key risks to the project, the affected communities and the environment.

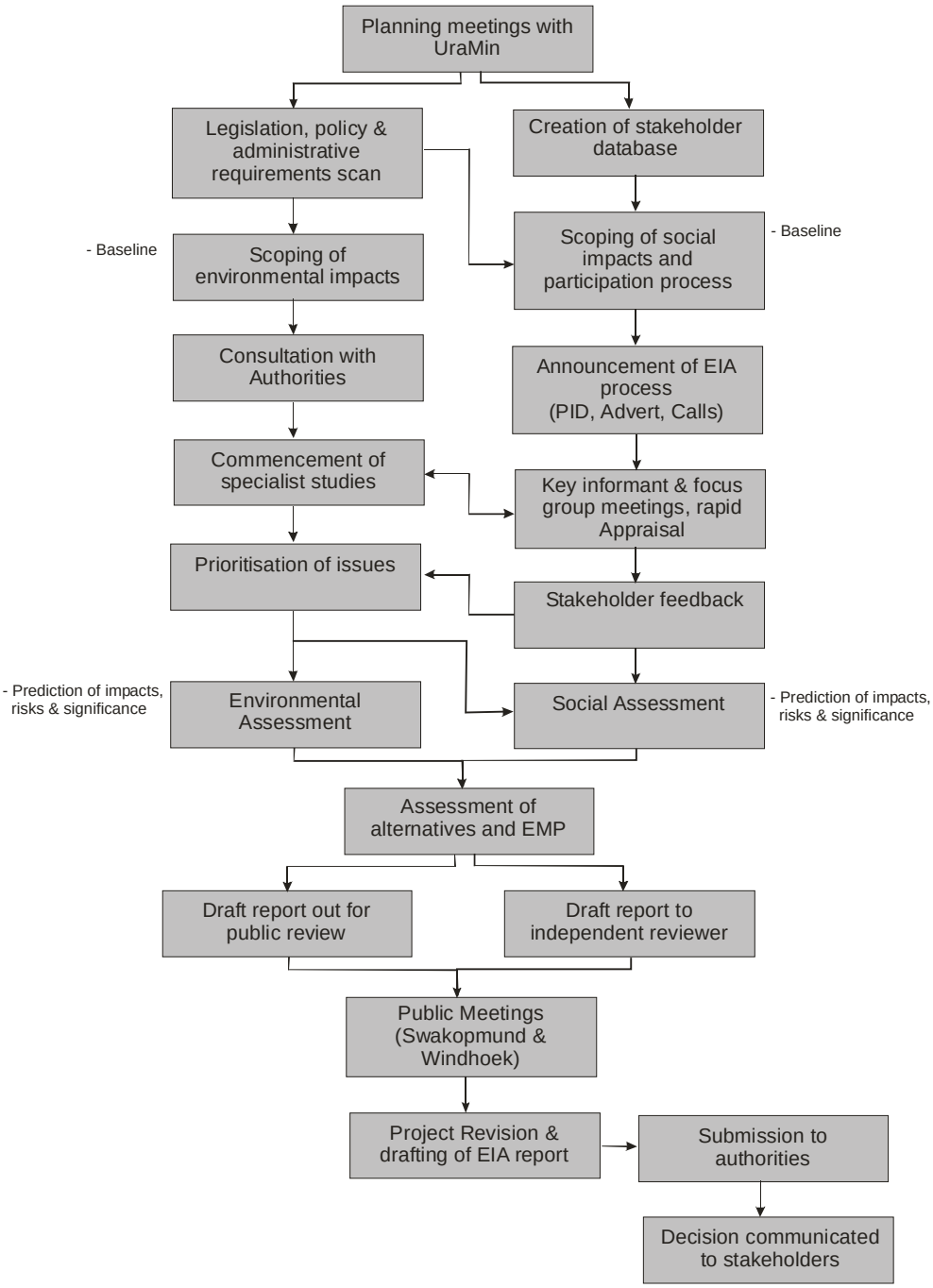

Figure 2. Steps in the Trekkopje EIA process (PID: public information document; EMP: environmental management plan).

The initial scoping for the project commenced in early February 2006. The specialist studies are ongoing and public review of the draft report is expected to take place mid 2007. The draft will also be submitted for independent review. The final EIA report will be submitted to the authorities for decision-making once the review/redrafting process is complete.

Issues identified by stakeholders in the initial stages of consultation covered a wide range: the difficulties of desalinating sea water on the Namibian coast due to dissolved organics in the water, the dangers of seepage remobilising uranium salts near tailings impoundments or heap leach pads, the concerns of Arandis residents around radiation exposure, the potential conflict between the mine and eco-tourism in the Spitzkoppe area, the need to protect the historical Annaberg Tin Mine and the need for plant rescue missions. The public participation process provided key inputs into both the creation of baselines and the assessment of impacts arising from the proposed project.

4. The Public Participation Process

A public participation process addresses all the components of sustainable development and is not only a tool to achieve the particular objectives listed below, but also provides a mechanism for integrating environmental, economic and social aspects of a project. This ensures that all impacts are addressed and the mitigation measures address the requirements for integration between environmental and socio-economic concerns.

The objectives of the public participation are to:

- identify and address the concerns, issues and questions of interested and affected parties,
- provide information to stakeholders on the project on an ongoing basis,
- identify opportunities, issues, constraints and alternatives,
- discuss the methodology and approach adopted for the SEIA process, provide opportunities for input from public participants and consider alternative methods and approaches on the basis of such inputs,
- identify additional interested and affected parties,
- ensure and facilitate opportunities for affected communities and marginalized groups to discuss their concerns,
- obtain, verify and/or update relevant data, and
- provide feedback on the findings of the assessment and request comments on the findings.

The stakeholder identification process resulted in a database which included all interested and affected parties in the private and public sector. Although, as is usual with a public participation process, a relatively small nucleus of stakeholders participated actively, information on project developments and changes were regularly submitted to the entire database. For the Trekkopje project, there were considerable beneficial outcomes in that stakeholders provided information that enabled the team to address issues and impacts which might otherwise have escaped the assessment process.

A particular concern that emerged in the pp process was that of the Spitzkoppe community, an extremely underdeveloped and marginalised group. The Trekkopje project is located on communal land and within the //Gaingu Conservancy, and the necessity to ensure that some benefits flowed to this community was an important consideration in the SEIA. It also placed UraMin in a position to undertake a very early development initiative by improving the water supply for the community.

Transparency and inclusiveness do not always have feel-good results, and the information disseminated to stakeholders meant, on occasion, that the study team had to deal with extremely angry stakeholders. The beneficial results were, however, that stakeholders, on the whole, tended to air their grievances to the study team rather than going straight to the media. All stakeholders, from all sectors, were always willing to negotiate, discuss and compromise. This is an extremely fortunate position for an EIA team to be in, as very often, stakeholders themselves can suggest an outcome which is acceptable to all parties, even though it also represents a compromise by all parties.

One of the most difficult aspects of the public participation process is the management of expectations. It is not certain whether the Trekkopje SEIA has been completely successful in this respect. In a region where unemployment is high and poverty widespread, it is understandable that everyone in an audience of 200 will believe that one of 100 job positions will be theirs. For the same reasons of poverty and unemployment, the cumulative impacts of the number of uranium mines that are envisaged in Erongo, do not emerge at public participation meetings, or even to any significant degree at focus group meetings. These impacts could be substantial, and an assessment and strategic management plan to address them cannot be achieved without the co-operation of all the mining companies involved. This has not been achievable to date. The Chamber of Mines is reportedly constituting a unit specifically for uranium producers, but it is possible that a significant number of producers will not be members of the Chamber, and will fall outside the scope of the unit.

The public participation process around the Trekkopje Project has been, in form, similar to public participation processes for other mines in other regions. However, in terms of content, it had to deal with issues dictated by the location of the project, within extremely sensitive eco-systems and disempowered communities. Environmental stakeholders are informed and have insight into possible impacts. On the other hand, disempowered people are not always aware of the negative impacts that a development could have on their future livelihood potential, their health and safety and their social structures. It is incumbent on a SEIA team to make them aware of these, so that they can negotiate from an informed position. The project team did this, and the results have been beneficial for both the mining company and the stakeholders involved.

5. Benefits of SEIA for the Trekkopje Project[4]

The public participation process has brought the mine design team into contact with stakeholders who actively engage with the project on key issues. Affected communities have been able to assist the project to identify critical social investment opportunities and NGOs have brought potential risks to the attention of the design team early on in the project's schedule. This has resulted in more constructive relationships with potentially confrontational and combative interested and affected parties.

As mentioned previously, the Trekkopje SEIA has included the off-tenement servitudes required for project in its scope. One of these servitudes is for a temporary water supply line to be run from the Namib Terminal Reservoirs, near Rössing Uranium, to the Trekkopje tenement. Several route options were considered and discussed with Namwater and other stakeholders. The initial route followed the B2 up to the Trekkopje turn off (see "proposed water pipeline" in Figure 3) and then turned north towards the tenement. An alternative route ran due north, past Arandis, to the tenement (see "temporary water pipeline" in Figure 3). The elevation difference for the

[4] All project details presented here must be regarded as preliminary as they are subject to optimization as part of the as yet incomplete feasibility study.

first route is +200 m while that for the second is -40m. The first route is 57 km long and the second one is 34 km long. Following the second route equates to substantial energy and materials savings and thus reduces the project's environmental footprint. Unfortunately, this route passes through a largely undisturbed section of the Namib and could potentially result in unacceptable impacts on endemic flora. Further work was undertaken to survey this route and the National Botanical Research Institute (NBRI) was requested to conduct a plant rescue site assessment in addition to the specialist surveys already conducted as part of the SEIA.

The SEIA followed a similar approach for the permanent pipeline route. This pipeline will transport desalinated water from a plant at the coast to the Trekkopje tenement. The most energy efficient route is due east from Wlotzkasbaken across the West Coast Recreation Area. As this area is a nature reserve, the pipeline is to be located along an existing road – this will minimise the amount of new disturbance. Stakeholders consulted in Swakopmund provided maps of sensitive lichen fields that must be avoided by the pipeline and, as a consequence, the pipeline will be installed south of the road inland. This avoids the lichen field to the north of the road. Near the coast, the ESIA's specialist archaeological survey identified an important Stone Age site on a ridge that should not be disturbed by the pipeline. The planned pipeline route was accordingly diverted around the north of the ridge. Consultation with the Wlotzkasbaken community has resulted in an investigation to move the point of abstraction from south of the settlement to a point north of Wlotzkasbaken.

For the Trekkopje project, the SEIA has been run in parallel with the mine and metallurgical plant design. This has meant that environmental and social considerations can influence the project design.

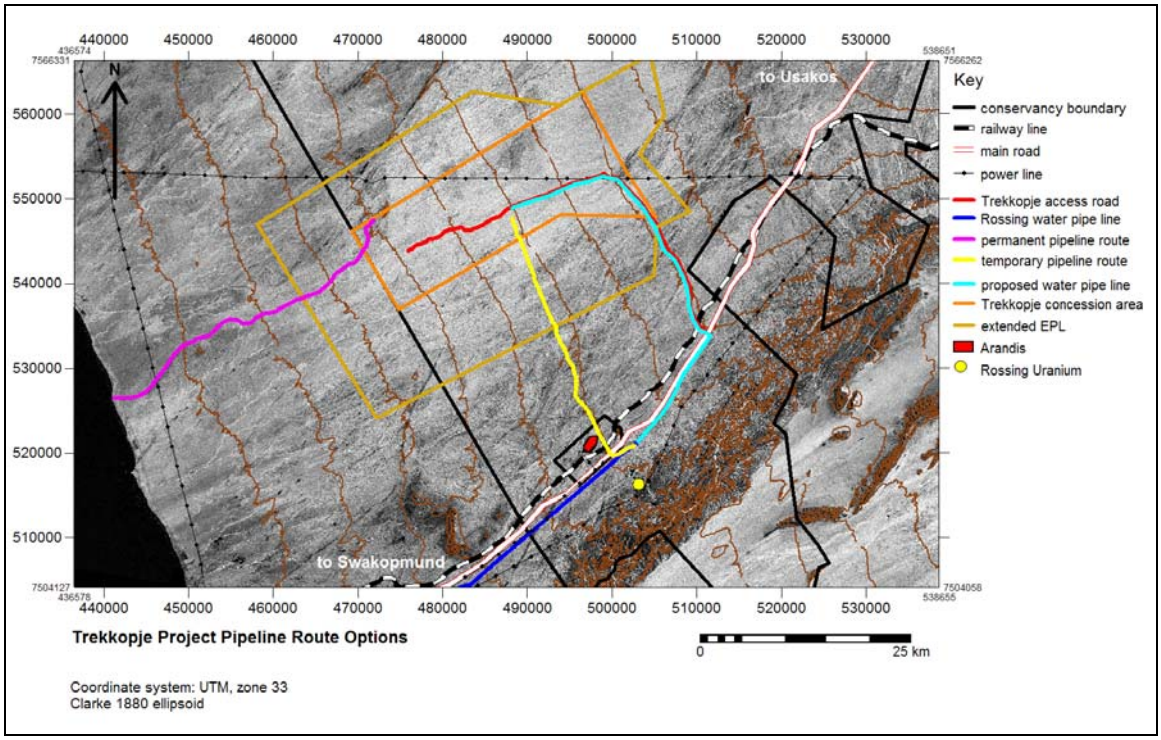

Figure 3. Proposed routes for water servitudes for the Trekkopje Uranium Project.

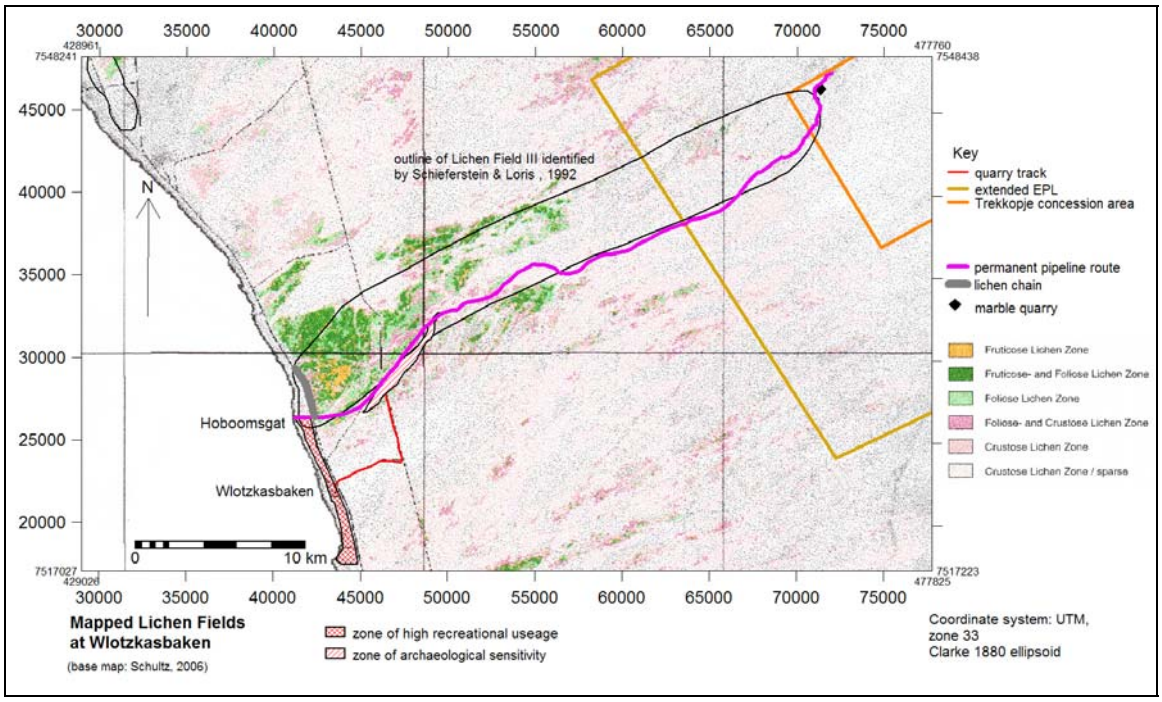

Figure 4. The permanent water pipeline route for the Trekkopje Uranium Project and the sensitive environments taken into account in the planning of the route.

6. Conclusion

Licensing a mining project is complex and challenging. The level of complexity increases if that project is a uranium project. In developing countries, the most onerous requirements are frequently those imposed by funders, but these requirements provide an extremely valuable tool for management of project risk. Living up to the spirit of the Equator Principles also enables mining projects to meet regulatory requirements. A transparent and comprehensive public engagement process has benefits for the project, the regulators and the affected communities. Potential risks can be addressed early in the design process before they become a reality.

7. References

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