

Appendix 5.11d

Operation Phase Water Quality Contour Plots

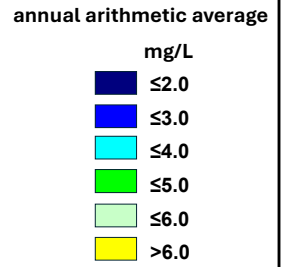
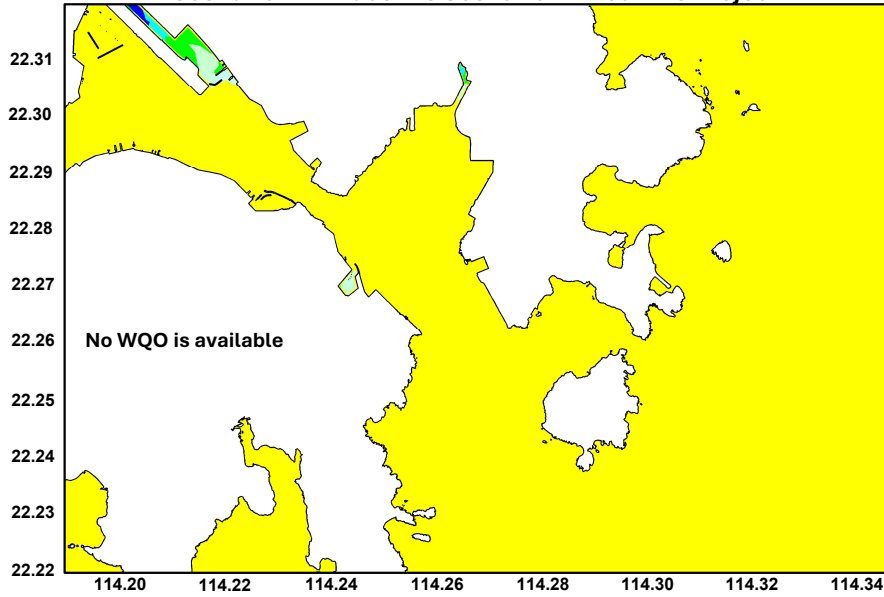
Appendix 5.11d Contour Plots for Water Quality Modelling

Scenario	Description	Page & Location	
B1 - Baseline	Annual Mean Depth-Averaged Dissolved Oxygen Concentration	3	Upper
B2 - Operation	Annual Mean Depth-Averaged Dissolved Oxygen Concentration	3	Middle
B3 - Emergency	Annual Mean Depth-Averaged Dissolved Oxygen Concentration	3	Bottom
B1 - Baseline	10 th Percentile Bottom Dissolved Oxygen Concentration	4	Upper
B2 - Operation	10 th Percentile Bottom Dissolved Oxygen Concentration	4	Middle
B3 - Emergency	10 th Percentile Bottom Dissolved Oxygen Concentration	4	Bottom
B1 - Baseline	10 th Percentile Depth-Averaged Dissolved Oxygen Concentration	5	Upper
B2 - Operation	10 th Percentile Depth-Averaged Dissolved Oxygen Concentration	5	Middle
B3 - Emergency	10 th Percentile Depth-Averaged Dissolved Oxygen Concentration	5	Bottom
B1 - Baseline	Annual Mean Depth-Averaged Total Inorganic Nitrogen Concentration	6	Upper
B2 - Operation	Annual Mean Depth-Averaged Total Inorganic Nitrogen Concentration	6	Middle
B3 - Emergency	Annual Mean Depth-Averaged Total Inorganic Nitrogen Concentration	6	Bottom
B1 - Baseline	Annual Mean Depth-Averaged Unionized Ammonia Concentration	7	Upper
B2 - Operation	Annual Mean Depth-Averaged Unionized Ammonia Concentration	7	Middle
B3 - Emergency	Annual Mean Depth-Averaged Unionized Ammonia Concentration	7	Bottom
B1 - Baseline	Annual Geometric Mean Depth-averaged <i>E.coli</i> Concentration	8	Upper
B2 - Operation	Annual Geometric Mean Depth-averaged <i>E.coli</i> Concentration	8	Middle
B3 - Emergency	Annual Geometric Mean Depth-averaged <i>E.coli</i> Concentration	8	Bottom
B1 - Baseline	Annual Mean Depth-averaged Suspended Solids Concentration	9	Upper
B2 - Operation	Annual Mean Depth-averaged Suspended Solids Concentration	9	Middle
B3 - Emergency	Annual Mean Depth-averaged Suspended Solids Concentration	9	Bottom
B1 - Baseline	Annual Mean Depth-averaged 5-day Biochemical Oxygen Demand Concentration	10	Upper
B2 - Operation	Annual Mean Depth-averaged 5-day Biochemical Oxygen Demand Concentration	10	Middle
B3 - Emergency	Annual Mean Depth-averaged 5-day Biochemical Oxygen Demand Concentration	10	Bottom
B1 - Baseline	Annual Mean Sedimentation Rate	11	Upper
B2 - Operation	Annual Mean Sedimentation Rate	11	Middle
B3 - Emergency	Annual Mean Sedimentation Rate	11	Bottom
B1 - Baseline	Annual Maximum Sedimentation Rate	12	Upper
B2 - Operation	Annual Maximum Sedimentation Rate	12	Middle
B3 - Emergency	Annual Maximum Sedimentation Rate	12	Bottom

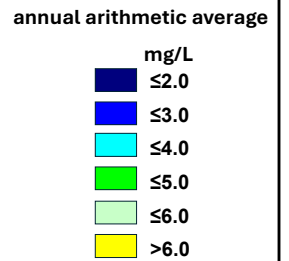
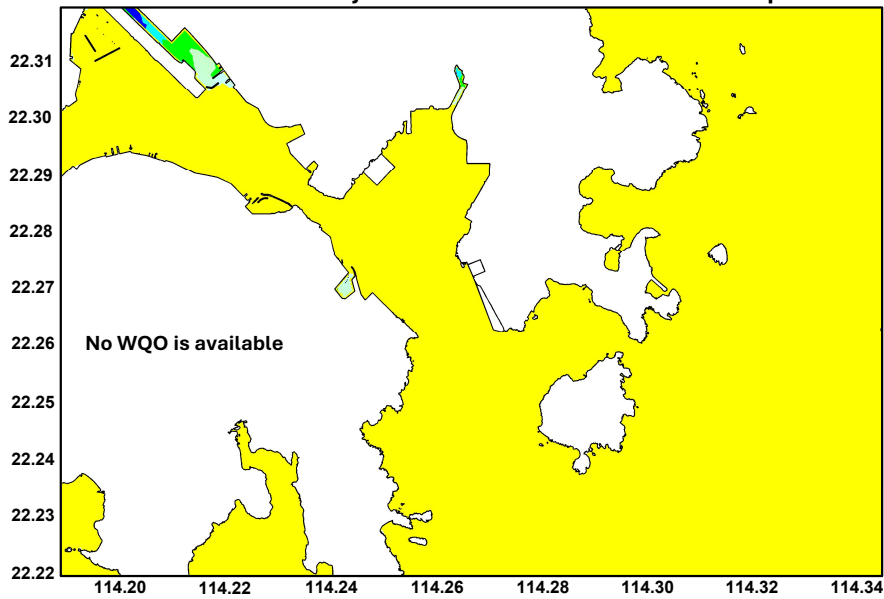
Appendix 5.11d Contour Plots for Water Quality Modelling

Scenario	Description	Page & Location	
B1 - Baseline	Annual Mean Depth-Averaged Salinity	13	Upper
B2 - Operation	Annual Mean Depth-Averaged Salinity	13	Middle
B3 - Emergency	Annual Mean Depth-Averaged Salinity	13	Bottom

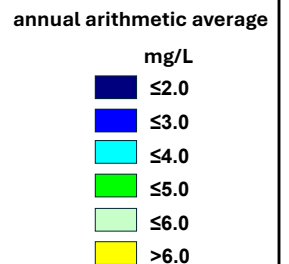
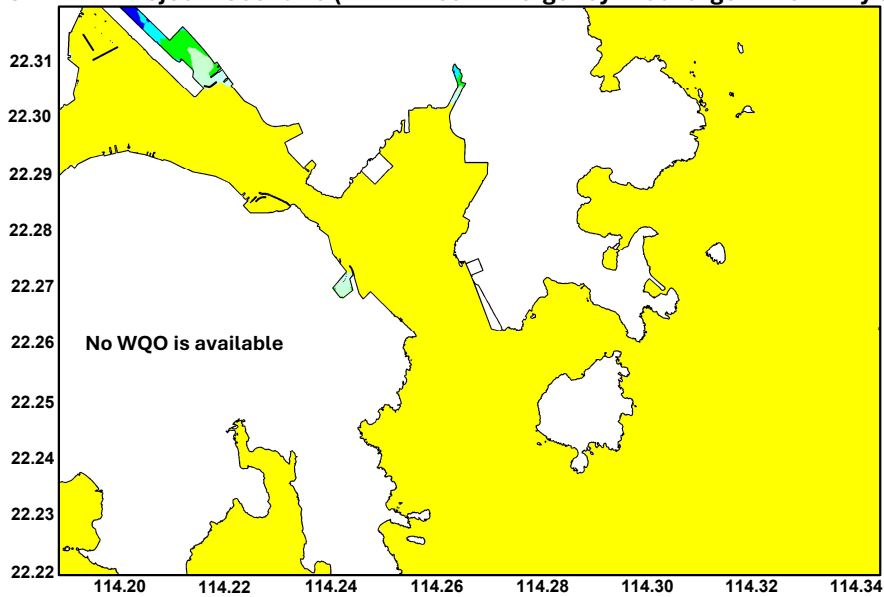
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

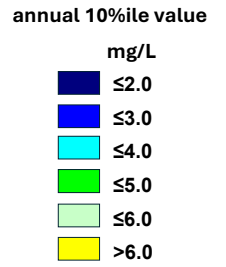
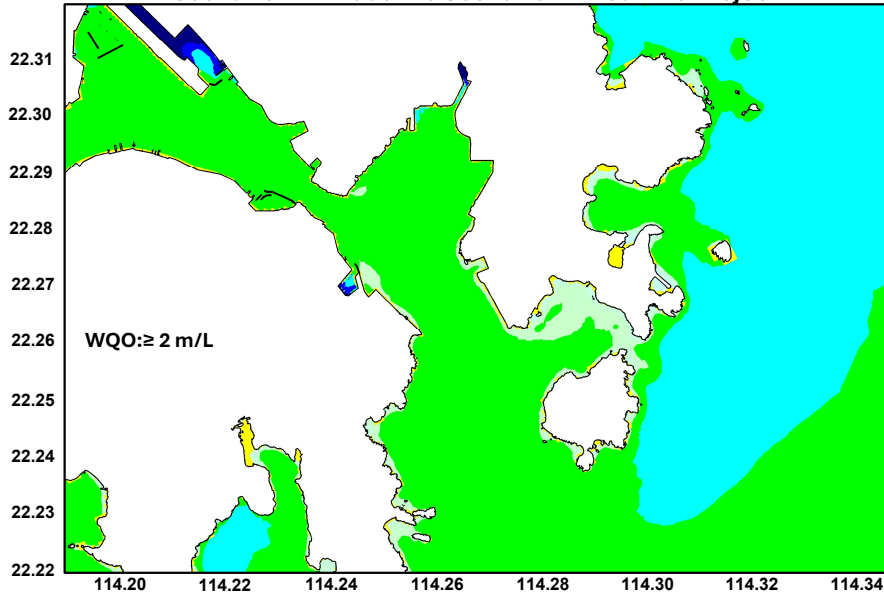


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

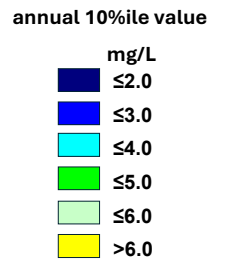
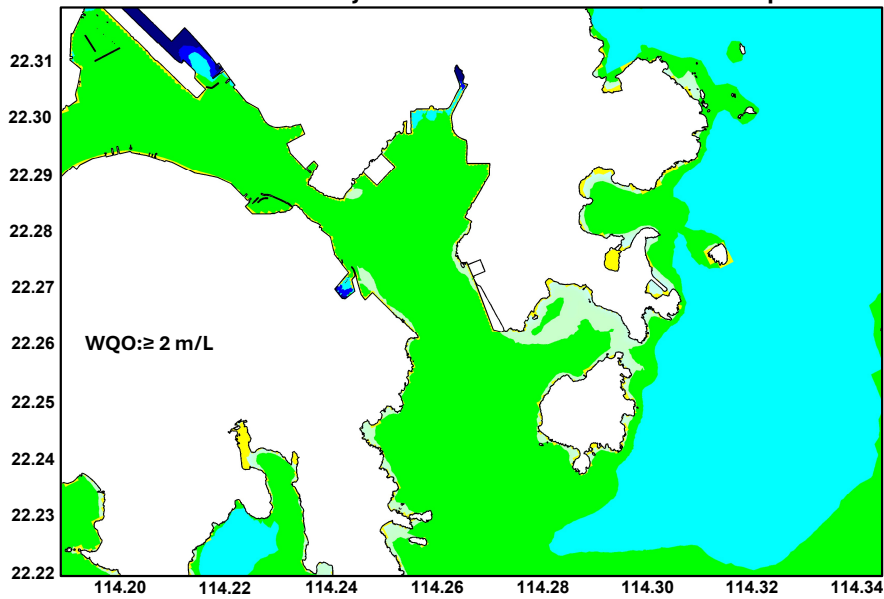


Annual Mean Depth-Averaged Dissolved Oxygen Concentration		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		CE 40/2023 (CE)
Binnies	Appendix 5.11d	3

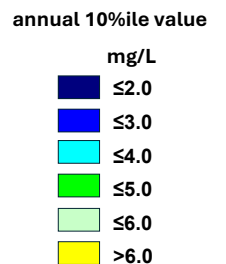
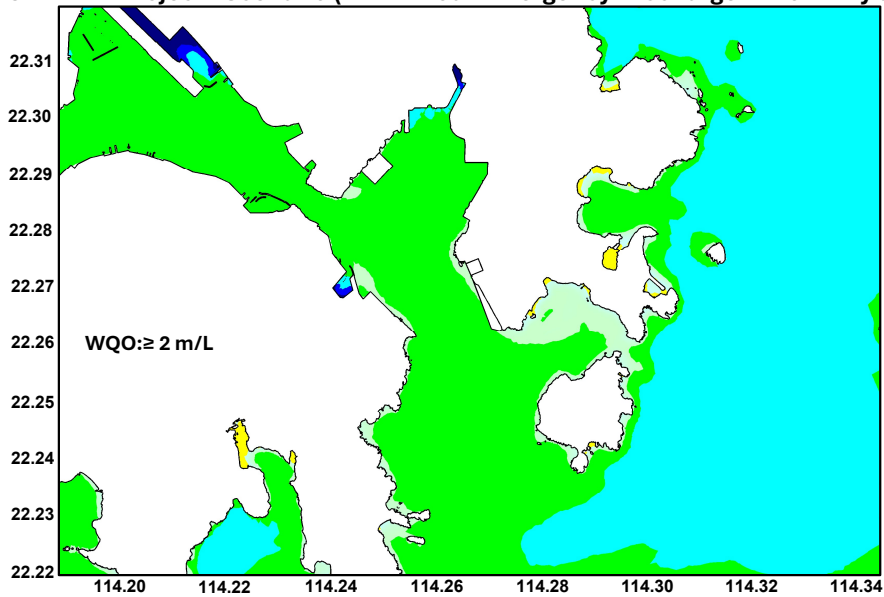
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

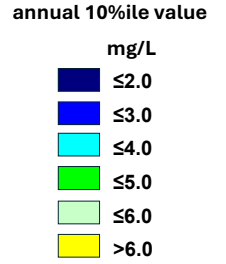
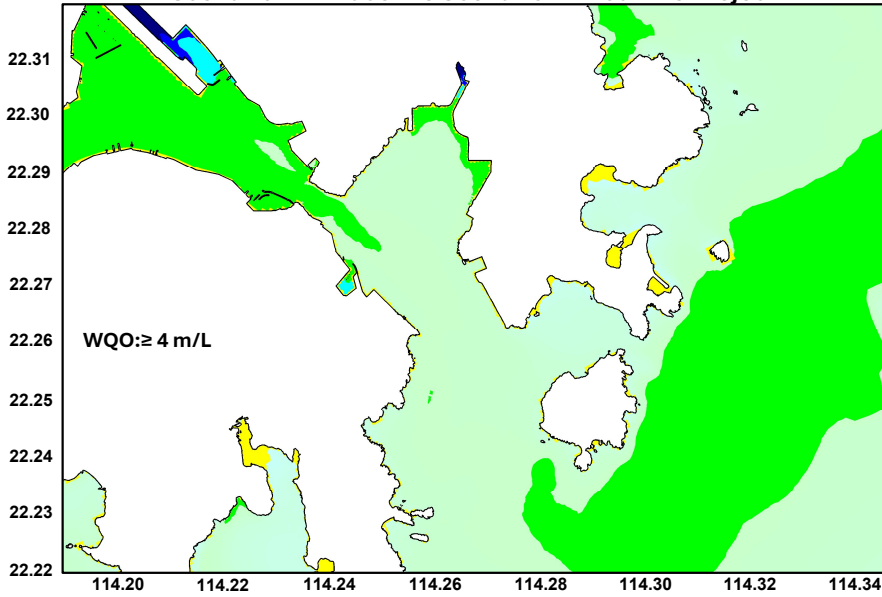


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

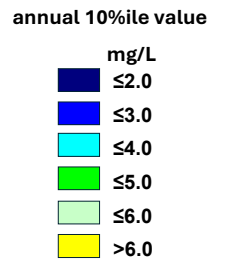
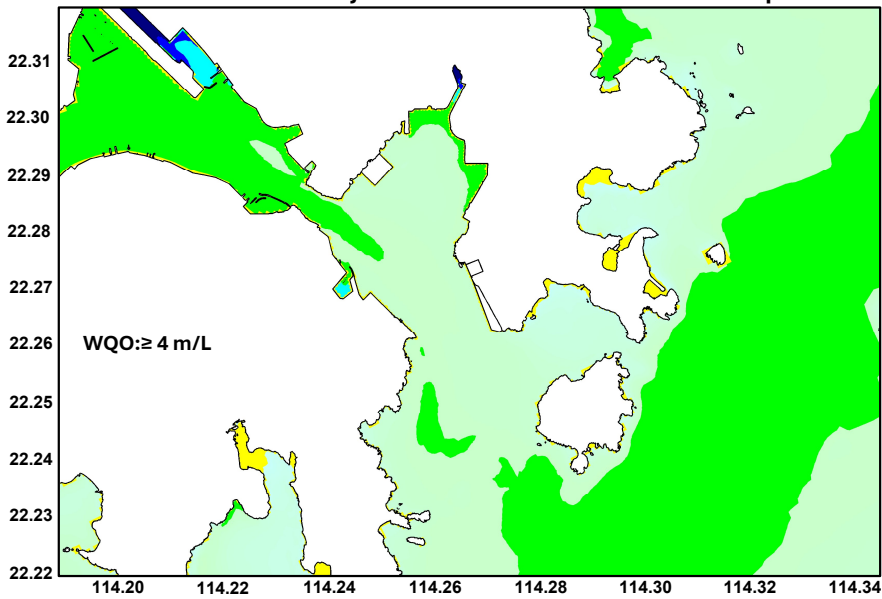


10th Percentile Bottom Dissolved Oxygen Concentration Top: Baseline Scenario Middle: “With Project” Scenario Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		
	CE 40/2023 (CE)	
Binnies	Appendix 5.11d	4

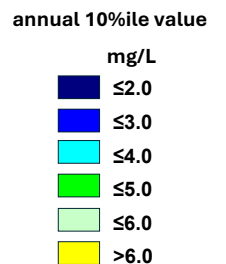
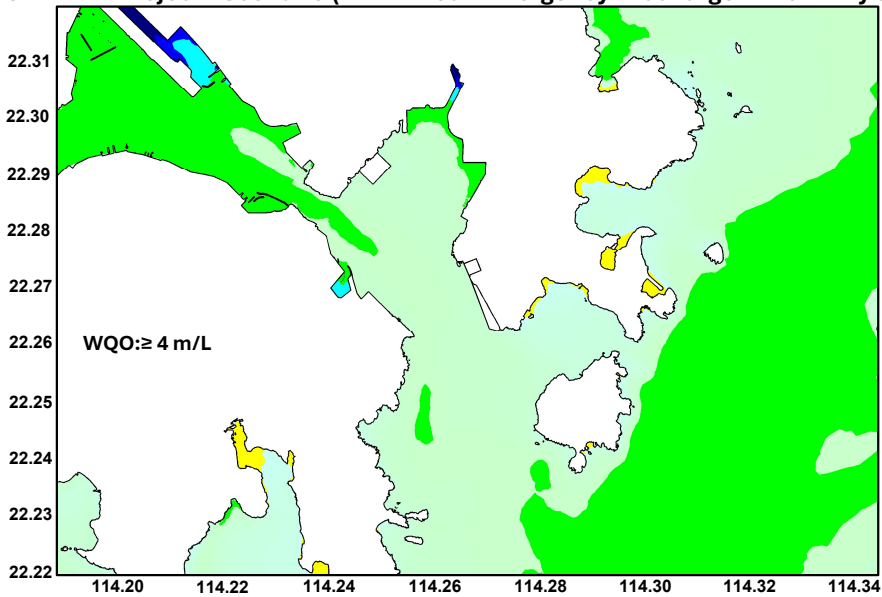
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

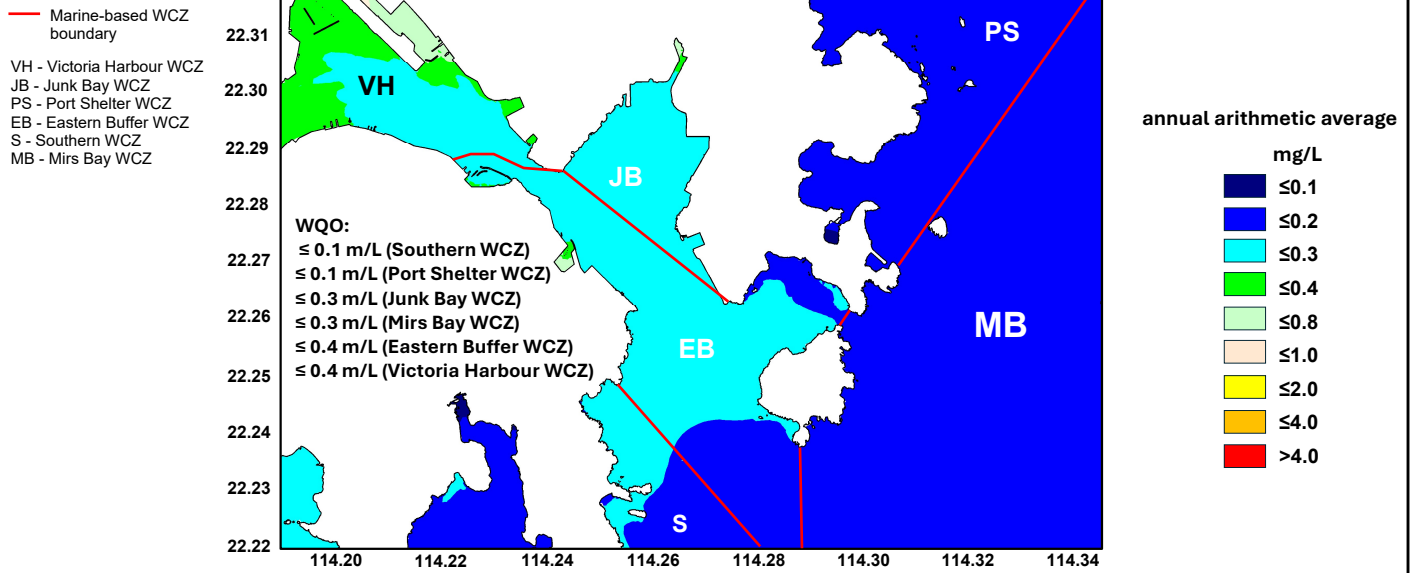


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

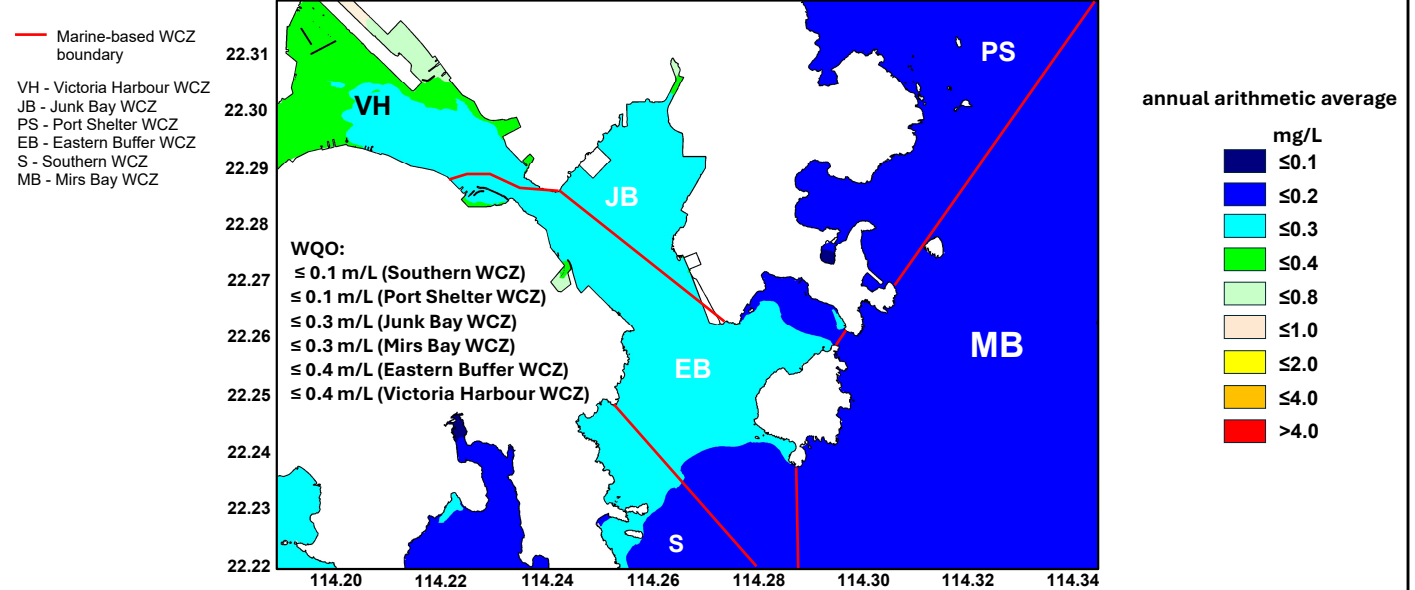


10 th Percentile Depth-Averaged Dissolved Oxygen Concentration Top: Baseline Scenario Middle: “With Project” Scenario Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		
	CE 40/2023 (CE)	
Binnies	Appendix 5.11d	5

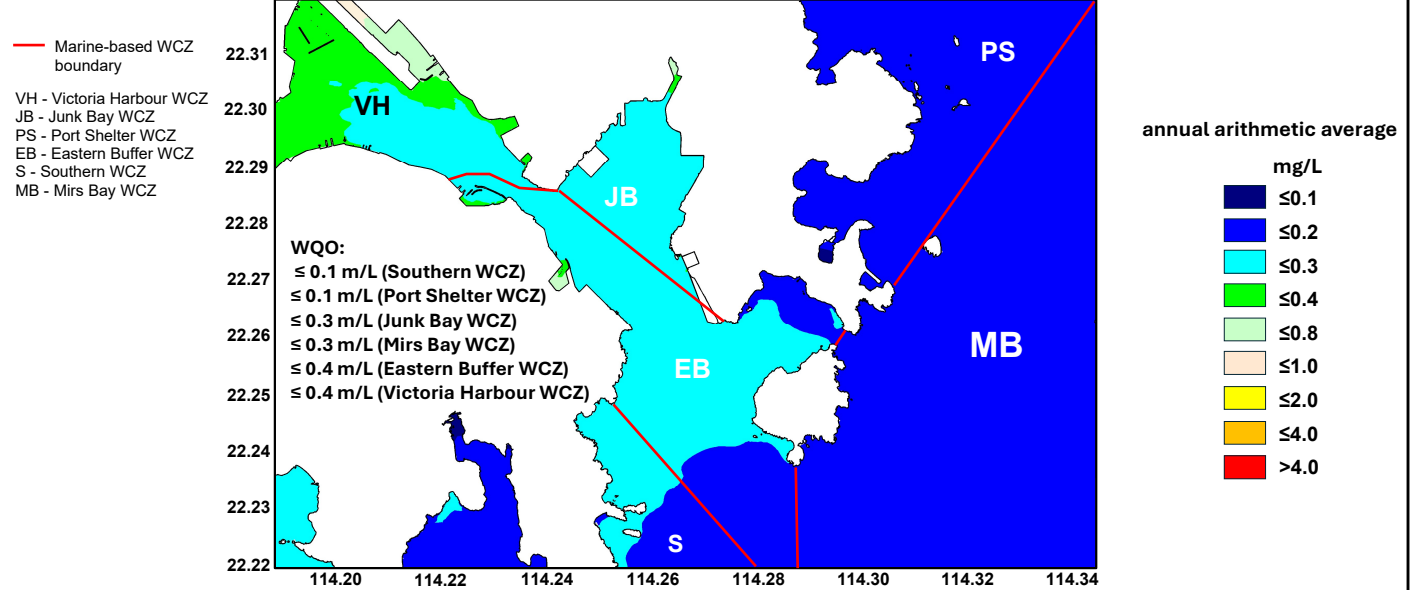
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

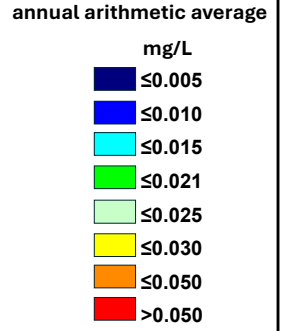
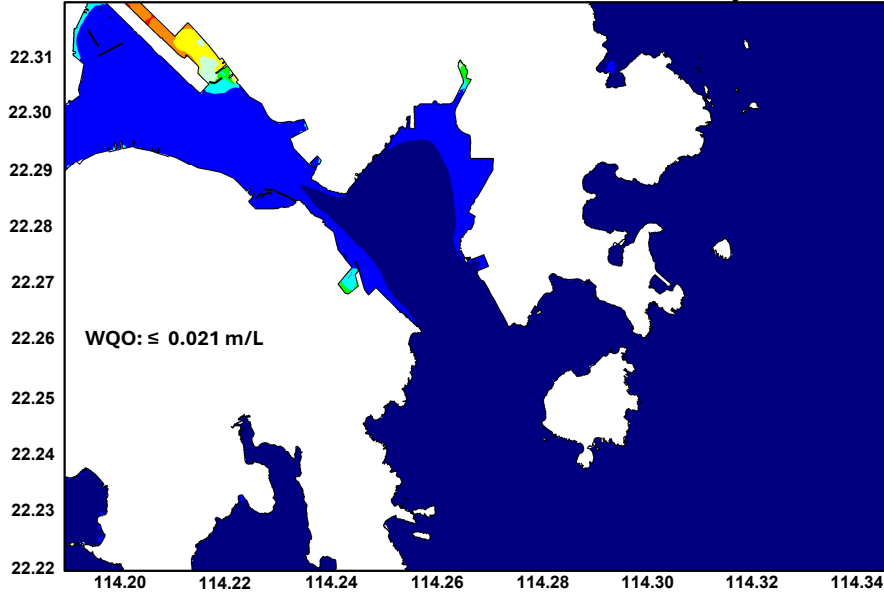


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

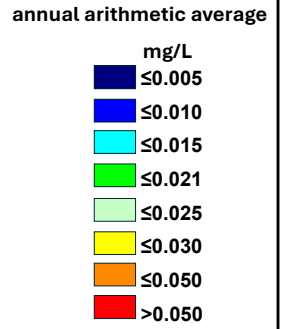
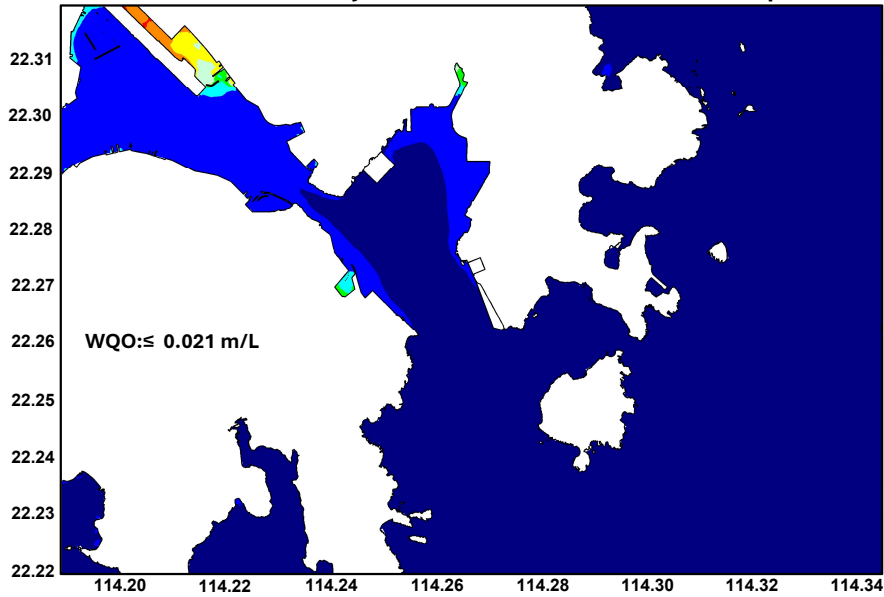


Annual Mean Depth-Averaged Total Inorganic Nitrogen Concentration		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		CE 40/2023 (CE)
Binnies	Appendix 5.11d	6

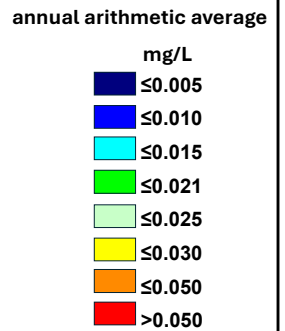
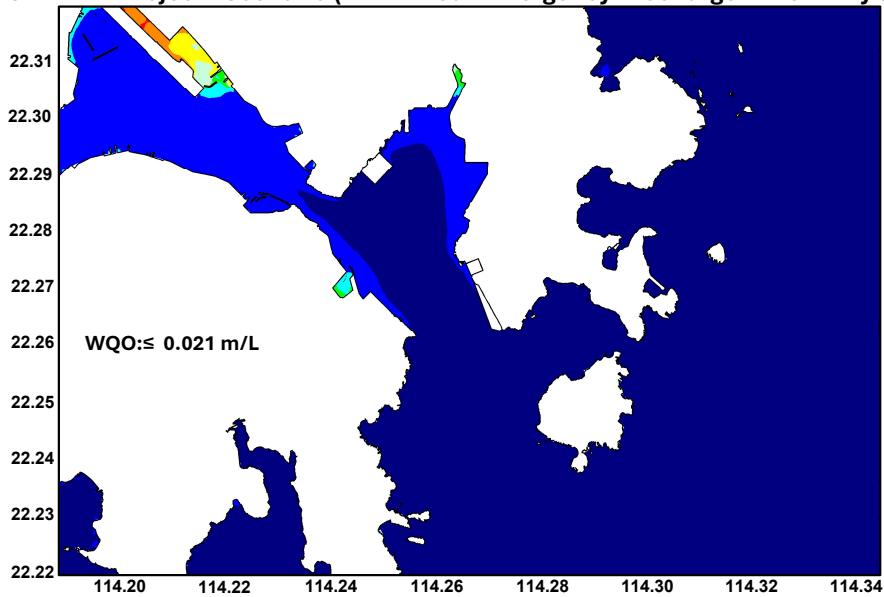
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

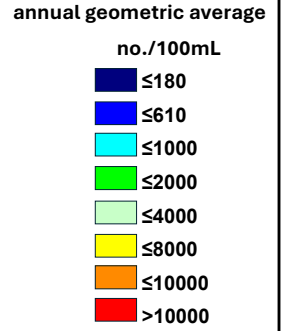
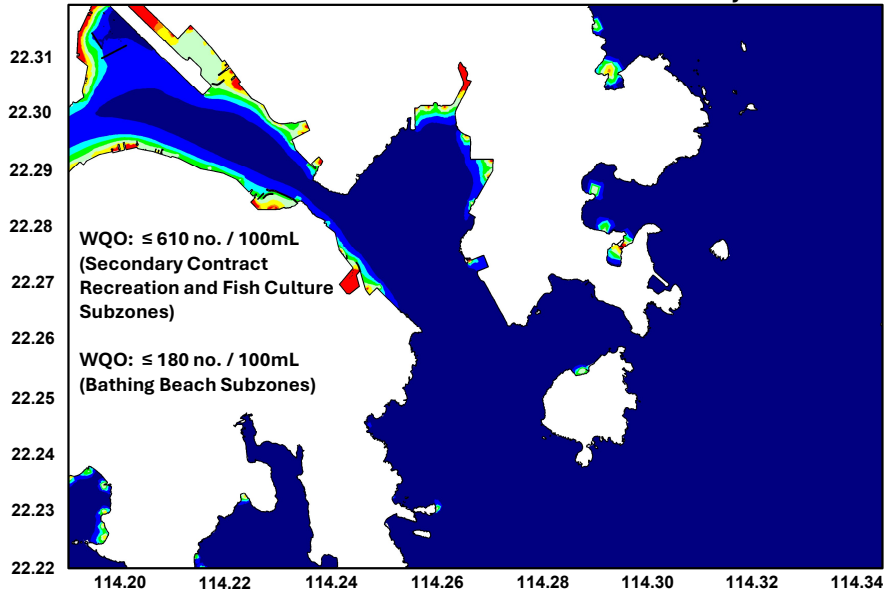


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

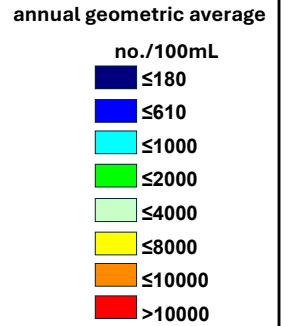
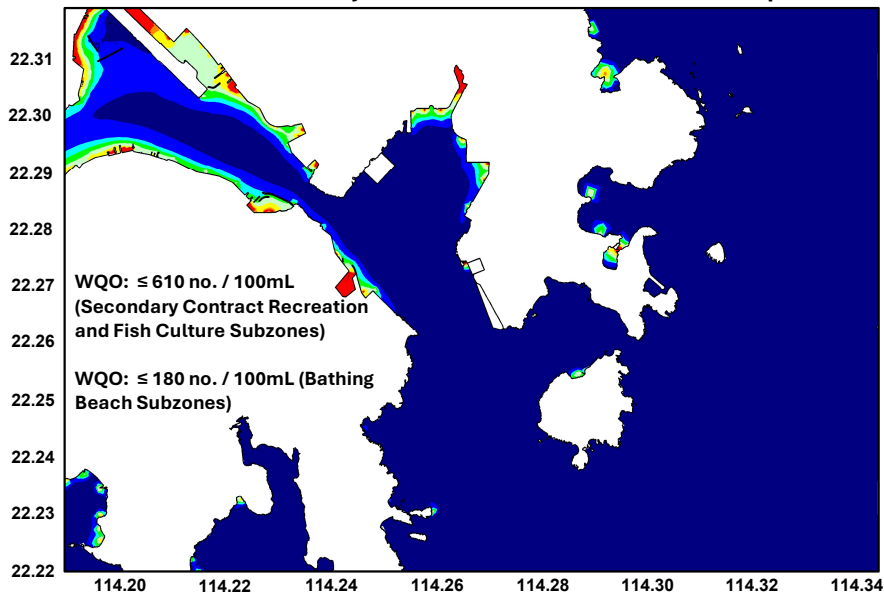


Annual Mean Depth-Averaged Unionized Ammonia Concentration		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		CE 40/2023 (CE)
Binnies	Appendix 5.11d	7

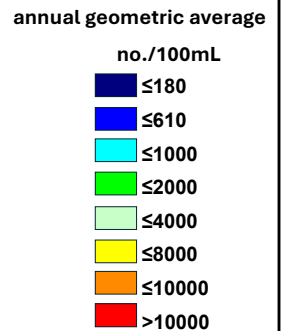
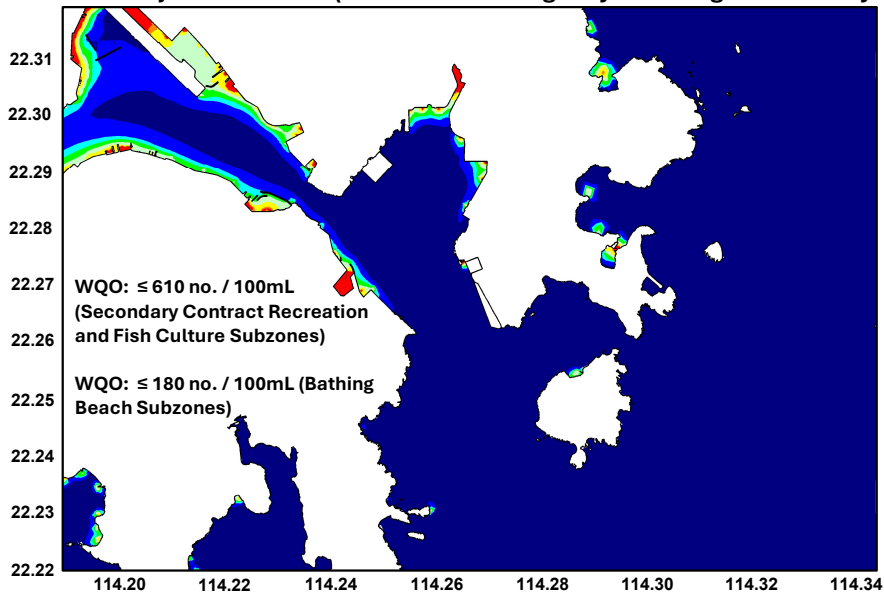
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

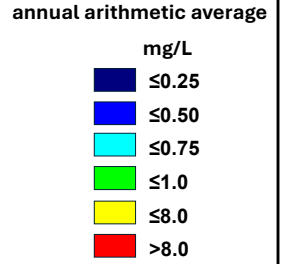
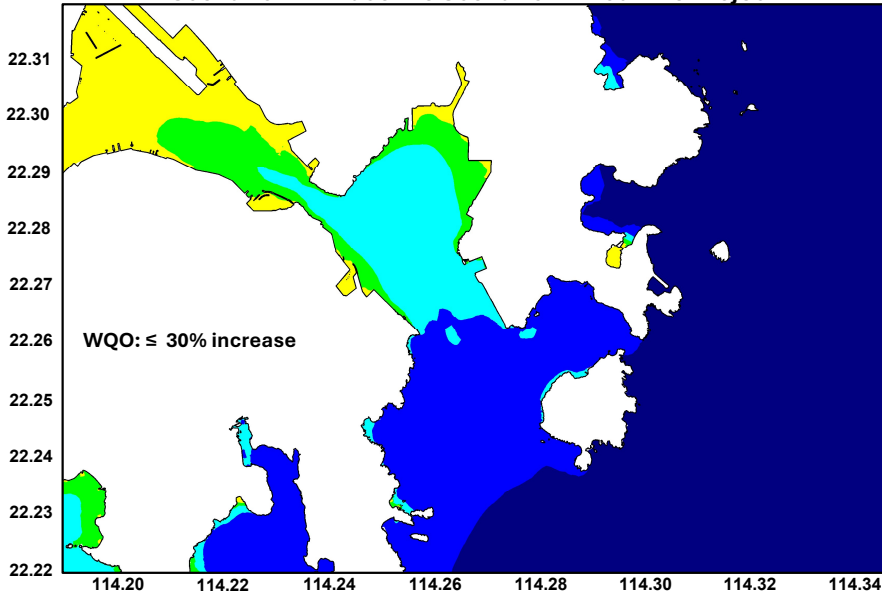


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

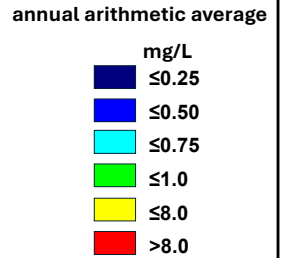
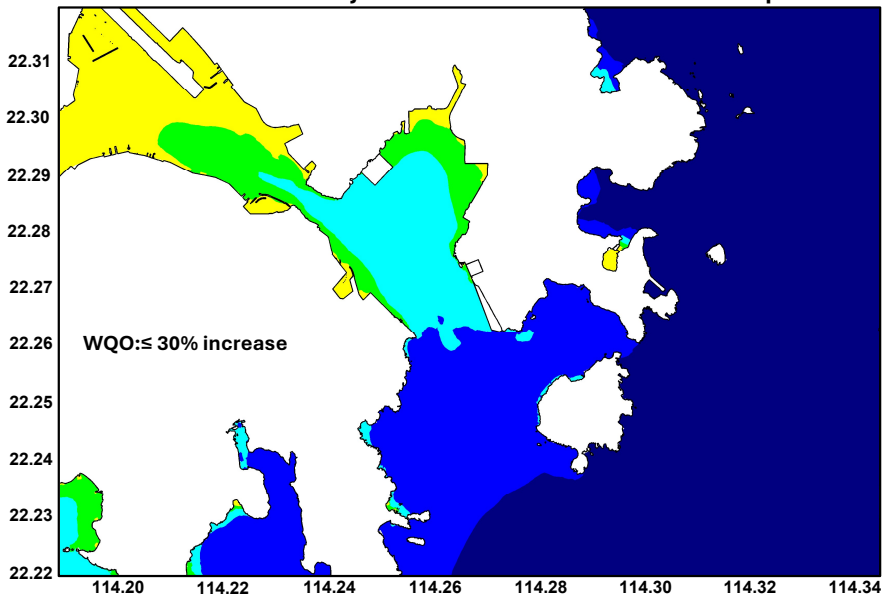


Annual Geometric Mean Depth-averaged <i>E.coli</i> Concentration		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		CE 40/2023 (CE)
Binnies	Appendix 5.11d	8

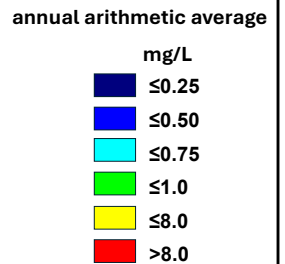
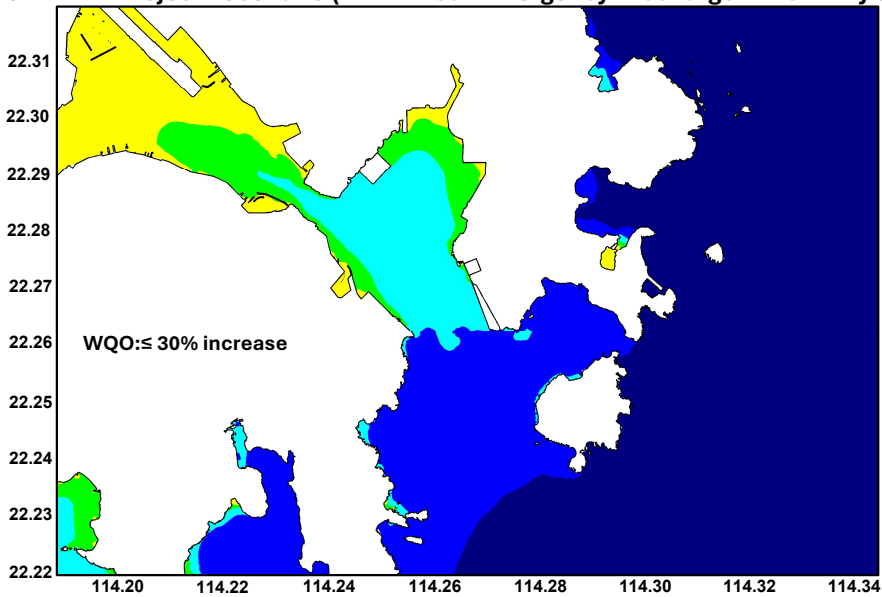
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

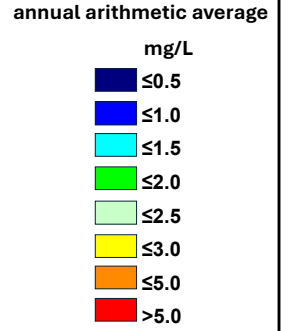
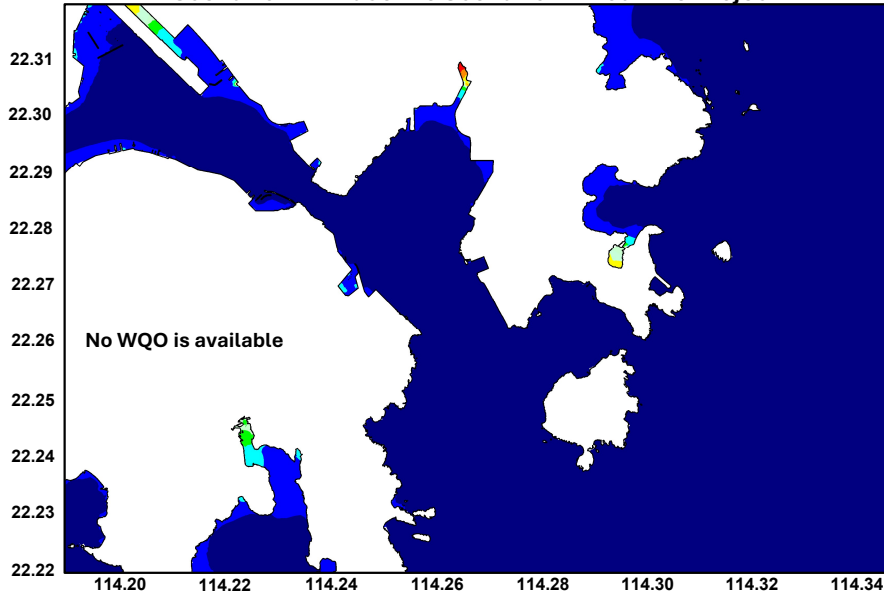


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

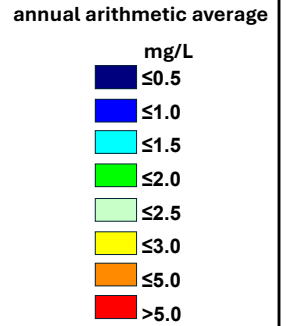
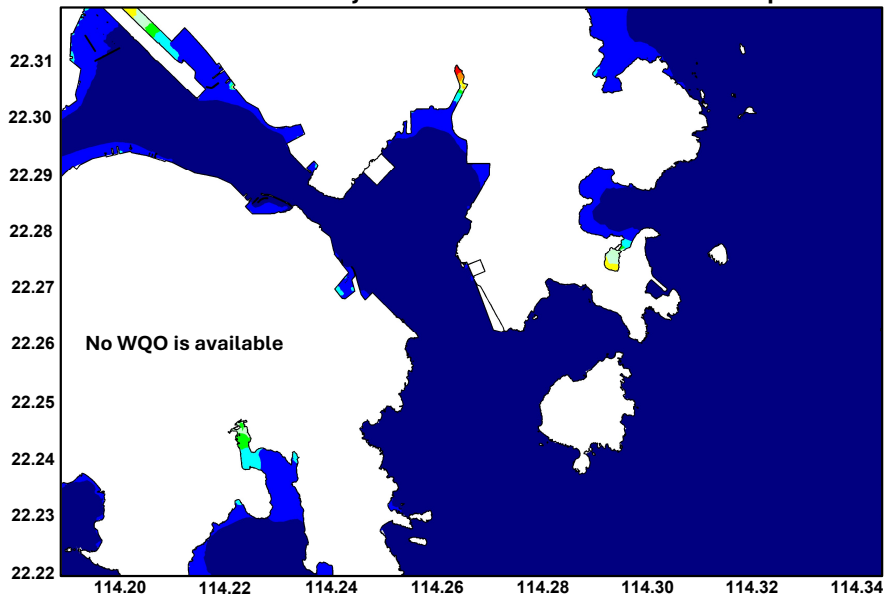


Annual Mean Depth-averaged Suspended Solids Concentration		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		CE 40/2023 (CE)
Binnies	Appendix 5.11d	9

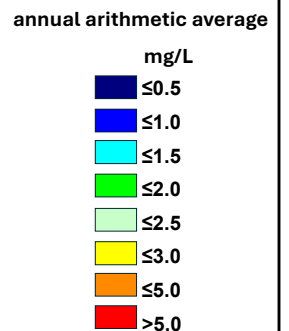
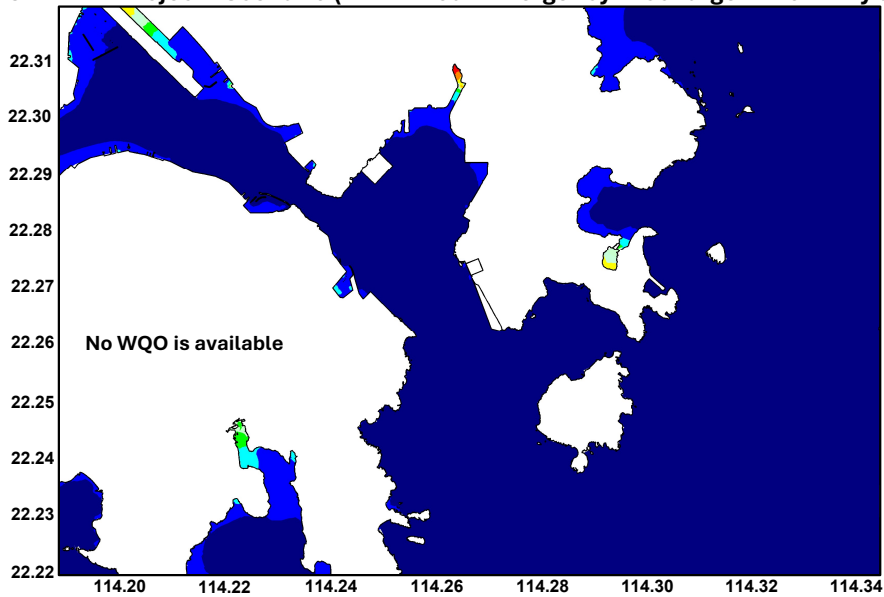
Scenario B1 – Baseline Scenario without the Project



Scenario B2 – “With Project” Scenario under Normal EPP Operation

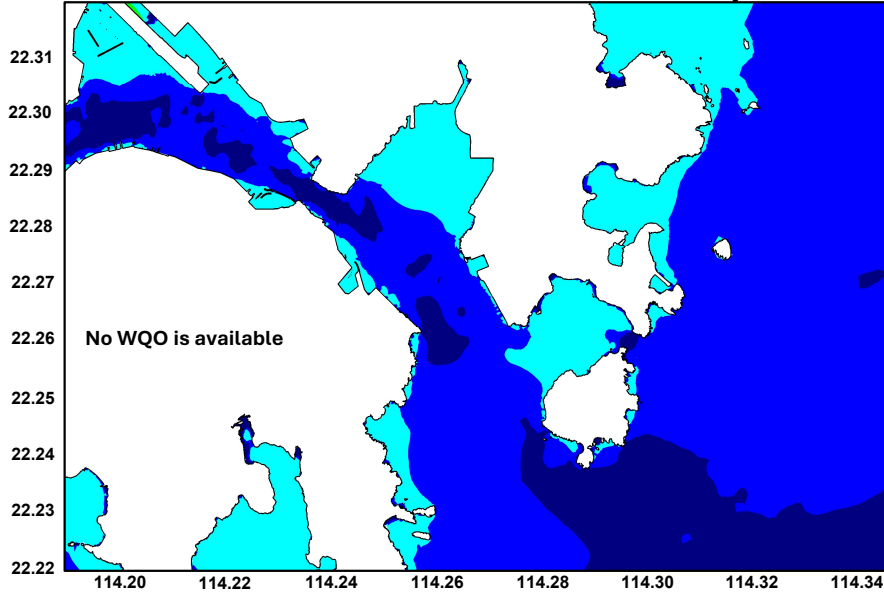


Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)



Annual Mean Depth-Averaged 5-Day Biochemical Oxygen Demand Concentration Top: Baseline Scenario Middle: “With Project” Scenario Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)		
	CE 40/2023 (CE)	
Binnies	Appendix 5.11d	10

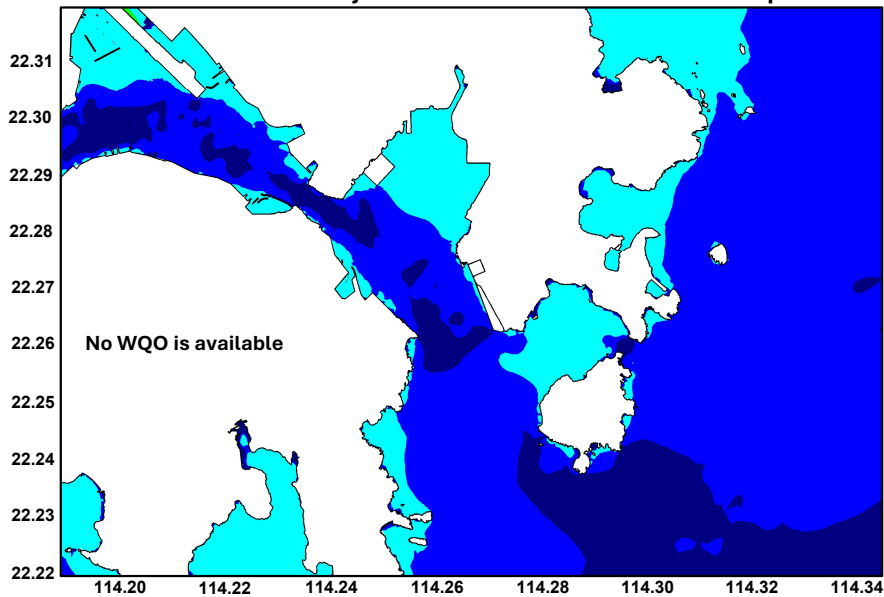
Scenario B1 – Baseline Scenario without the Project



annual arithmetic average
g/m²/day

- ≤0.5
- ≤1.0
- ≤5.0
- ≤10.0
- >10.0

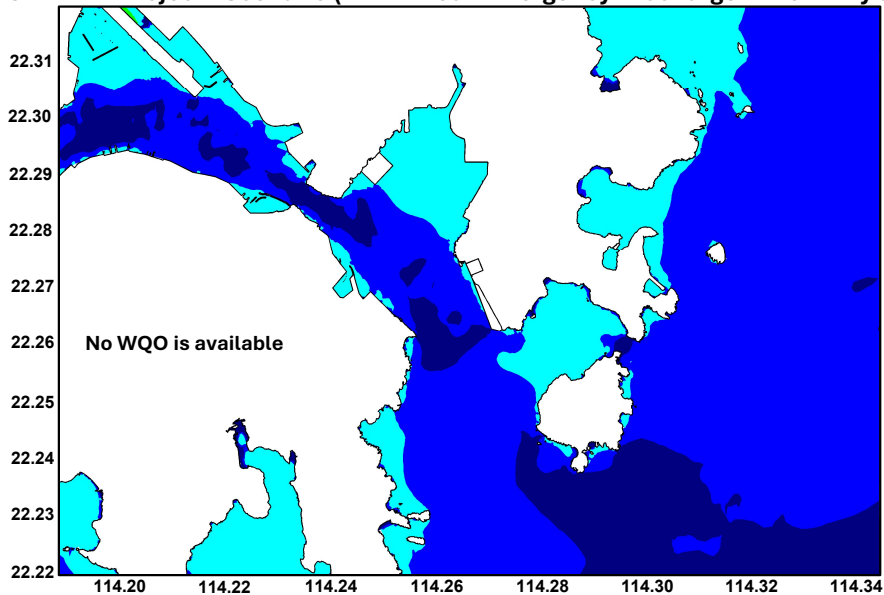
Scenario B2 – “With Project” Scenario under Normal EPP Operation



annual arithmetic average
g/m²/day

- ≤0.5
- ≤1.0
- ≤5.0
- ≤10.0
- >10.0

Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)

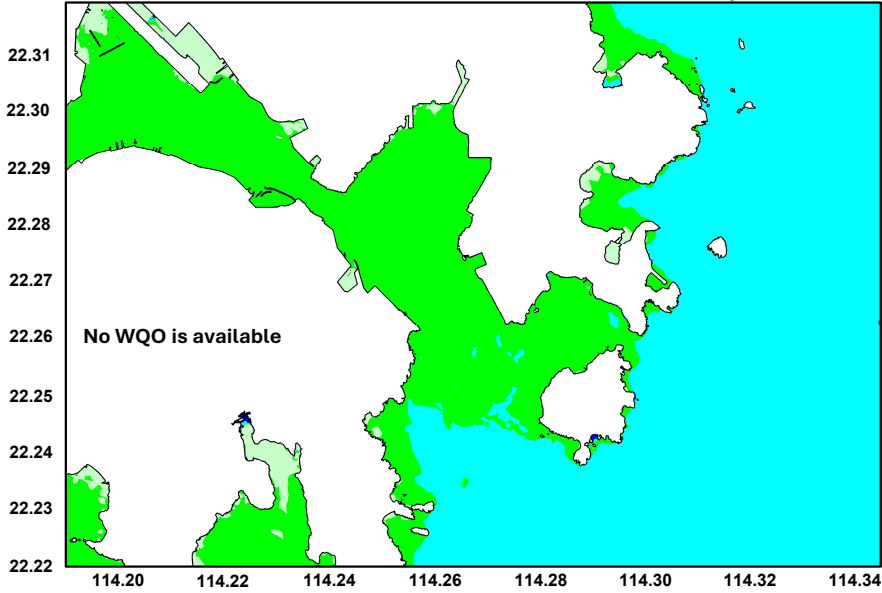


annual arithmetic average
g/m²/day

- ≤0.5
- ≤1.0
- ≤5.0
- ≤10.0
- >10.0

Annual Mean Sedimentation Rate		
Top: Baseline Scenario		
Middle: “With Project” Scenario		
Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)	CE 40/2023 (CE)	
Binnies	Appendix 5.11d	11

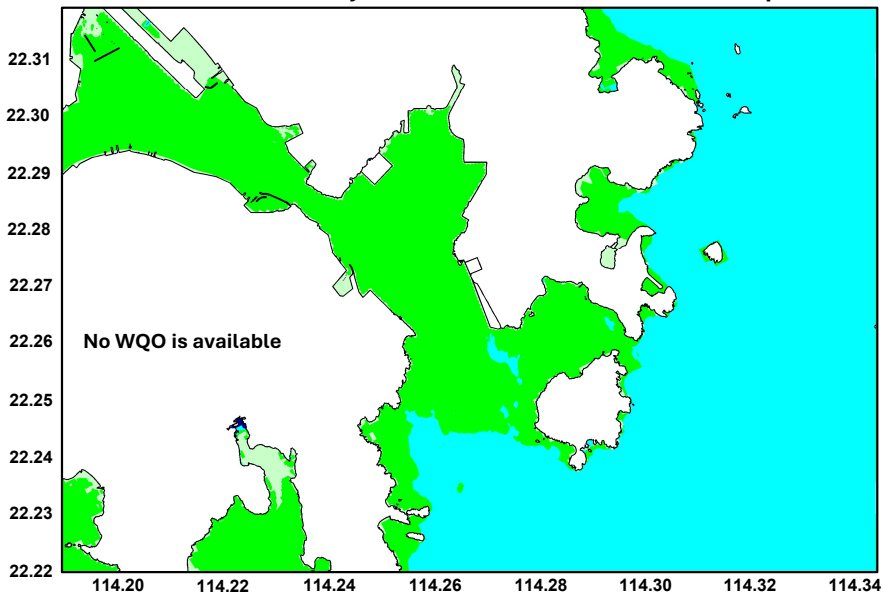
Scenario B1 – Baseline Scenario without the Project



annual arithmetic average
g/m²/day

- ≤ 0.5
- ≤ 1.0
- ≤ 5.0
- ≤ 10.0
- >10.0

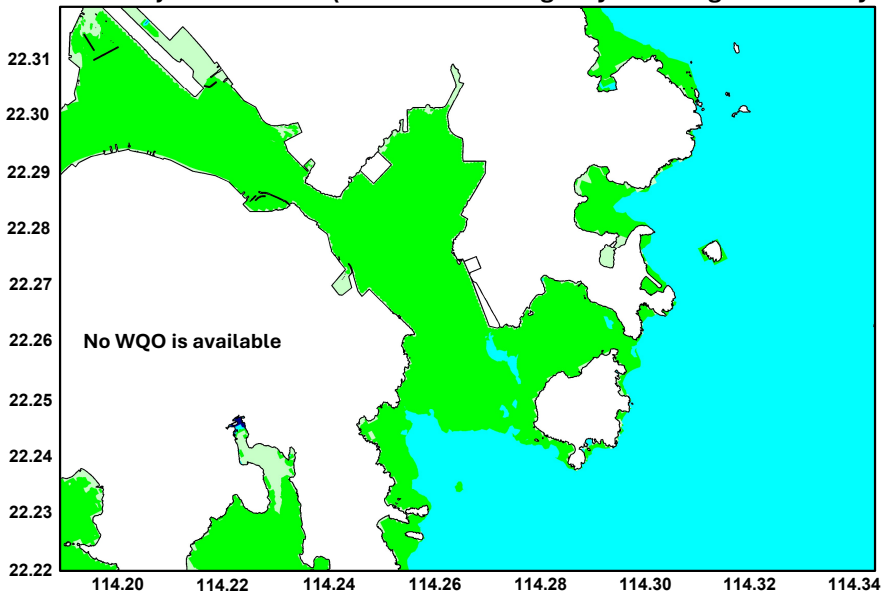
Scenario B2 – “With Project” Scenario under Normal EPP Operation



annual arithmetic average
g/m²/day

- ≤ 0.5
- ≤ 1.0
- ≤ 5.0
- ≤ 10.0
- >10.0

Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)



annual arithmetic average
g/m²/day

- ≤ 0.5
- ≤ 1.0
- ≤ 5.0
- ≤ 10.0
- >10.0

Annual Maximum Sedimentation Rate

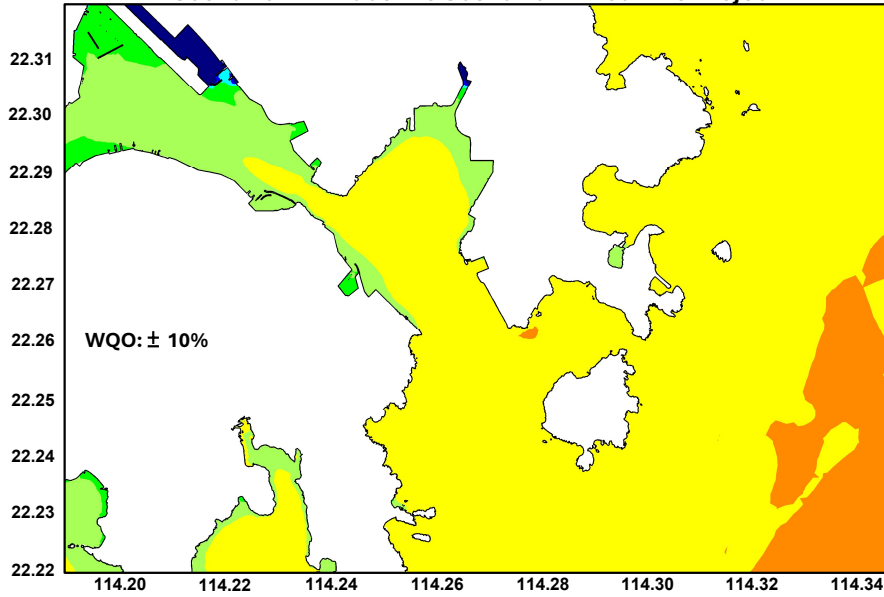
Top: Baseline Scenario

Middle: “With Project” Scenario

Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)

CE 40/2023 (CE)

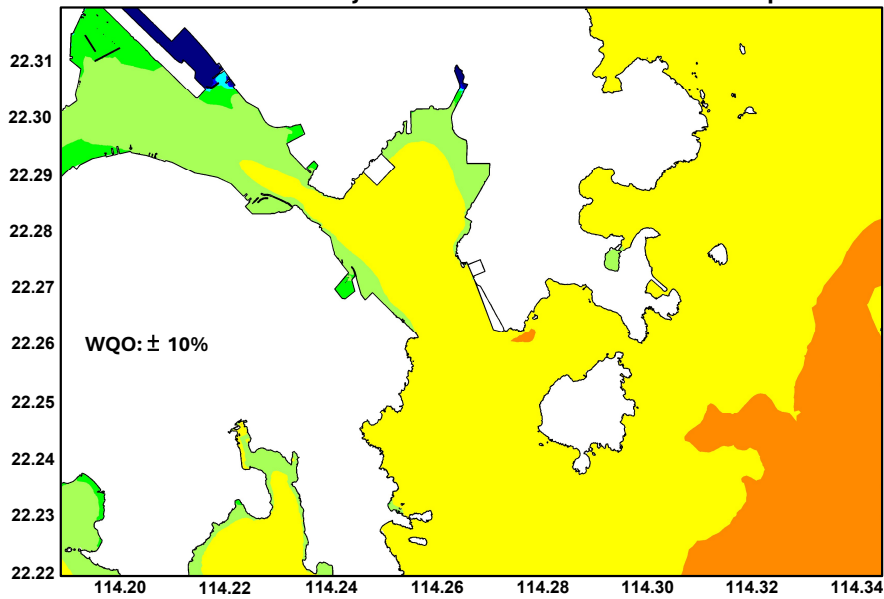
Scenario B1 – Baseline Scenario without the Project



annual arithmetic average



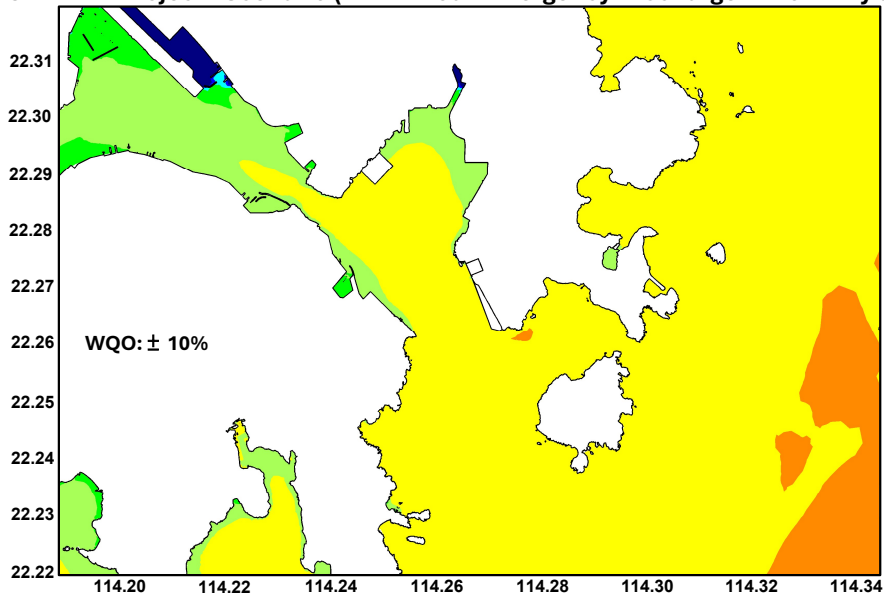
Scenario B2 – “With Project” Scenario under Normal EPP Operation



annual arithmetic average



Scenario B3 – “With Project” Scenario (with 2-hour Emergency Discharge in Both Dry and Wet Seasons)



annual arithmetic average



Annual Mean Depth-Averaged Salinity

Top: Baseline Scenario

Middle: “With Project” Scenario

Bottom: “With Project” Scenario (with 2-hour emergency discharge in both dry and wet seasons)

CE 40/2023 (CE)