



The Petroleum Oil and Gas Corporation of South Africa SOC Ltd
 Reg. No. 1970/008130/07
 151 Frans Conradie Road,
 Parow, 7500
 Private Bag X 5 Parow, 7499,
 Republic of South Africa
 Tel +27 21 929 3000
 Fax +27 21 929 3266

TENDER BULLETIN NO. 1

CTT0000026638 – CHEMICAL TREATMENT OF THE UTILITY COOLING WATER SYSTEM, FIRE WATER SYSTEM, AND DECOMMISSIONING OF THE MAIN & AIR SEPARATION COOLING WATER SYSTEMS FOR PetroSA – MOSSEL BAY GTL REFINERY.

General Questions/ Clarifications / Notes																																
1	<p>Question</p> <ul style="list-style-type: none"> Can you kindly supply us with the system volumes data? <p>Answer</p> <p><i>Air Separation Cooling – Open Evaporative</i></p> <p><i>Plant Data: Design</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td>No. of units</td> <td style="text-align: center;">1</td> <td>Unit/s</td> </tr> <tr> <td>Hours of operation</td> <td style="text-align: center;">24</td> <td>Hrs/day</td> </tr> <tr> <td>Days of operation</td> <td style="text-align: center;">7</td> <td>Days/week</td> </tr> <tr> <td>System volume</td> <td style="text-align: center;">1600.00</td> <td>m³</td> </tr> <tr> <td>Basin volume</td> <td style="text-align: center;">976</td> <td>m³</td> </tr> <tr> <td>Recirculation rate</td> <td style="text-align: center;">6126.00</td> <td>m³/hr</td> </tr> <tr> <td>Temperature differential</td> <td style="text-align: center;">10</td> <td>°C</td> </tr> <tr> <td>Cycles of concentration</td> <td style="text-align: center;">7</td> <td>Times</td> </tr> <tr> <td>Windage factor</td> <td style="text-align: center;">0.05</td> <td>m³/hr</td> </tr> <tr> <td>Load factor</td> <td style="text-align: center;">81</td> <td>%</td> </tr> </tbody> </table>		No. of units	1	Unit/s	Hours of operation	24	Hrs/day	Days of operation	7	Days/week	System volume	1600.00	m ³	Basin volume	976	m ³	Recirculation rate	6126.00	m ³ /hr	Temperature differential	10	°C	Cycles of concentration	7	Times	Windage factor	0.05	m ³ /hr	Load factor	81	%
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	Calculations at 100% load	Calculations at 81% load
Evaporation	110.27 m ³ /hr	89.32 m ³ /hr
Total bleed-off	9.19 m ³ /hr	7.44 m ³ /hr
Actual bleed-off	6.13 m ³ /hr	4.96 m ³ /hr
Windage	3.06 m ³ /hr	2.48 m ³ /hr
Retention time	13.39 hrs	16.54 hrs
Half – life/HTI	120.67 hrs	148.97 hrs
Make-up total	119.46 m ³ /hr	96.76 m ³ /hr
Make-up total	610425.27 m ³ /month	494444.47 m ³ /month

Main Cooling – Open Evaporative

Plant data: Design

No. of units	1	Unit/s
Hours of operation	24	Hrs/day
Days of operation	7	Days/week
System volume	7350.00	m ³
Basin Volume	1473	m ³
Recirculation rate	23939.00	m ³ /hr
Temperature differential	8	°C
Cycles of concentration	7	Times



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Windage factor	0.05	m ³ /hr
Load factor	73	%

	Calculations at 100% load	Calculations at 73 % load
Evaporation	344.72 m ³ /hr	251.65 m ³ /hr
Total bleed-off	57.45 m ³ /hr	41.94 m ³ /hr
Actual bleed-off	45.48 m ³ /hr	33.20 m ³ /hr
Windage	11.97 m ³ /hr	8.74 m ³ /hr
Retention time	18.28 hrs	25.04 hrs
Half – life/HTI	88.66 hrs	121.45 hrs
Make-up total	402.18 m ³ /hr	293.59 m ³ /hr
Make-up total	2055115.27 m ³ /month	1500234.15 m ³ /month

Utilities Cooling – Open evaporative

Plant data: Design

No. of units	1	Unit/s
Hours of operation	24	Hrs/day
Days of operation	7	Days/week
System volume	3900.00	m ³



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Basin Volume	1050	m ³
Recirculation rate	17180.00	m ³ /hr
Temperature differential	8	°C
Cycles of concentration	7	Times
Windage factor	0.05	m ³ /hr
Load factor	73	%
	Calculations at 100% load	Calculations at 73% load
Evaporation	247.39 m ³ /hr	180.60 m ³ /hr
Total bleed-off	41.23 m ³ /hr	30.10 m ³ /hr
Actual bleed-off	32.64 m ³ /hr	23.83m ³ /hr
Windage	8.59m ³ /hr	6.27m ³ /hr
Retention time	13.51 hrs	18.51 hrs
Half – life/HTI	65.55 hrs	89.79 hrs



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	Make-up total	288.62 m ³ /hr	210.70 m ³ /hr
	Make-up total	1474868.64 m ³ /month	1076654.11 m ³ /month