

 RAND WATER	QUALITY MANAGEMENT SYSTEM SCOPE OF WORK	Form No: SAM DO 00001 T Revision No: 01 Effective Date: August 2019
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**CONSTRUCTION OF THE STOCK PILE AREA AND THE REHABILITATION OF DRYING BEDS
AT PANFONTEIN**

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Table of Contents

1	PROJECT JUSTIFICATION	3
1.1	<i>BACKGROUND INFORMATION.....</i>	3
1.2	<i>PROBLEM STATEMENT.....</i>	3
1.3	<i>OPERATING AND CONTROL PHILOSOPHY.....</i>	3
2	PROPOSED SCOPE OF WORK.....	4
2.1	<i>Civil Scope of Work</i>	4
2.2	<i>Other engineering disciplines</i>	4
3	PROJECT OBJECTIVES.....	5
4	PROJECT CONSTRAINTS	5

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---	--	---

1 PROJECT JUSTIFICATION

1.1 BACKGROUND INFORMATION

Water Treatment Residue (WTR) generated from Rand Water's Zuikerbosch Water Treatment Works and Vereeniging Water Treatment Works is pumped to the Panfontein disposal site which is South East of Vereeniging. Water treatment residue is then thickened and pumped via sprayers onto drying beds for drying and settlement. The supernatant from the thickening process is decanted and returned to Zuikerbosch Pumping Station via the canal.

Panfontein has 90 existing drying beds used for WTR disposal over the site. The depth of the beds varies between 1.5m and 4m.

Currently, it is estimated that all the drying beds at Panfontein will be full by March 2022

1.2 PROBLEM STATEMENT

Panfontein is running out of space to store Water Treatment Residue.

Rand Water has been for a number of years trying to find a beneficial use for its WTR. However, to date none of the planned projects have been implemented. Thus there is no mechanism to remove the WTR and re-use the infrastructure at Panfontein. The current drying beds are almost full.

1.3 OPERATING AND CONTROL PHILOSOPHY

The purpose of this project is in two folds the first one is to construct a stockpile area and remove WTR from drying beds identified by the Engineer to the stockpile area; the second one is to remove WTR from drying beds and place it on a sacrificial bed or the stockpile are depending on the sequence of work. During operation beds are not compacted and the available space not fully utilized. This emptied bed will create much needed space for new WTR while fully utilizing the space on the sacrificial bed.

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2 PROPOSED SCOPE OF WORK

2.1 Civil Scope of Work

Construction of the Stockpile area

The following activities are to be undertaken during construction:

- Construction of the stock pile area as per the design
- Removal of WTR residue to the stock pile area
- Repair to all damaged roads, drying bed wall and decanting towers
- Closure of stockpile area
- Prepare a methodology for removal of WTR

Rehabilitation of drying bed

The following activities are to be undertaken during construction:

- Site establishment
- Identify and mark the existing services e.g. pipeline work, chambers and WTR spray infrastructure
- Refurbish/replace all secondary WTR reticulation network and its respective sprayers, if necessary, to be determined by the Engineer's representative on site..
- Clear and dispose of all vegetation within the identified drying beds
- Excavate sludge, ready to be hauled away from the affected drying beds
- Refurbish drying beds walls as identified by Contractor and approved by resident Engineer, if necessary, to be determined by the Engineer's representative on site..
- Reinstatement of access roads between beds, if necessary, to be determined by the Engineer's representative on site.
- Reinstatement of decanting towers, including installation of decanting slates and access bridge, if necessary, to be determined by the Engineer's representative on site.
- Load of haul of sludge to designated areas within the Panfontein Sludge Disposal Site
- General levelling of all spoiled sites
- Site de-establishment

2.2 Other Engineering Disciplines

The scope is purely Civil

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3 PROJECT OBJECTIVES

The objective of the project is to remove dry WTR treatment residue from the drying beds and store it on sacrificial beds at Panfontein. This will create much needed space for new wet WTR produced from Zuikebosch and Vereeniging treatment plants.

4 PROJECT CONSTRAINTS

The project is to be constructed within the Panfontein site. The construction will have to be done such that it causes no disruption to the operations at Panfontein.