PILOT PROPOSAL · WESTERN WITWATERSRAND BASIN

Amanzi ReVive™
Modular AMD Treatment for the Western Basin

Closed-loop, containerised mine-water treatment at the decant point

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Amanzi ReVive™: Modular Mine Water Treatment at the Decant Point

THE WESTERN BASIN CHALLENGE



Critical Salt Pollution

Current neutralization removes acidity but leaves high salt concentration intact.

Sensitive Site Exposure

UNESCO

Tweelopiesspruit near Cradle of Humankind UNESCO site.



AMANZI REVIVE™ MODULAR TECHNOLOGY

Direct Discharge Treatment

Containerized up to 86% factory-built plant deployed at decant point.

Simplified Chemical Process

Single reactor system requires lime only, avoiding coagulants and flocculants.

97% Intake Reduction

Closed-loop recycling eliminates effluent discharge points and fresh water purchases.

12-MONTH PILOT SPECIFICATIONS (OPTION A)

Modular Scalable Capacity

500 m²/day initial pilot with scale up to 1,800 m²/day per unit.

Uranium Removal Target

Sustained dissolved uranium removal to a 0.007 mg/l independently verified.

Budget & Commissioning

CAPEX 14–21.5 M ZAR with commissioning within 5 months of MOU.

COMMERCIAL SCALE FINANCIALS (OPTION C)

10,000 m³/day WaaS installation

- **Blended Tariff:** 28 ZAR/m³
- **Annual Revenue** 87–97 M ZAR
- **EBITDA Margin:** 60–70% (65–70 M ZAR/yr)
- **Project IRR:** 18–28%

STRATEGIC & REGIONAL SYNERGIES

ESG & ICMM Alignment

Directly advances ICMM Water Stewardship Framework and regional carbon-neutral targets.

Tailings Integration Synergy

Integrates sludge with DROGold PWGR tailings retreatment and land rehabilitation.

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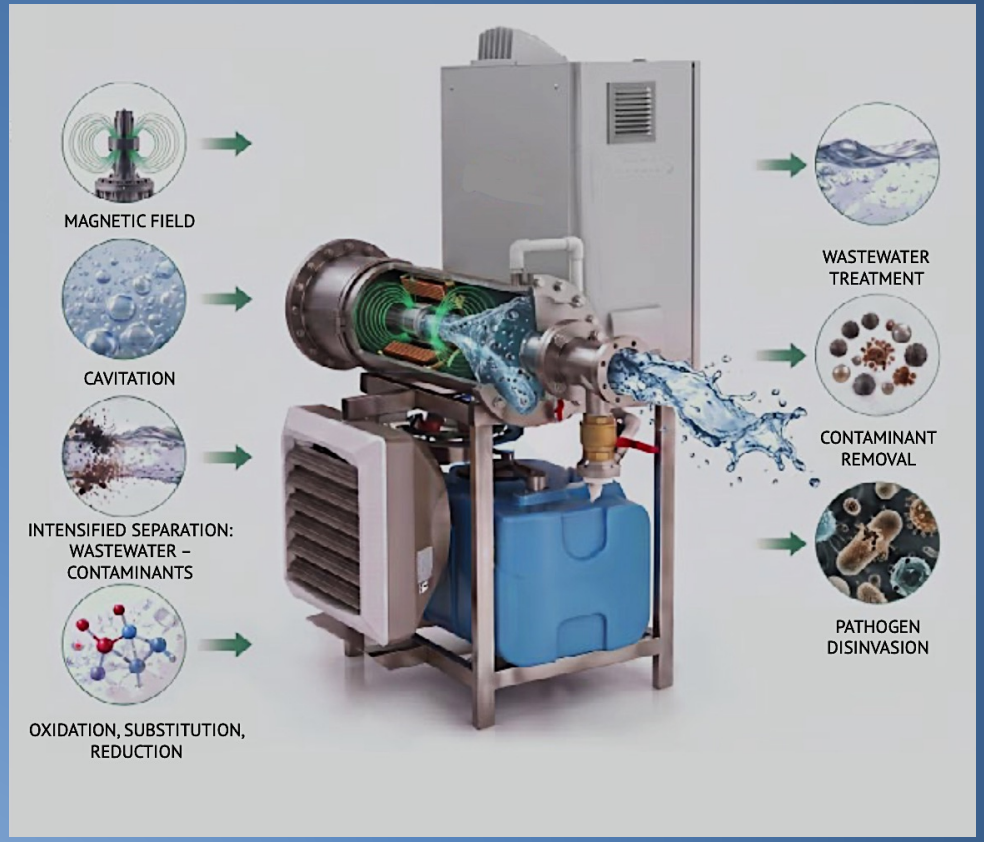
The problem is on your ground

"Every year of neutralisation without desalination is another year the liability grows."

- **Western Basin - the only one of three with uncontrolled decant** - active outflow at 18 Winze since 2002
- **The flow goes to Tweelopies Spruit → Rietspruit** - past the Krugersdorp Game Reserve toward Cradle of Humankind
- **Existing TCTA HDS station (30-35 Ml/day)** - neutralises pH only - sulfates and salts pass through
- **Cooke & Randfontein Surface Operations** - are Sibanye-Stillwater sites; the TCTA neutralisation agreement already involves the group
- **Rainy-season overflows** - spike volumes far beyond station capacity - emergency soda dosing used in past events



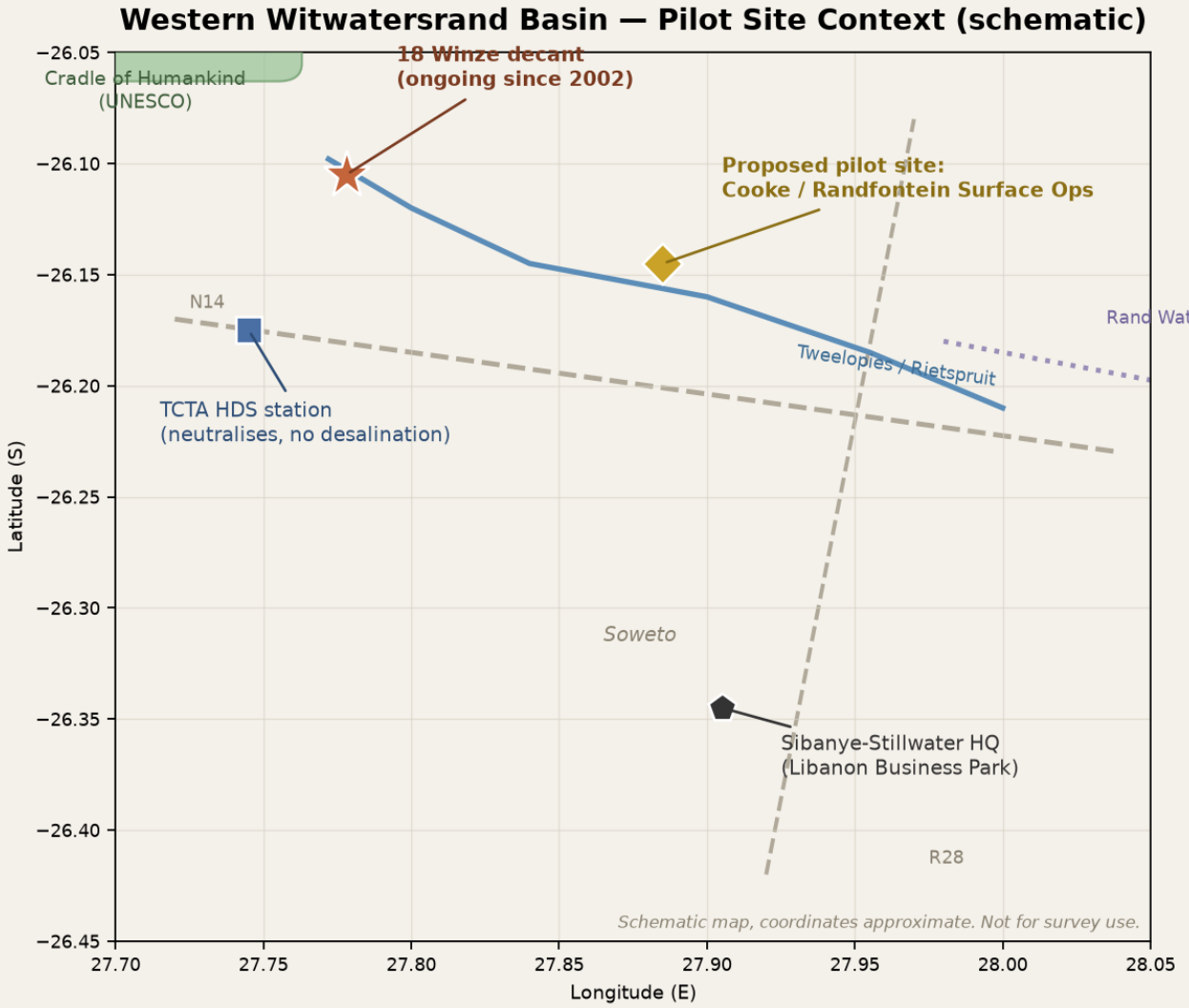
THE STAKES

3444 Ml/day
acid drainage across Witwatersrand basins

R293 m/yr
state cost of neutralisation - no desalination

~40%
water losses in Gauteng networks

Everything is within 15 km



WHY THIS SITE

- **Guaranteed feed** - 30+ Ml/day pumped mine water, year-round
- **Existing infrastructure** - roads, power, HDS station, pipelines
- **Offtake proximity** - Rand Water corridor to Johannesburg
- **Visibility** - success next to UNESCO Cradle of Humankind
- **HQ at 25 km** - Libanon Business Park - site walks same-day



THE SOLUTION

Amanzi ReVive™ - treatment at the decant point

250-500m³/ day

per module; scalable to 10,000+ m³/day

98%

factory readiness - containerised, no civil works

1 reagent

lime only - simple logistics, low stock risk

3-5%

fresh-water make-up in closed loop

Closed recirculation loop: production → ReVODA treatment → return to process. No discharge point at all.

- **Instant start/stop** - no wear, resilient to shock loads
- **Heavy metals precipitated** - out with sludge as hydroxides
- **Pathogen destruction** - full dis-invasion of process water
- **Sludge - hazard class V** - disposable as municipal waste, no special landfill
- **Treated water quality** - exceeds the source water quality
- **Grid + optional solar** - autonomous mode for remote sites

STRATEGIC FIT

Alignment with Sibanye-Stillwater's water strategy

YOUR COMMITMENT	WHAT IT MEANS	WHAT ReVIVE DELIVERS
ICMM Water Stewardship Framework	Sibanye-Stillwater is an ICMM member contributing to the framework	ReVive delivers measurable stewardship at the source of impact
WCWDM commitment	public water conservation and demand-management position	reduces fresh-water abstraction up to 97% via closed loop
Carbon neutrality by 2040	group climate commitment	low-energy process; optional solar-powered configuration
DRDGold / FWGR synergy	tailings retreatment footprint on the West Rand	sludge integrates into existing tailings handling chain
Social licence to operate	decant affects communities around Cooke	visible remediation at the most sensitive location in Gauteng

500 m³/day - 12 months, five stages

1 — Pre-project surveys — Months 1-2

Sampling at 3-5 points; full geochemistry incl. uranium; SANAS lab; DWS alignment

2 — Design & delivery — Months 2-4

Module configured to actual composition; sea logistics; piping

3 — Installation & commissioning — Months 4-5

On-site install, power connection, start-up

4 — Pilot-industrial testing — Months 5-11

Continuous 6-month run; monthly monitoring; DWS reporting

5 — Report & scale-up — Months 11-12

Feasibility report; scaling roadmap; partnership model choice

PILOT FACTS

R14-21.5 m
pilot budget (CAPEX+OPEX)

EPC model
full operating risk on our side

R0
capex for Sibanye-Stillwater

5 months
from MOU to operation



THE DECISIVE TEST

Uranium - we put it first, not last

≤ 0.007 mg/l uranium in treated water

held consistently for 6 months - independently monitored

- **Honest positioning** - uranium is the key regulatory barrier of the Western Basin - NNR and public scrutiny
- **Lab-first approach** - uranium removal tested in stage 1, before installation
- **If needed** - anion-exchange or membrane post-treatment integrated into the ReVive scheme

OUR COMMITMENT

"We consider this the decisive test of the pilot - and we are prepared to publish the results."

Monthly sampling by a SANAS-accredited laboratory; results shared with DWS and NNR in full.

Economics of the 10,000 m³/day plant

BLENDED TARIFF - R28/m³



Structure of the blended tariff (illustrative composition)

- **Fair to the mine** - R28/m³ still beats the sum: Rand Water purchases (R10.8/m³, rising) + discharge charges + fine risk
- **Secure revenue** - constant mine-water flow is drought-proof
- **State alignment** - replaces neutralisation-only spend with real desalination

R87-97 m/yr

revenue @ 85-95% utilisation of 3.65 M m³/yr

R55-70 m/yr

EBITDA (60-70% margin)

18-22%

IRR conservative

22-28%

IRR with ESG premium & state contract

Full model available: 12-year cash flow, sensitivity matrix, partnership schemes (EPC / localisation / SPV).

NEXT STEPS

A 90-day path from MOU to operation

"Liability the region has carried for decades - starting with data, not promises."

Weeks 1-4	Sign MOU; appoint joint working group
Weeks 3-6	Site walk-down at Cooke; primary sampling campaign
Weeks 4-8	Request decant data from TCTA / DWS (flows, composition, peaks)
Weeks 6-10	Commercial proposal - Option A (EPC), fixed pilot budget
Weeks 8-12	Initiate Rand Water offtake dialogue for post-pilot water



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