

GOAL
48 HOUR BOREHOLE CAPACITY TESTS REPORT

**WATER POINTS: Kuwadzana 1 BH, Kuwadzana 1
Home Industry, kuwadzana 7 UBC, Kuwadzana
Extension Chinyanya Car Park, PWD
Highfields and Chipembere Roundabout Highfields**

Capacity test report for Harare (Kuwadzana and Highfield)

The capacity tests were done in conformity with the Zimbabwe Standard Specification For Development and Management Of Ground Water Resources, Part 4: Pumping Tests Of Water Well/Boreholes(ZWS 678:678:Part 4:2013. ICS 13.060.10-ISBN978-1-77935-603-1)

The borehole yield tests was done at the water point mentioned above.

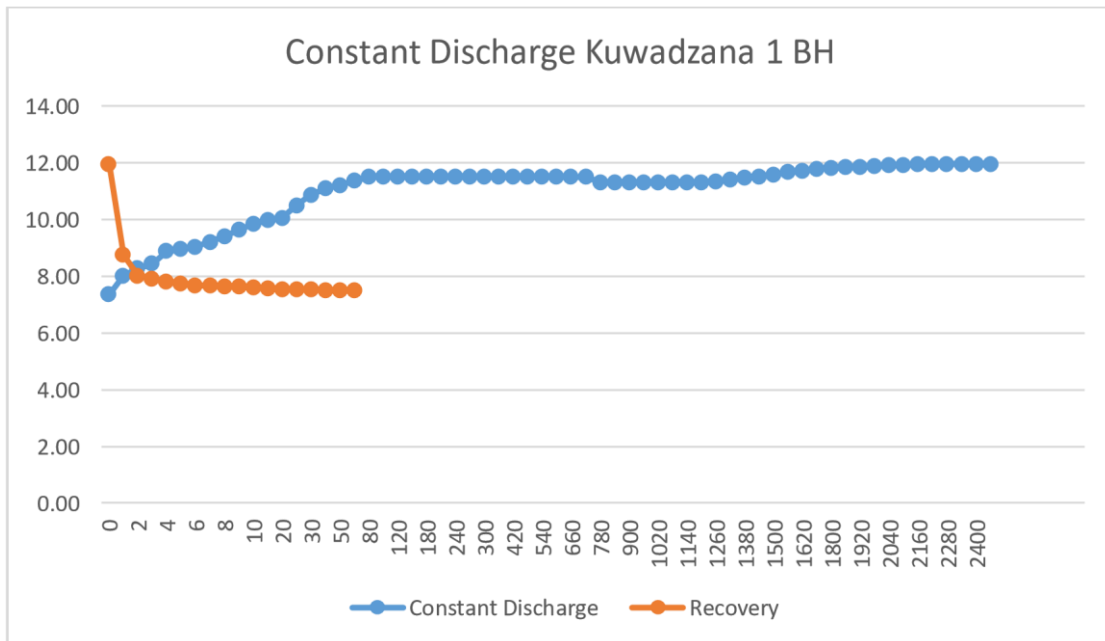
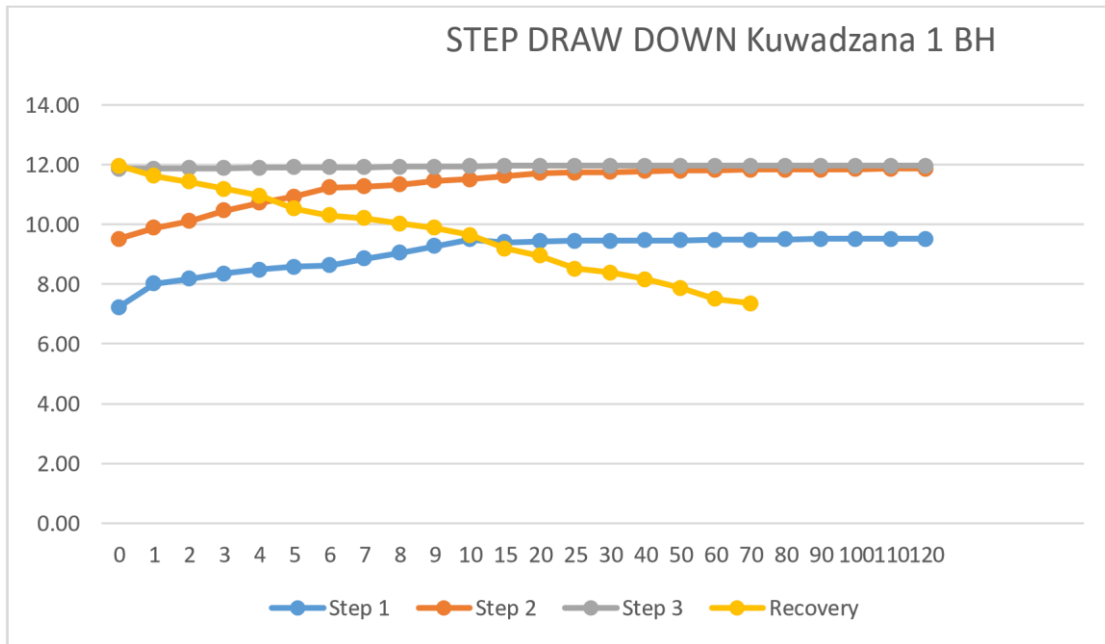
Yield test were done for forty eight hours. The yield tests were done considering the duty period of the pump that are to be installed in that borehole to serve the intended use of the piped water scheme. Water levels were recorded at specific time together with the pump discharge for the duration of the test, Water levels were recorded from the start of the test until the pump was stopped at the end of the test. The first six hours was 3 stage draw down test with each stage 120 minutes long. The recovery of the water levels were recorded for one hour and followed by a continuous 41 hours constant discharge pumping The attached tabulated results consist of the recovery tests and the constant discharge tests which were both be used to calculate the yield for the water point.

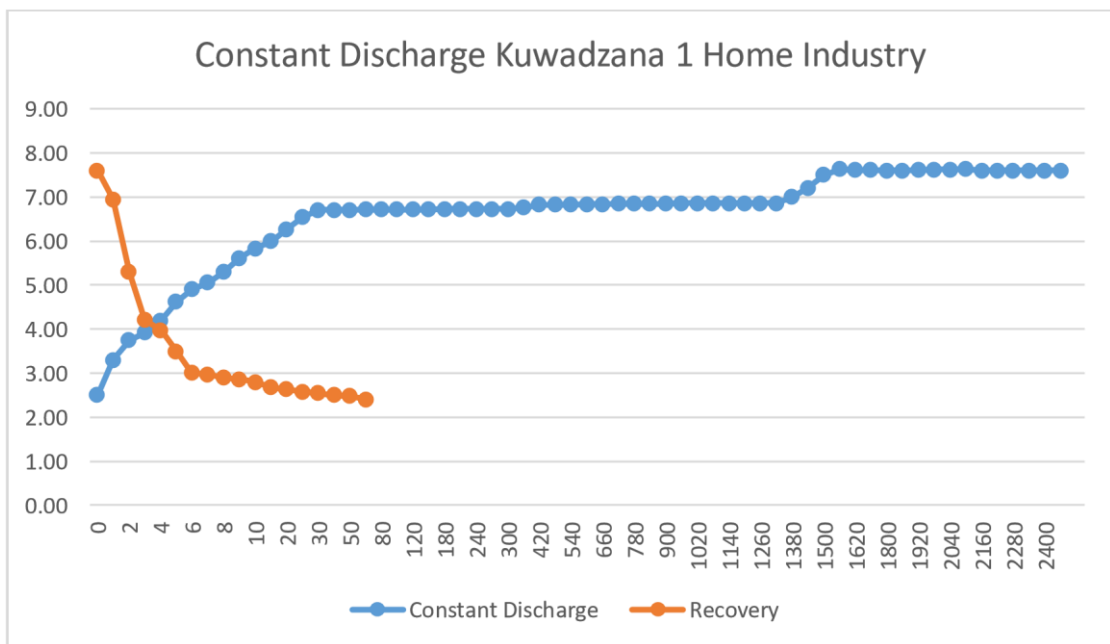
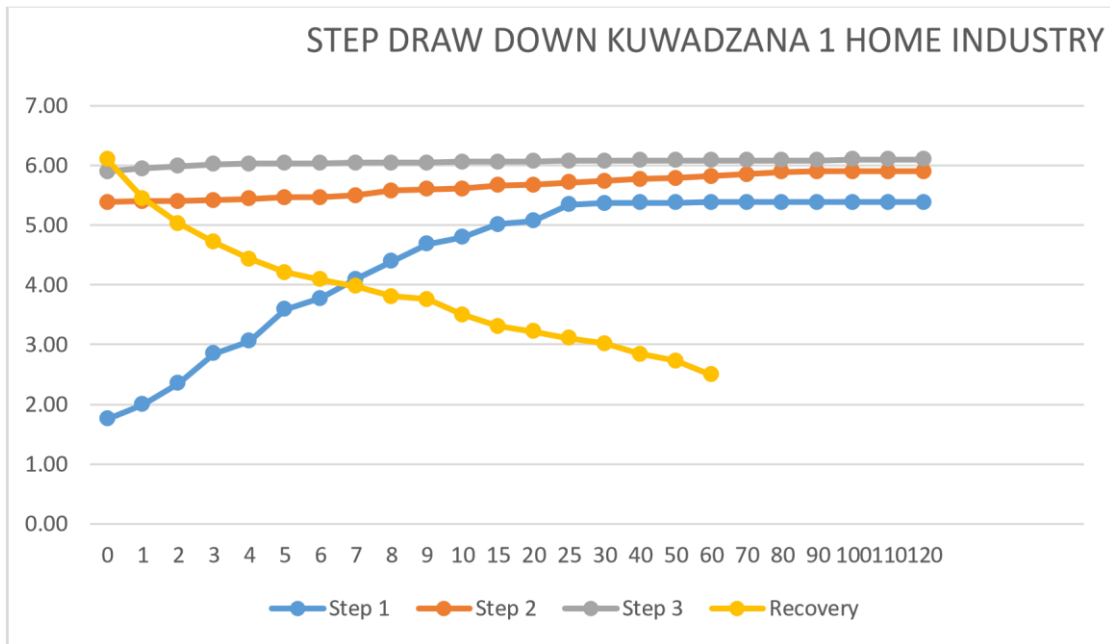
The pump testing activity started with a 6hour stepped draw down test then a 1 hour recovery which was then followed by a continuous 41hours.

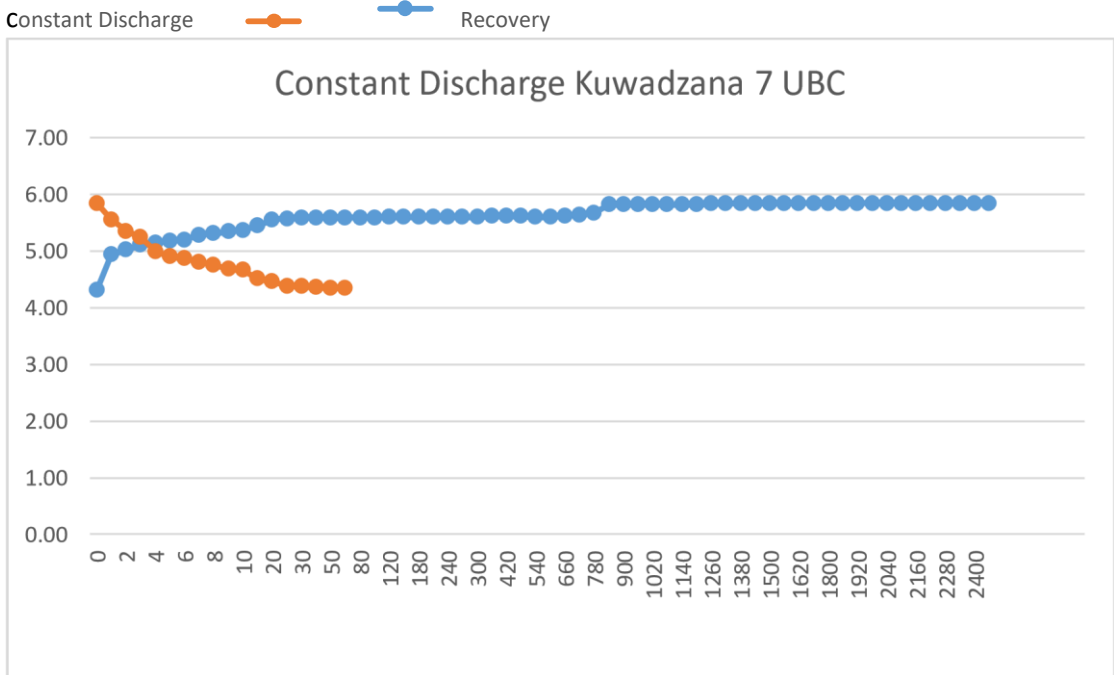
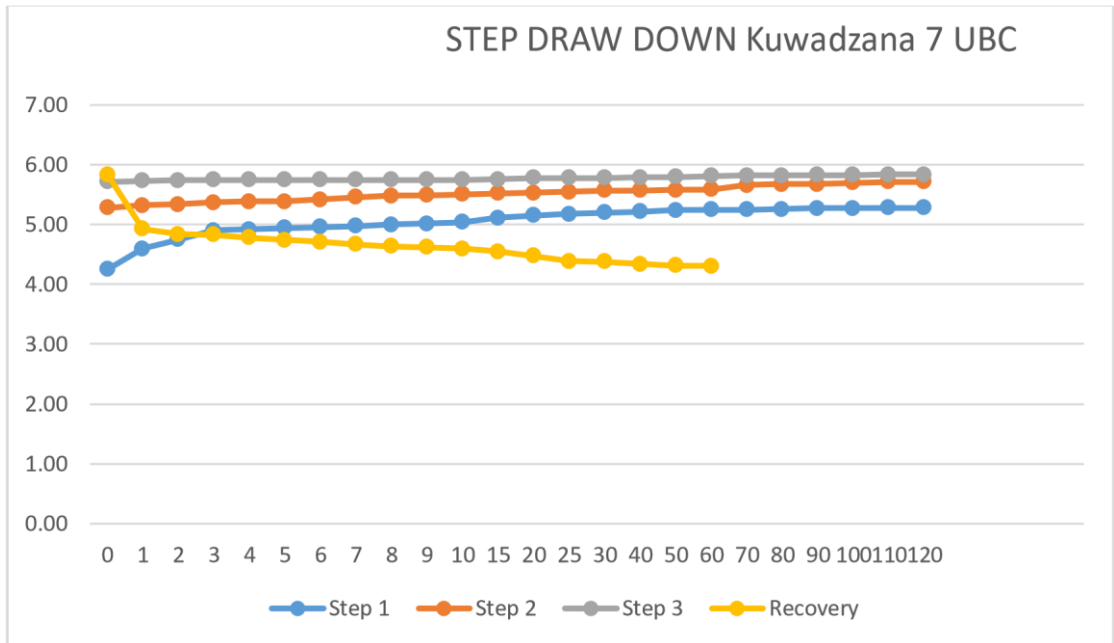
Since the chosen water point is meant for a motorized piped water scheme, the major task was to monitor water levels within the pumped borehole and also monitor the rate at which the boreholes were recovering on the one hour recovery phase as noted on the attached excel sheet. The test period was timed at exactly forty eight hours using a stop watch and it was monitored until it reached the steady flow where the borehole water level remains almost constant which is indicated on the tables attached.

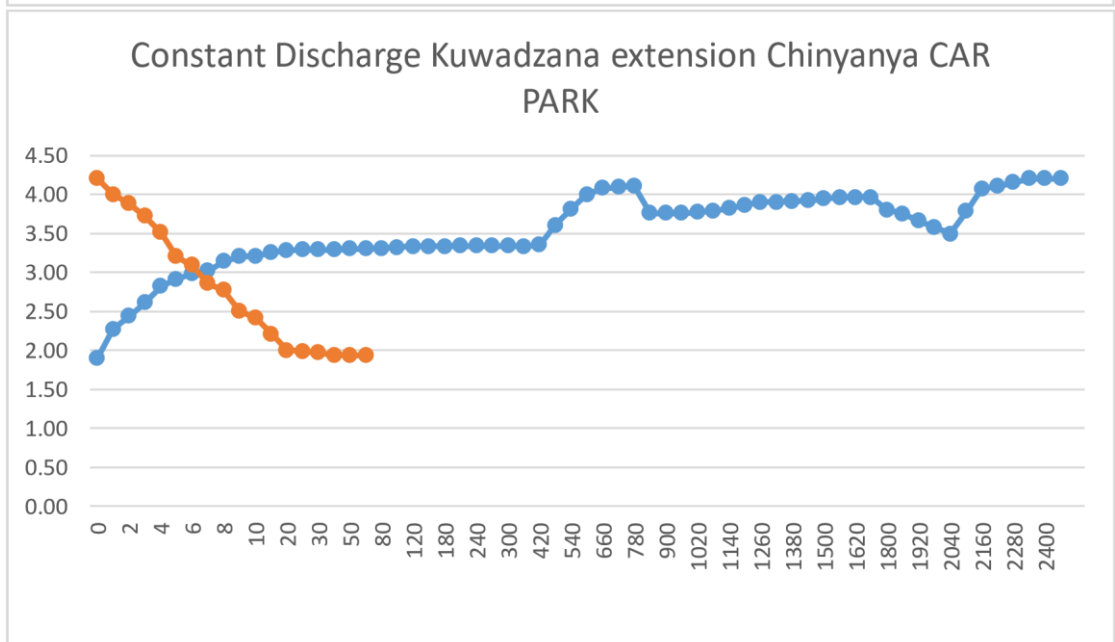
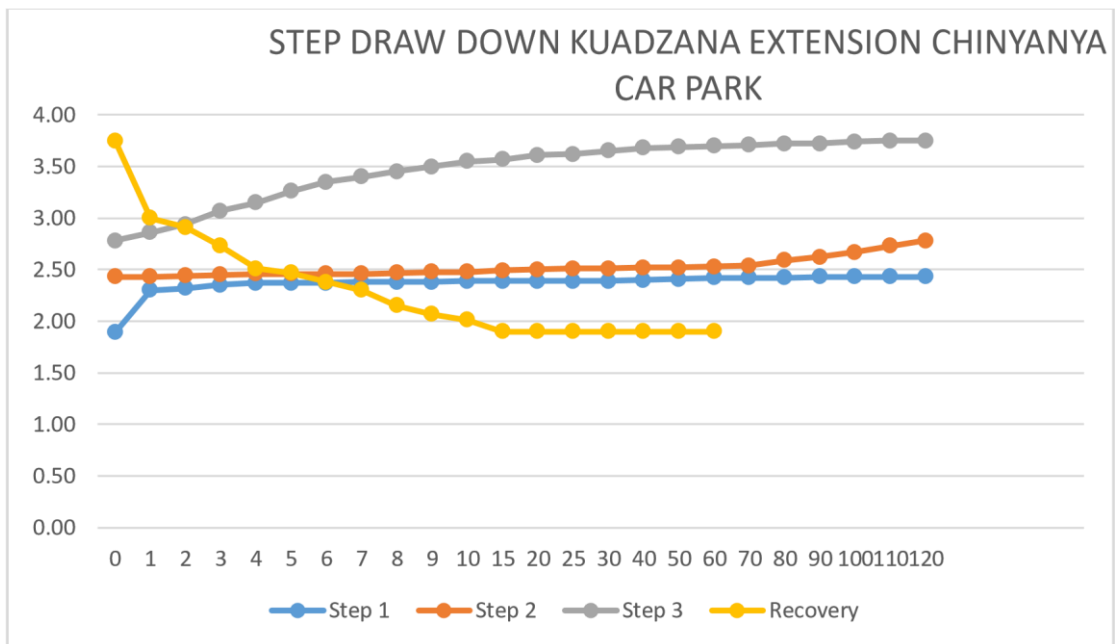
Equipment Used

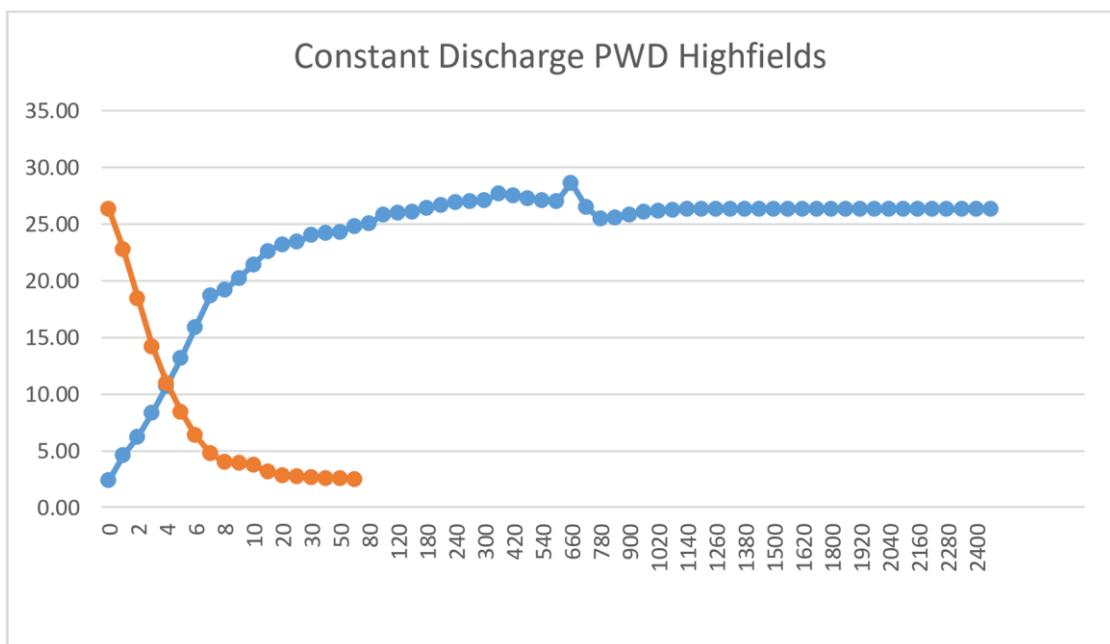
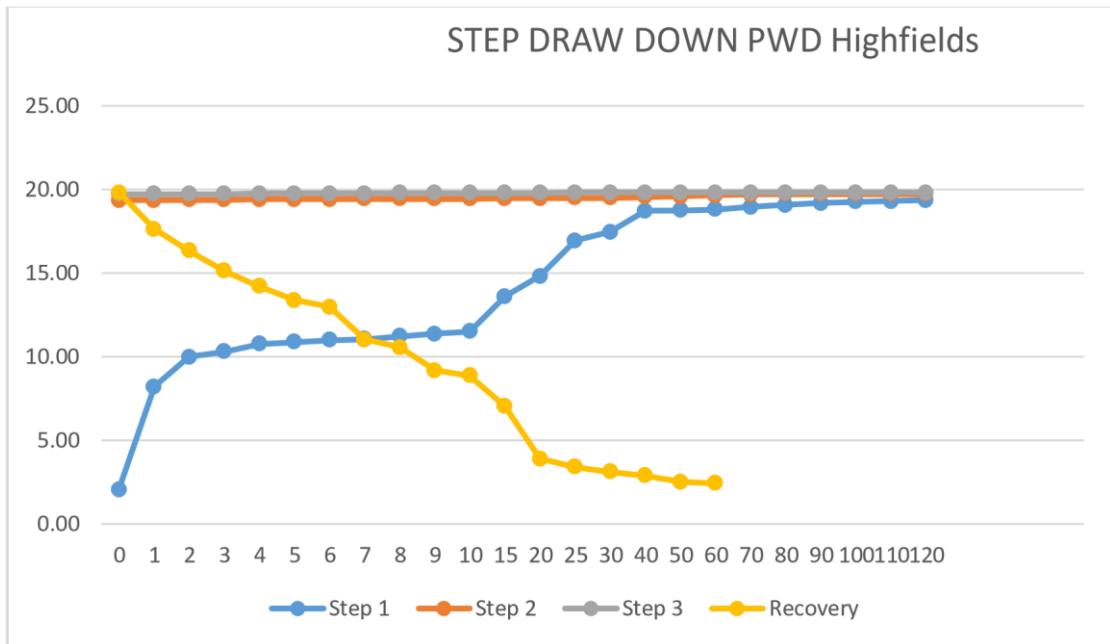
- 1) 2HP franklin pump set x2 (one standby)
- 2) 1HP forge pump
- 3) Deeper/Hydrometer
- 4) 230kw Nexus generator x2
- 5) 20ltr graduated container

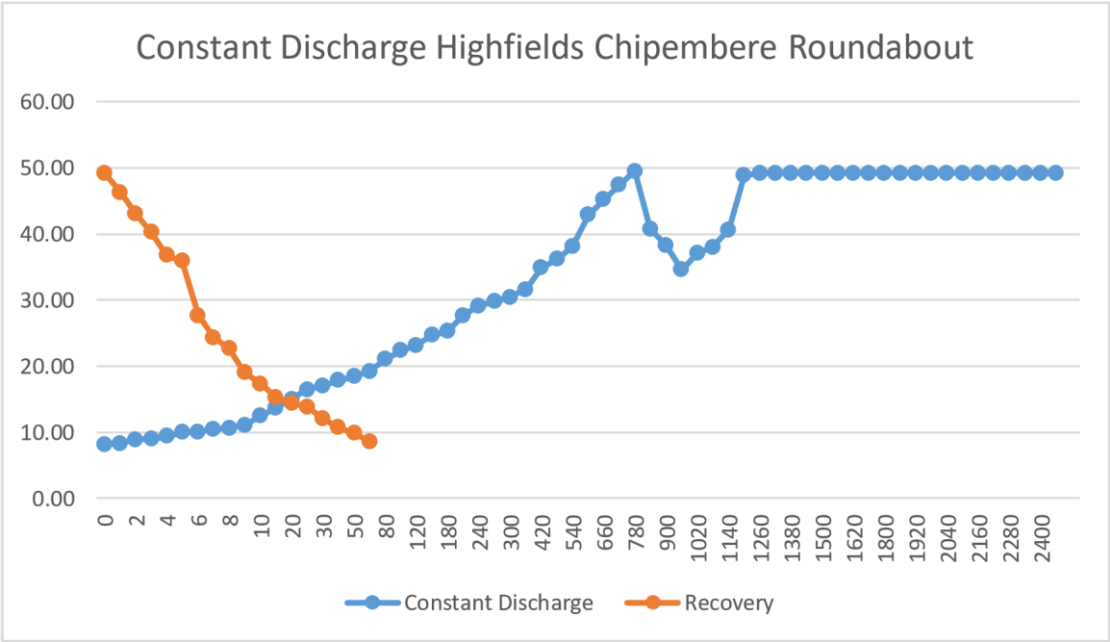
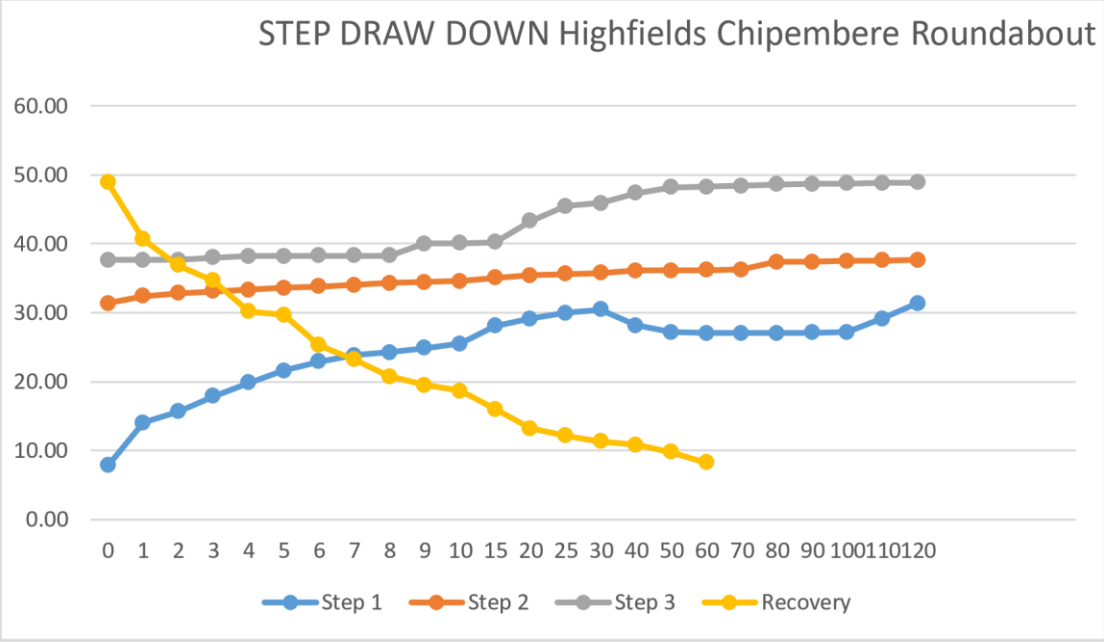












WATER POINT	Kuwadzana 1 BH	Kuwadzana 1 home Industry	Kuwadzana Ext Chinyanya Car Park	Kuwadzana 7 UBC
DEPTH	38m	40m	51m	40m
YIELD (l/s)	1.6	1.6	1.7	1.54
SWL	7.23m	1.76	1.89m	4.25
PUMP INSTALATION DEPTH	36m	37m	48m	37
ADD	28.77m	35.24m	46.11m	32.75m
TDD	11.95m	7.60m	4.2m	5.84m
%ADD REACHED	41.5	21.6	9.1	17.8
LENGTH OF PUMP TEST	2460mins	2460mins	2460mins	2460mins
LENGTH OF RECOVERY	60mins	60mins	60mins	60mins

WATER POINT	PWD Highfields	Chipembere Roundabout Highfields
DEPTH	60m	65m
YIELD (l/s)	1.6	1.66
SWL	2.05	7.81
PUMP INSTALATION DEPTH	57m	62m
ADD	54.95m	54.19m
TDD	26.29m	8.60m
%ADD REACHED	47.8	15.9

LENGTH OF PUMP TEST	2460mins	2460mins
LENGTH OF RECOVERY	60mins	60mins

Sustainable Yield

WATER POINT	Kuwadzana 1 BH	Kuwadzana 1 home Industry	Kuwadzana 7 UBC
Rec. Pump installation Depth (m)	36	37	37
Rec. Daily Pump Cycle (hrs.)	10	10	10
Yield of the Borehole m3 /hr.	5.76	5.76	5.54
Rec. pumping Rate (m3/hr.) (80% of the Yield)	4.61	4.61	4.43
rec. pumping Rate (l/s)(80 % of the yield of the borehole)	1.28	1.28	1.23
rec. pumping Rate (m3/day)(80% of the yield of the Borehole)	46.1	46.1	44.3

Sustainable Yield

WATER POINT	Kuwadzana Extension Chinyanya Car Park	PWD Highfields	Chipembere Roundabout Highfields
Rec. Pump installation Depth (m)	48	57	37
Rec. Daily Pump Cycle (hrs.)	10	10	10
Yield of the Borehole m3 /hr.	6.12	5.76	6.0
Rec. pumping Rate (m3/hr.) (80% of the Yield)	4.90	4.61	4.80
rec. pumping Rate (l/s)(80 % of the yield of the borehole)	1.36	1.28	1.33
rec. pumping Rate (m3/day)(80% of the yield of the Borehole)	49.0	46.1	48.0