Annex 6D

# Predicted Concentration of Nutrients and Elutriate Test Results

*Table D1 Predicted TIN Concentrations (mg L-1) for Scenarios 1 to 3 as a Result of Sediment Release due to the Works*

*LNG Terminal, Submarine Water Main and Submarine Cable Circuit*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 1 | | Scenario 2 | | Scenario 3 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000005 | 0.000006 | 0.000003 | 0.000001 | 0.000012 | 0.000003 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000005 | 0.000006 | 0.000003 | 0.000003 | 0.000014 | 0.000002 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000010 | 0.000010 | 0.000003 | 0.000005 | 0.000028 | 0.000007 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000002 | 0.000004 | 0.000003 | 0.000001 | 0.000007 | 0.000004 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000002 | 0.000001 | 0.000003 | 0.000000 | 0.000005 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000003 | 0.000005 | 0.000004 | 0.000001 | 0.000010 | 0.000002 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000003 | 0.000006 | 0.000006 | 0.000005 | 0.000014 | 0.000002 |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 71 | 0.000001 | 0.000001 | 0.000009 | 0.000002 | 0.000115 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 71 | 0.000001 | 0.000007 | 0.000012 | 0.000009 | 0.000162 | 0.000010 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000004 | 0.000004 | 0.000013 | 0.000005 | 0.000018 | 0.000001 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.001629 | 0.002614 | 0.001151 | 0.001101 | 0.002561 | 0.004073 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 100 | 0.000002 | 0.000001 | 0.000001 | 0.000000 | 0.000004 | 0.000002 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery | SR24 | a | 71 | 0.000043 | 0.000031 | 0.000180 | 0.000080 | 0.000016 | 0.000009 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg$^{-1}$) | Scenario 1 | | Scenario 2 | | Scenario 3 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| | Grounds in South Lantau | | | | | | | | | |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000174 | 0.000186 | 0.000057 | 0.000031 | 0.000178 | 0.000182 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.000207 | 0.000111 | 0.000013 | 0.000011 | 0.000264 | 0.000165 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D1 (cont'd)* *Predicted TIN Concentrations (mg $L^{-1}$) for Scenarios 4a to 6 as a Result of Sediment Release due to the Works*

*LNG Terminal, Submarine Water Main, Submarine Cable Circuit and Gas Receiving Station*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg $kg^{-1}$) | Scenario 4a | | Scenario 4b | | Scenario 5 | | Scenario 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000004 | 0.000001 | 0.000005 | 0.000001 | 0.000007 | 0.000003 | 0.000003 | 0.000003 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000005 | 0.000002 | 0.000006 | 0.000002 | 0.000006 | 0.000002 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000011 | 0.000004 | 0.000015 | 0.000005 | 0.000011 | 0.000003 | 0.000002 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000002 | 0.000001 | 0.000002 | 0.000001 | 0.000005 | 0.000007 | 0.000004 | 0.000003 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000001 | 0.000000 | 0.000002 | 0.000000 | 0.000004 | 0.000002 | 0.000003 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000002 | 0.000001 | 0.000002 | 0.000001 | 0.000005 | 0.000003 | 0.000003 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000002 | 0.000002 | 0.000002 | 0.000002 | 0.000008 | 0.000002 | 0.000000 | 0.000001 |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 71 | 0.000001 | 0.000000 | 0.000001 | 0.000000 | 0.000026 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 71 | 0.000001 | 0.000002 | 0.000001 | 0.000002 | 0.000038 | 0.000006 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000002 | 0.000001 | 0.000003 | 0.000001 | 0.000016 | 0.000002 | 0.000000 | 0.000001 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 4a | | Scenario 4b | | Scenario 5 | | Scenario 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.000018 | 0.000016 | 0.000016 | 0.000018 | 0.000249 | 0.000401 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 100 | 0.000001 | 0.000000 | 0.000001 | 0.000000 | 0.000004 | 0.000002 | 0.000002 | 0.000001 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 71 | 0.000009 | 0.000004 | 0.000011 | 0.000004 | 0.000229 | 0.000021 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000011 | 0.000022 | 0.000014 | 0.000023 | 0.000220 | 0.000128 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.001101 | 0.000694 | 0.000863 | 0.000904 | 0.000430 | 0.000264 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D1 (cont'd) Predicted TIN Concentrations (mg $L^{-1}$) Scenarios 7 and 8 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg $kg^{-1}$) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 100 | 0.000000 | 0.000000 | 0.000179 | 0.000286 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 100 | 0.000000 | 0.000000 | 0.000007 | 0.000044 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg$^{-1}$) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07d | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07e | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07f | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 100 | 0.000000 | 0.000000 | 0.000026 | 0.000005 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000000 | 0.000000 | 0.000053 | 0.000010 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000000 | 0.000000 | 0.000041 | 0.000017 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000000 | 0.000000 | 0.000048 | 0.000023 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000000 | 0.000000 | 0.000053 | 0.000054 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000000 | 0.000000 | 0.000023 | 0.000004 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000000 | 0.000000 | 0.000036 | 0.000051 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000000 | 0.000000 | 0.000125 | 0.000061 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg$^{-1}$) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 100 | 0.000000 | 0.000000 | 0.000013 | 0.000004 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 100 | 0.000000 | 0.000000 | 0.000018 | 0.000105 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000000 | 0.000000 | 0.000142 | 0.000033 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.000752 | 0.000427 | 0.000249 | 0.000075 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 71 | 0.000000 | 0.000000 | 0.000011 | 0.000002 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 71 | 0.000001 | 0.000002 | 0.000080 | 0.000038 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000009 | 0.000016 | 0.000080 | 0.000016 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.000011 | 0.000023 | 0.000032 | 0.000023 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D1 (cont'd) Predicted TIN Concentrations (mg $L^{-1}$) Scenarios 10 and 11 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg $kg^{-1}$) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 142 | 0.000000 | 0.000000 | 0.000001 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 100 | 0.000070 | 0.000075 | 0.000432 | 0.000202 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 100 | 0.000461 | 0.000538 | 0.000030 | 0.000011 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 100 | 0.000003 | 0.000001 | 0.000006 | 0.000008 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 100 | 0.000003 | 0.000013 | 0.000004 | 0.000003 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 100 | 0.000075 | 0.000053 | 0.000032 | 0.000016 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 100 | 0.000000 | 0.000000 | 0.000001 | 0.000001 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 100 | 0.000000 | 0.000000 | 0.000001 | 0.000001 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg$^{-1}$) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 100 | 0.000000 | 0.000001 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07d | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07e | b | 100 | 0.000000 | 0.000001 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 100 | 0.000002 | 0.000001 | 0.000004 | 0.000002 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 100 | 0.000008 | 0.000006 | 0.000001 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000013 | 0.000010 | 0.000002 | 0.000006 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000008 | 0.000004 | 0.000001 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000008 | 0.000004 | 0.000001 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000011 | 0.000015 | 0.000002 | 0.000002 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000009 | 0.000004 | 0.000001 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000011 | 0.000005 | 0.000001 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000002 | 0.000002 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg$^{-1}$) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000002 | 0.000002 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 71 | 0.000003 | 0.000005 | 0.000001 | 0.000001 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D1 (cont'd) Predicted TIN Concentrations (mg $L^{-1}$)Scenarios 11 and 12 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg $kg^{-1}$) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 142 | 0.000006 | 0.000004 | 0.000013 | 0.000038 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 142 | 0.000020 | 0.000017 | 0.000060 | 0.000067 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 142 | 0.000000 | 0.000000 | 0.000000 | 0.000003 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 142 | 0.000053 | 0.000129 | 0.000868 | 0.000611 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 100 | 0.000009 | 0.000001 | 0.000028 | 0.000003 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 100 | 0.000006 | 0.000003 | 0.000016 | 0.000011 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 100 | 0.000035 | 0.000038 | 0.000002 | 0.000001 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 100 | 0.000016 | 0.000012 | 0.000002 | 0.000002 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 100 | 0.000057 | 0.000042 | 0.000005 | 0.000007 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 100 | 0.000028 | 0.000023 | 0.000005 | 0.000004 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 100 | 0.000019 | 0.000015 | 0.000001 | 0.000001 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 100 | 0.000053 | 0.000049 | 0.000042 | 0.000063 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 100 | 0.000029 | 0.000023 | 0.000013 | 0.000017 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 100 | 0.000007 | 0.000005 | 0.000002 | 0.000001 |
| Seawater Intakes | Airport | SR07d | b | 100 | 0.000000 | 0.000001 | 0.000000 | 0.000001 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 100 | 0.000000 | 0.000001 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07e | b | 100 | 0.000000 | 0.000002 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 100 | 0.000038 | 0.000034 | 0.000008 | 0.000009 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 100 | 0.000004 | 0.000006 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000001 | 0.000005 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000003 | 0.000003 | 0.000001 | 0.000001 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 71 | 0.000002 | 0.000002 | 0.000001 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D1 (cont'd) Predicted TIN Concentrations (mg $L^{-1}$)Scenarios 13 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg $kg^{-1}$) | Scenario 13 | |
|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 142 | 0.000016 | 0.000027 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 142 | 0.000047 | 0.000061 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 142 | 0.000000 | 0.000001 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 142 | 0.000214 | 0.000193 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 100 | 0.000015 | 0.000001 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 100 | 0.000010 | 0.000007 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 100 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 100 | 0.000003 | 0.000001 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 100 | 0.000002 | 0.000002 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 100 | 0.000009 | 0.000005 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 100 | 0.000007 | 0.000004 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 100 | 0.000003 | 0.000001 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 100 | 0.000032 | 0.000040 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 100 | 0.000015 | 0.000013 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 13 | |
|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 100 | 0.000002 | 0.000001 |
| Seawater Intakes | Airport | SR07d | b | 100 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 100 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07e | b | 100 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 100 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 100 | 0.000007 | 0.000009 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 100 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 100 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 100 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 100 | 0.000001 | 0.000001 |
| Intertidal Mudflats | Yi O | SR14 | s | 100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 100 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TIN Conc. In Sediment (mg kg-1) | Scenario 13 Dry Max | Scenario 13 Wet Max |
|---|---|---|---|---|---|---|
| Mangroves | Fan Lau Tung Wan | SR15b | s | 100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 100 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 71 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 71 | 0.000001 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 71 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 71 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 71 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 71 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 71 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 71 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 71 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 100 | 0.000000 | 0.000000 |

*Table D2 Predicted Unionised Ammonia Concentrations (mg $L^{-1}$) for Scenarios 1 to 3 as a Result of Sediment Release due to the Works*
*LNG Terminal, Submarine Water Main and Submarine Cable Circuit*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 1 | | Scenario 2 | | Scenario 3 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000005 | 0.000006 | 0.000003 | 0.000001 | 0.000013 | 0.000003 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000005 | 0.000006 | 0.000003 | 0.000003 | 0.000015 | 0.000002 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000011 | 0.000011 | 0.000003 | 0.000005 | 0.000029 | 0.000007 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000002 | 0.000004 | 0.000003 | 0.000001 | 0.000007 | 0.000004 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000002 | 0.000001 | 0.000003 | 0.000000 | 0.000005 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000003 | 0.000005 | 0.000004 | 0.000001 | 0.000011 | 0.000002 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000003 | 0.000006 | 0.000006 | 0.000005 | 0.000015 | 0.000002 |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000002 | 0.000001 | 0.000013 | 0.000003 | 0.000170 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000002 | 0.000011 | 0.000018 | 0.000013 | 0.000239 | 0.000015 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000004 | 0.000004 | 0.000014 | 0.000005 | 0.000019 | 0.000001 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.001491 | 0.002393 | 0.001054 | 0.001008 | 0.002345 | 0.003729 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000002 | 0.000001 | 0.000001 | 0.000000 | 0.000004 | 0.000002 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South | SR24 | a | 1300 | 0.000040 | 0.000028 | 0.000164 | 0.000073 | 0.000015 | 0.000008 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg-1) | Scenario 1 | | Scenario 2 | | Scenario 3 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| | Lantau | | | | | | | | | |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000159 | 0.000170 | 0.000052 | 0.000029 | 0.000163 | 0.000166 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.000190 | 0.000101 | 0.000012 | 0.000010 | 0.000242 | 0.000151 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D2 (cont'd) Predicted Unionised Ammonia Concentrations(mg $L^{-1}$) for Scenarios 4a to 6 as a Result of Sediment Release due to the Works*

*LNG Terminal, Submarine Water Main and Submarine Cable Circuit and Gas Receiving Station*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 4a | | Scenario 4b | | Scenario 5 | | Scenario 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000004 | 0.000001 | 0.000005 | 0.000001 | 0.000007 | 0.000003 | 0.000003 | 0.000003 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000005 | 0.000002 | 0.000006 | 0.000002 | 0.000006 | 0.000002 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000012 | 0.000004 | 0.000016 | 0.000005 | 0.000012 | 0.000003 | 0.000002 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000002 | 0.000001 | 0.000002 | 0.000001 | 0.000005 | 0.000007 | 0.000004 | 0.000003 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000001 | 0.000000 | 0.000002 | 0.000000 | 0.000004 | 0.000002 | 0.000003 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000002 | 0.000001 | 0.000002 | 0.000001 | 0.000005 | 0.000003 | 0.000003 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000002 | 0.000002 | 0.000002 | 0.000002 | 0.000008 | 0.000002 | 0.000000 | 0.000001 |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000001 | 0.000000 | 0.000001 | 0.000000 | 0.000038 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000001 | 0.000003 | 0.000001 | 0.000003 | 0.000056 | 0.000009 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000002 | 0.000001 | 0.000003 | 0.000001 | 0.000017 | 0.000002 | 0.000000 | 0.000001 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.000016 | 0.000015 | 0.000014 | 0.000016 | 0.000228 | 0.000367 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg-1) | Scenario 4a | | Scenario 4b | | Scenario 5 | | Scenario 6 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max | Dry Max | Wet Max |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000001 | 0.000000 | 0.000001 | 0.000000 | 0.000004 | 0.000002 | 0.000002 | 0.000001 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 1300 | 0.000008 | 0.000003 | 0.000010 | 0.000003 | 0.000209 | 0.000020 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000010 | 0.000020 | 0.000013 | 0.000021 | 0.000202 | 0.000117 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.001008 | 0.000636 | 0.000790 | 0.000827 | 0.000393 | 0.000242 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D2 (cont'd) Predicted Unionised Ammonia Concentrations (mg $L^{-1}$) for Scenarios 7 and 8 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 2100 | 0.000000 | 0.000000 | 0.000154 | 0.000408 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000001 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 2100 | 0.000000 | 0.000000 | 0.000029 | 0.000043 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg$^{-1}$) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07d | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07e | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07f | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 2100 | 0.000000 | 0.000000 | 0.000029 | 0.000008 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000000 | 0.000000 | 0.000063 | 0.000011 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000000 | 0.000000 | 0.000043 | 0.000019 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000000 | 0.000000 | 0.000058 | 0.000025 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000000 | 0.000000 | 0.000046 | 0.000077 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000000 | 0.000000 | 0.000025 | 0.000004 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000000 | 0.000000 | 0.000038 | 0.000051 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000000 | 0.000000 | 0.000038 | 0.000060 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg-1) | Scenario 7 | | Scenario 8 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000000 | 0.000000 | 0.000014 | 0.000007 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000000 | 0.000000 | 0.000021 | 0.000107 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000000 | 0.000000 | 0.000035 | 0.000028 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.000688 | 0.000391 | 0.000274 | 0.000072 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000000 | 0.000000 | 0.000013 | 0.000003 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 1300 | 0.000001 | 0.000002 | 0.000065 | 0.000037 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000008 | 0.000014 | 0.000073 | 0.000018 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.000010 | 0.000021 | 0.000029 | 0.000026 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D2 (cont'd) Predicted Unionised Ammonia Concentrations(mg $L^{-1}$) for Scenarios 9 and 10 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 2600 | 0.000000 | 0.000000 | 0.000001 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 2100 | 0.000074 | 0.000079 | 0.000454 | 0.000212 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 2100 | 0.000484 | 0.000565 | 0.000032 | 0.000012 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 2100 | 0.000003 | 0.000001 | 0.000006 | 0.000008 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 2100 | 0.000003 | 0.000014 | 0.000004 | 0.000003 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 2100 | 0.000079 | 0.000056 | 0.000034 | 0.000017 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 2100 | 0.000000 | 0.000000 | 0.000001 | 0.000001 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 2100 | 0.000000 | 0.000000 | 0.000001 | 0.000001 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg-1) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 2100 | 0.000000 | 0.000001 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07d | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07e | b | 2100 | 0.000000 | 0.000001 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 2100 | 0.000002 | 0.000001 | 0.000004 | 0.000002 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 2100 | 0.000008 | 0.000006 | 0.000001 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000014 | 0.000011 | 0.000002 | 0.000006 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000008 | 0.000004 | 0.000001 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000008 | 0.000004 | 0.000001 | 0.000001 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000012 | 0.000016 | 0.000002 | 0.000002 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000009 | 0.000004 | 0.000001 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000012 | 0.000005 | 0.000001 | 0.000001 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000002 | 0.000002 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg$^{-1}$) | Scenario 9 | | Scenario 10 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000002 | 0.000002 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000003 | 0.000005 | 0.000001 | 0.000001 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D2 (cont'd) Predicted Unionised Ammonia Concentrations (mg $L^{-1}$) for Scenarios 11 and 12 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Intertidal Mudflats | Pak Nai | SR01 | s | 2600 | 0.000005 | 0.000004 | 0.000012 | 0.000035 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 2600 | 0.000018 | 0.000016 | 0.000055 | 0.000061 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 2600 | 0.000000 | 0.000000 | 0.000000 | 0.000003 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 2600 | 0.000048 | 0.000118 | 0.000794 | 0.000559 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 2100 | 0.000009 | 0.000001 | 0.000029 | 0.000003 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 2100 | 0.000006 | 0.000003 | 0.000017 | 0.000012 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 2100 | 0.000037 | 0.000040 | 0.000002 | 0.000001 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 2100 | 0.000017 | 0.000013 | 0.000002 | 0.000002 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 2100 | 0.000060 | 0.000044 | 0.000005 | 0.000007 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 2100 | 0.000029 | 0.000024 | 0.000005 | 0.000004 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 2100 | 0.000020 | 0.000016 | 0.000001 | 0.000001 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 2100 | 0.000056 | 0.000051 | 0.000044 | 0.000066 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 2100 | 0.000030 | 0.000024 | 0.000014 | 0.000018 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg-1) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 2100 | 0.000007 | 0.000005 | 0.000002 | 0.000001 |
| Seawater Intakes | Airport | SR07d | b | 2100 | 0.000000 | 0.000001 | 0.000000 | 0.000001 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 2100 | 0.000000 | 0.000001 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07e | b | 2100 | 0.000000 | 0.000002 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 2100 | 0.000040 | 0.000036 | 0.000008 | 0.000009 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 2100 | 0.000004 | 0.000006 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000001 | 0.000005 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000003 | 0.000003 | 0.000001 | 0.000001 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000001 | 0.000001 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg$^{-1}$) | Scenario 11 | | Scenario 12 | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000002 | 0.000002 | 0.000001 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 | 0.000000 | 0.000000 |

*Table D2 (cont'd) Predicted Unionised Ammonia Concentrations (mg $L^{-1}$) for Scenarios 13 as a Result of Sediment Release due to the Works*

*Submarine Gas Pipeline*

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg $kg^{-1}$) | Scenario 13 Dry Max | Scenario 13 Wet Max |
|---|---|---|---|---|---|---|
| Intertidal Mudflats | Pak Nai | SR01 | s | 2600 | 0.000014 | 0.000025 |
| Horseshoe Crab Nursery Grounds | Pak Nai | SR01 | a | 2600 | 0.000043 | 0.000056 |
| Seagrass Beds/Mangroves/Oyster Farm | Pak Nai | SR02 | s | 2600 | 0.000000 | 0.000001 |
| Seawater Intakes | Black Point Power Station | SR04 | b | 2600 | 0.000196 | 0.000177 |
| Non-gazetted Beaches | Lung Kwu Sheung Tan | SR05a | a | 2100 | 0.000016 | 0.000001 |
| Non-gazetted Beaches | Lung Kwu Tan | SR05b | a | 2100 | 0.000011 | 0.000007 |
| Gazetted Beaches | Butterfly Beach | SR05c | a | 2100 | 0.000000 | 0.000000 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06a | a | 2100 | 0.000003 | 0.000001 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06b | a | 2100 | 0.000002 | 0.000002 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06c | a | 2100 | 0.000009 | 0.000005 |
| Marine Park | Designated Sha Chau and Lung Kwu Chau | SR06d | a | 2100 | 0.000007 | 0.000004 |
| Artificial Reef Deployment Area | Sha Chau and Lung Kwu Chau | SR06e | a | 2100 | 0.000003 | 0.000001 |
| Seawater Intakes | Castle Peak Power Station | SR07a | b | 2100 | 0.000034 | 0.000042 |
| Seawater Intakes | Tuen Mun Area 38 | SR07b | b | 2100 | 0.000016 | 0.000014 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg$^{-1}$) | Scenario 13 | |
|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max |
| Seawater Intakes | Airport | SR07c | b | 2100 | 0.000002 | 0.000001 |
| Seawater Intakes | Airport | SR07d | b | 2100 | 0.000000 | 0.000000 |
| Artificial Reef Deployment Area | Northeast Airport | SR07d | a | 2100 | 0.000000 | 0.000001 |
| Seawater Intakes | Airport | SR07e | b | 2100 | 0.000000 | 0.000000 |
| Seawater Intakes | Airport | SR07f | b | 2100 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning Ground in North Lantau | SR08 | a | 2100 | 0.000007 | 0.000009 |
| Horseshoe Crab Nursery Grounds | Sham Wat Wan | SR10 | a | 2100 | 0.000002 | 0.000001 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11 | a | 2100 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11a | a | 2100 | 0.000000 | 0.000000 |
| Protection Zone | Chinese White Dolphin Protection Zone in Mainland Waters | SR11b | a | 2100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tai O | SR12 | a | 2100 | 0.000001 | 0.000001 |
| Intertidal Mudflats | Yi O | SR14 | s | 2100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Yi O | SR14 | a | 2100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Sai Wan | SR15a | a | 2100 | 0.000000 | 0.000000 |

| Sensitive Receiver | Name | ID | Depth (s = surface, m = middle, b = bottom, a = depth-average) | Max TKN Conc. In Sediment (mg kg$^{-1}$) | Scenario 13 | |
|---|---|---|---|---|---|---|
| | | | | | Dry Max | Wet Max |
| Mangroves | Fan Lau Tung Wan | SR15b | s | 2100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Fan Lau Tung Wan | SR15b | a | 2100 | 0.000000 | 0.000000 |
| Non-gazetted Beaches | Tsin Yue Wan | SR15c | a | 2100 | 0.000000 | 0.000000 |
| Fish Fry Habitat | Pak Tso Wan | SR16b | a | 1300 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Sha Lo Wan | SR18 | a | 2100 | 0.000001 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR24 | a | 1300 | 0.000000 | 0.000000 |
| Spawning/Nursery Grounds | Fisheries Spawning/Nursery Grounds in South Lantau | SR27 | a | 1300 | 0.000000 | 0.000000 |
| Subtidal Hard Bottom Habitat (coral) | Southern Side of South Soko | SR31 | a | 1300 | 0.000000 | 0.000000 |
| Intertidal Mudflats | Shui Hau Wan | SR33 | s | 1300 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tong Fuk Miu Wan | SR33 | a | 1300 | 0.000000 | 0.000000 |
| Gazetted Beaches | Tong Fuk | SR34 | a | 1300 | 0.000000 | 0.000000 |
| Gazetted Beaches | Upper Cheung Sha Beach | SR35 | a | 1300 | 0.000000 | 0.000000 |
| Seagrass Beds/Mangroves | Tung Chung Bay | SR39 | s | 2100 | 0.000000 | 0.000000 |
| Horseshoe Crab Nursery Grounds | Tung Chung Bay | SR39 | a | 2100 | 0.000000 | 0.000000 |

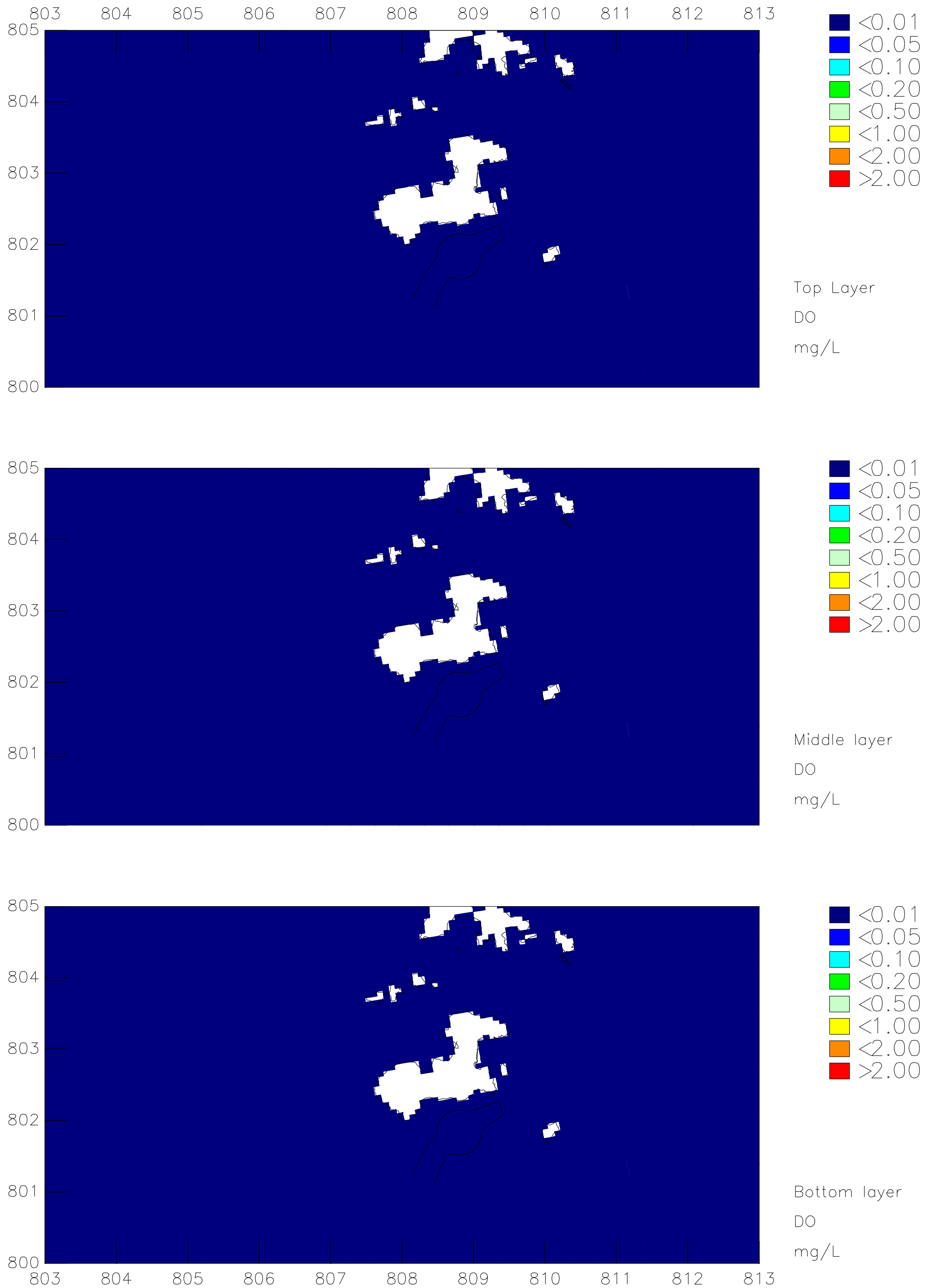
*Table D.3 Elutriate Results at South Soko*

| Parameters | | Unit | Reporting Limit | Shek Pik Shore Approach | Eastern South Soko | | Southern South Soko | Fan Lau Crossing | | Lantau Channel | | West Lantau | | Lung Kwu Chau and Sha Chau Marine Park | | | | Urmston Road Crossing | | | | Black Point Shore Approach | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **GV34** | **GV43** | **GV44** | **GV30** | **CP18** | **DC22** | **GV19** | **GV18** | **GV16** | **GV17** | **GSH12** | **GSH13** | **GSH14** | **GSH15** | **GSH8** | **GSH9** | **GSH10** | **GSH11** | **GSH6** | **GSH7** |
| **Heavy Metals** | Cadmium (Cd) | ug/L | 0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| | Chromium (Cr) | ug/L | 5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 | <5 |
| | Copper (Cu) | ug/L | 1 | 2.6 | 2.7 | 2.7 | 2.6 | 2.4 | 2.7 | 2.8 | 2.6 | 2.6 | 2.3 | 2.1 | 2.9 | 2.2 | 2.4 | 2.3 | 2.5 | 2.2 | 2.2 | 2.5 | 1.9 |
| | Nickel (Ni) | ug/L | 2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| | Lead (Pb) | ug/L | 2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 |
| | Zinc (Zn) | ug/L | 10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 | <10 |
| | Mercury (Hg) | ug/L | 0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | 0.313 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 |
| | Arsenic (As) | ug/L | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| | Silver (Ag) | ug/L | 1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 | <1 |
| **Ammonia (Un-ionized)** | | mg-N/L | 0.01 | 0.03 | 0.03 | 0.14 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | 0.03 | 0.02 | <0.01 | <0.01 | <0.01 | 0.01 | 0.16 | 0.01 | 0.01 | 0.02 | <0.01 | <0.01 |
| **TKN** | | mg-N/L | 0.1 | 0.9 | 2.1 | 9.3 | 0.8 | <0.1 | <0.1 | 0.2 | <0.1 | 2.2 | 1.4 | 1 | 0.2 | 0.7 | 1 | 7 | 3.8 | 3 | 0.8 | 0.3 | 0.4 |
| **Nitrate** | | mg-N/L | 0.05 | 0.22 | 0.18 | 0.1 | 0.5 | 0.85 | 0.27 | 0.31 | 0.3 | 0.38 | 0.41 | 0.46 | 0.82 | 0.68 | 0.35 | 0.26 | 0.43 | 0.62 | 0.74 | 0.84 | 0.5 |
| **Nitrite** | | mg-N/L | 0.05 | 0.09 | 0.05 | 0.06 | 0.273 | 0.2 | 0.02 | 0.09 | 0.08 | 0.06 | 0.08 | 0.47 | 0.53 | 0.17 | 0.05 | 0.06 | 0.89 | 0.47 | 0.14 | 0.27 | 0.22 |
| **Ammoniacal Nitrogen** | | mg- N/L | 0.1 | 0.62 | 0.88 | 3.9 | 0.54 | <0.1 | <0.1 | 0.15 | <0.1 | 0.96 | 0.63 | 0.68 | 0.15 | 0.47 | 0.43 | 4.7 | 2.5 | 2 | 0.57 | 0.21 | 0.25 |
| **Ortho-Phosphate** | | mg-P/L | 0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | <0.05 | 0.11 | <0.05 | <0.05 |
| **Total Phosphorous** | | mg-P/L | 0.1 | 0.22 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | 0.15 | 0.11 | <0.1 |
| **PAHs (Low Molecular Weight)** | Naphthalene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Acenaphtylene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Acenaphtene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Fluorene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Phenanthrene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Anthracene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **PAHs (High Molecular Weight)** | Benzo(a)anthracene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Benzo(a)pyrene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Chrysene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Dibenz(ah)anthracene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Fluoranthene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Pyrene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Benzo(b)fluoranthene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Benzo(k)fluoranthene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Indeno(1,2,3-cd)pyrene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| | Benzo(ghi)perylene | ug/L | 0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| **PCB** | PCB 8 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 18 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 28 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 44 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 52 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 66 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 77 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 101 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 105 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 118 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 126 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 128 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 138 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 153 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

| Parameters | | Unit | Reporting Limit | Shek Pik Shore Approach | Eastern South Soko | | Southern South Soko | Fan Lau Crossing | | Lantau Channel | | West Lantau | | Lung Kwu Chau and Sha Chau Marine Park | | | | Urmston Road Crossing | | | | Black Point Shore Approach | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **GV34** | **GV43** | **GV44** | **GV30** | **CP18** | **DC22** | **GV19** | **GV18** | **GV16** | **GV17** | **GSH12** | **GSH13** | **GSH14** | **GSH15** | **GSH8** | **GSH9** | **GSH10** | **GSH11** | **GSH6** | **GSH7** |
| | PCB 169 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 170 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 180 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | PCB 187 | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Total PCB | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| **Tributyltin (TBT)** | | ug/L | 0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 | <0.015 |
| **Chlorinated Pesticides** | Alpha-BHC | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Beta BHC | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Gamma BHC | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Delta-BHC | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Heptachlor | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Aldrin | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Heptachlor epoxide | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Alpha-Endosulfan | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | p, p'-DDT | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | p, p'-DDD | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | p, p'-DDE | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |
| | Endosulfan sulfate | ug/L | 0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 | <0.01 |

Annex 6E

# Construction Phase Model Results - Wastewater Discharges

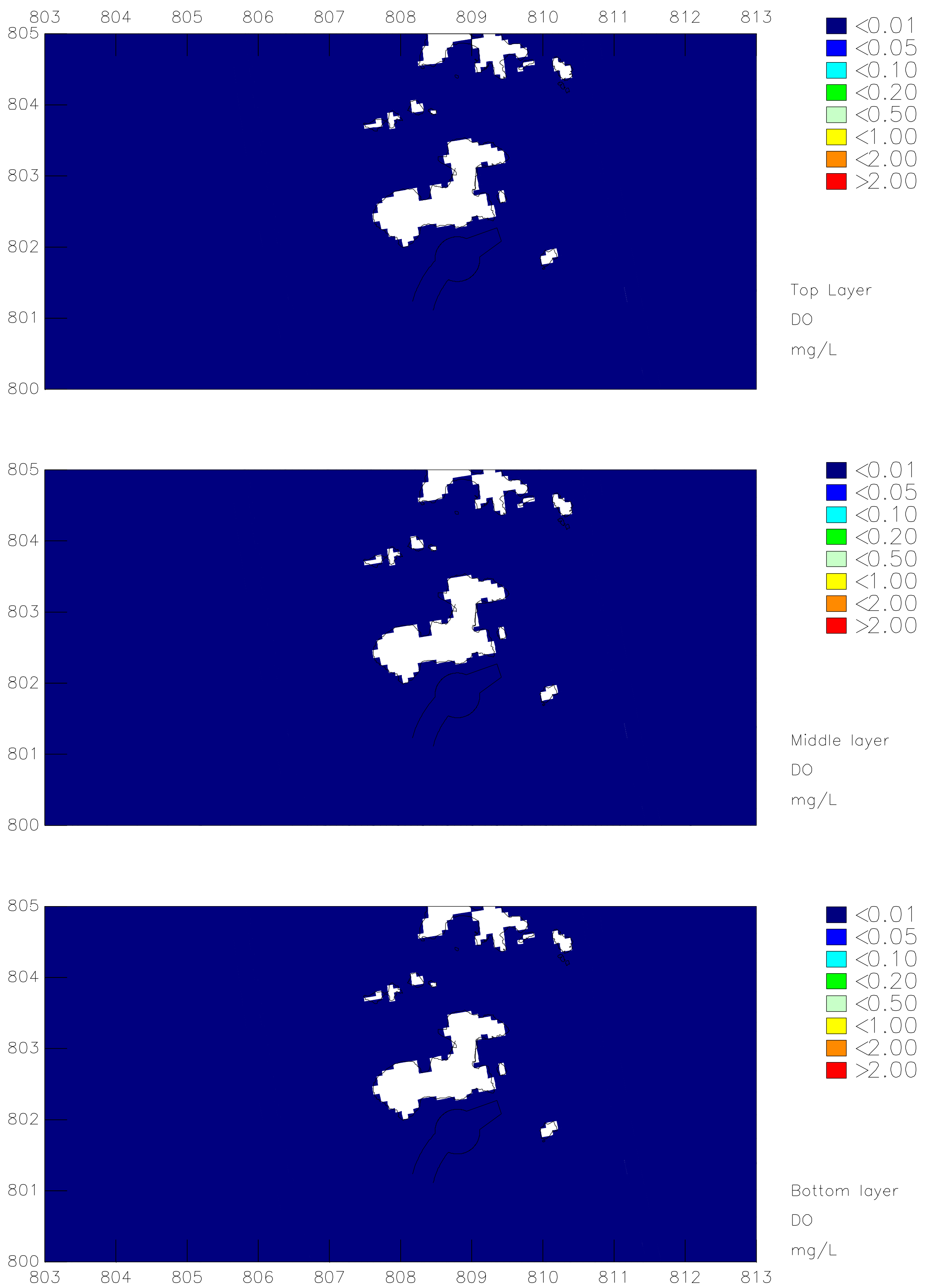



DO (mg/L) maximum decrease
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E01




DO (mg/L) mean decrease

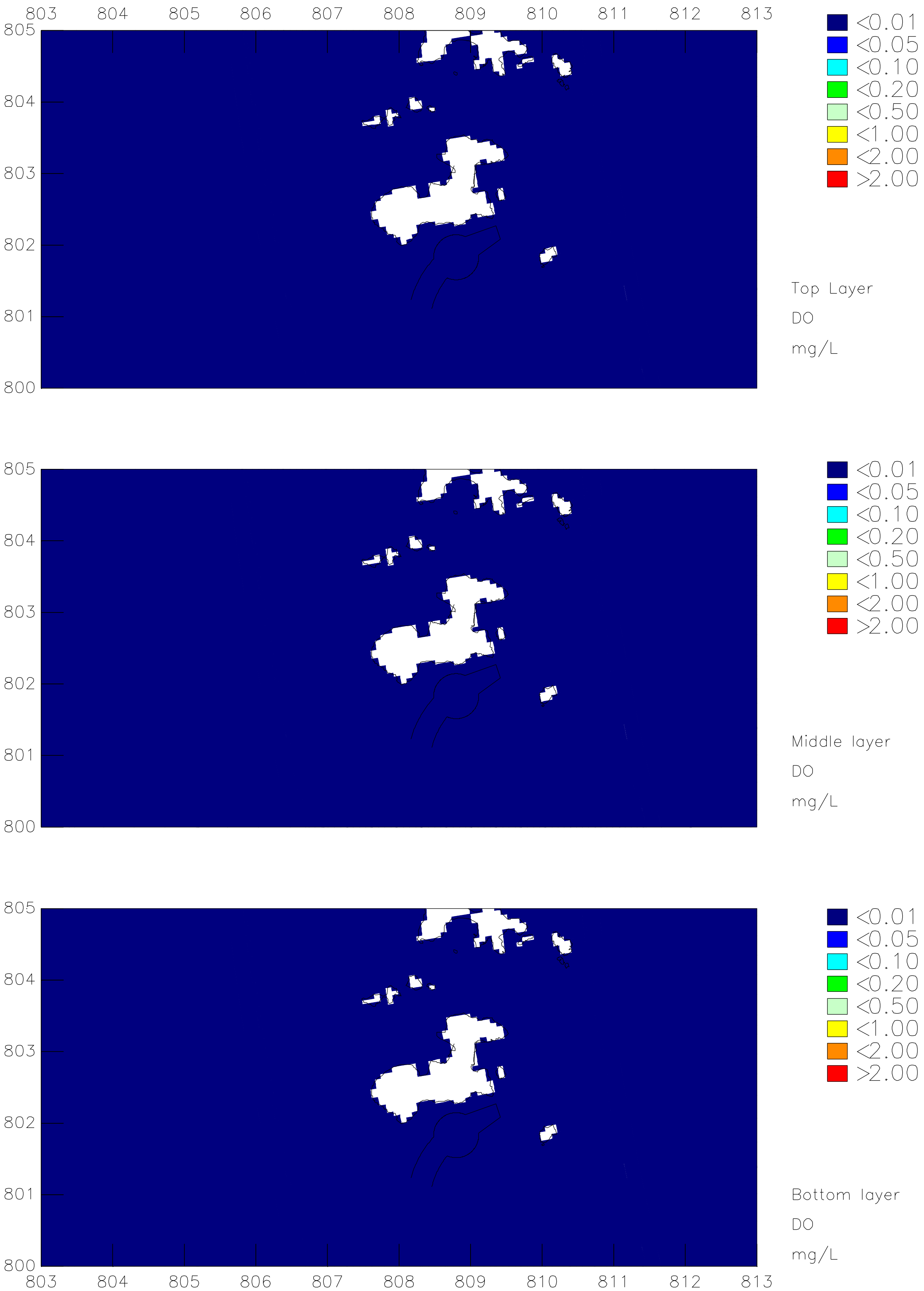
South Soko Sewage emission – Construction

Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E02

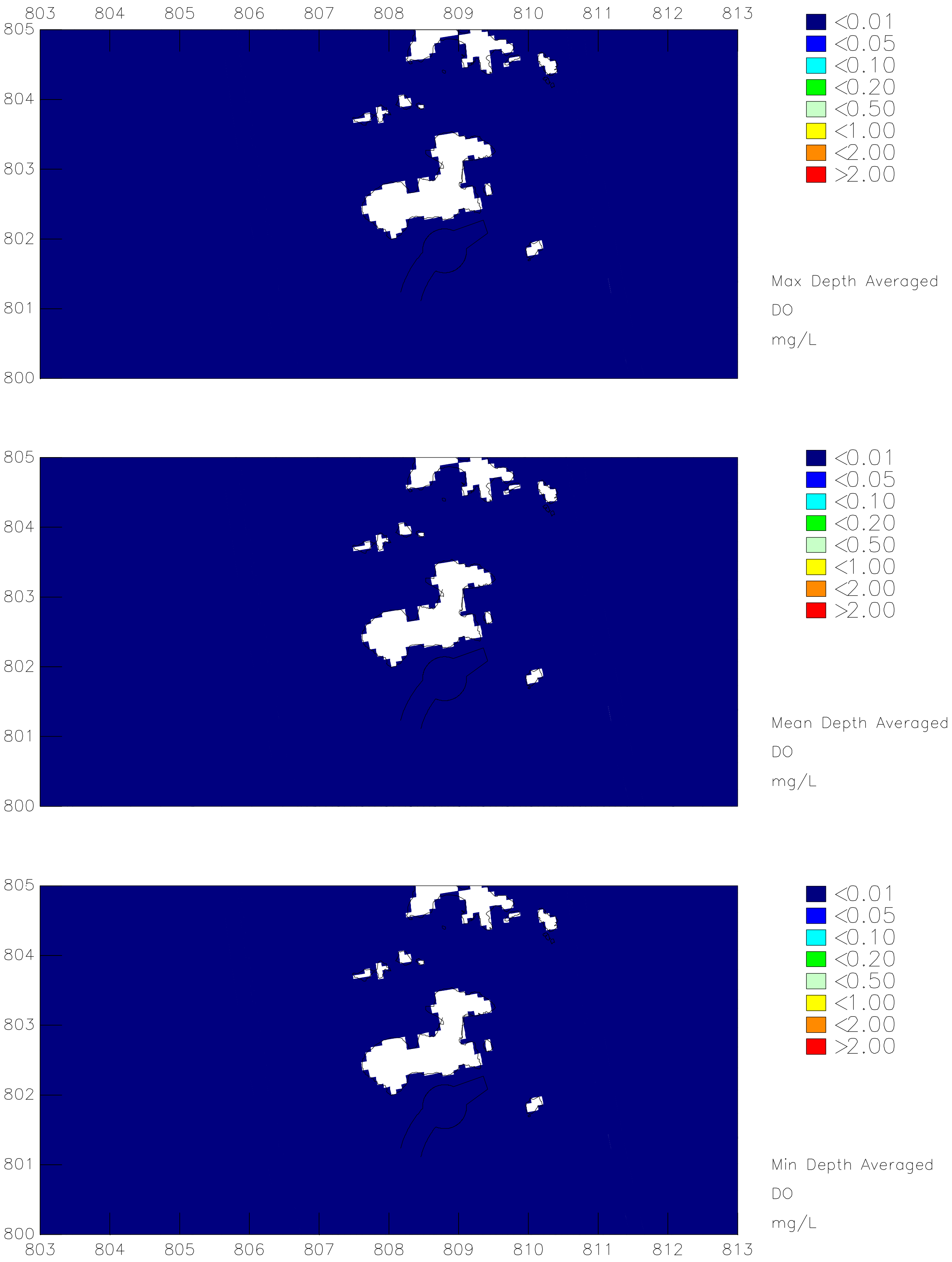



DO (mg/L) minimum decrease
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E03

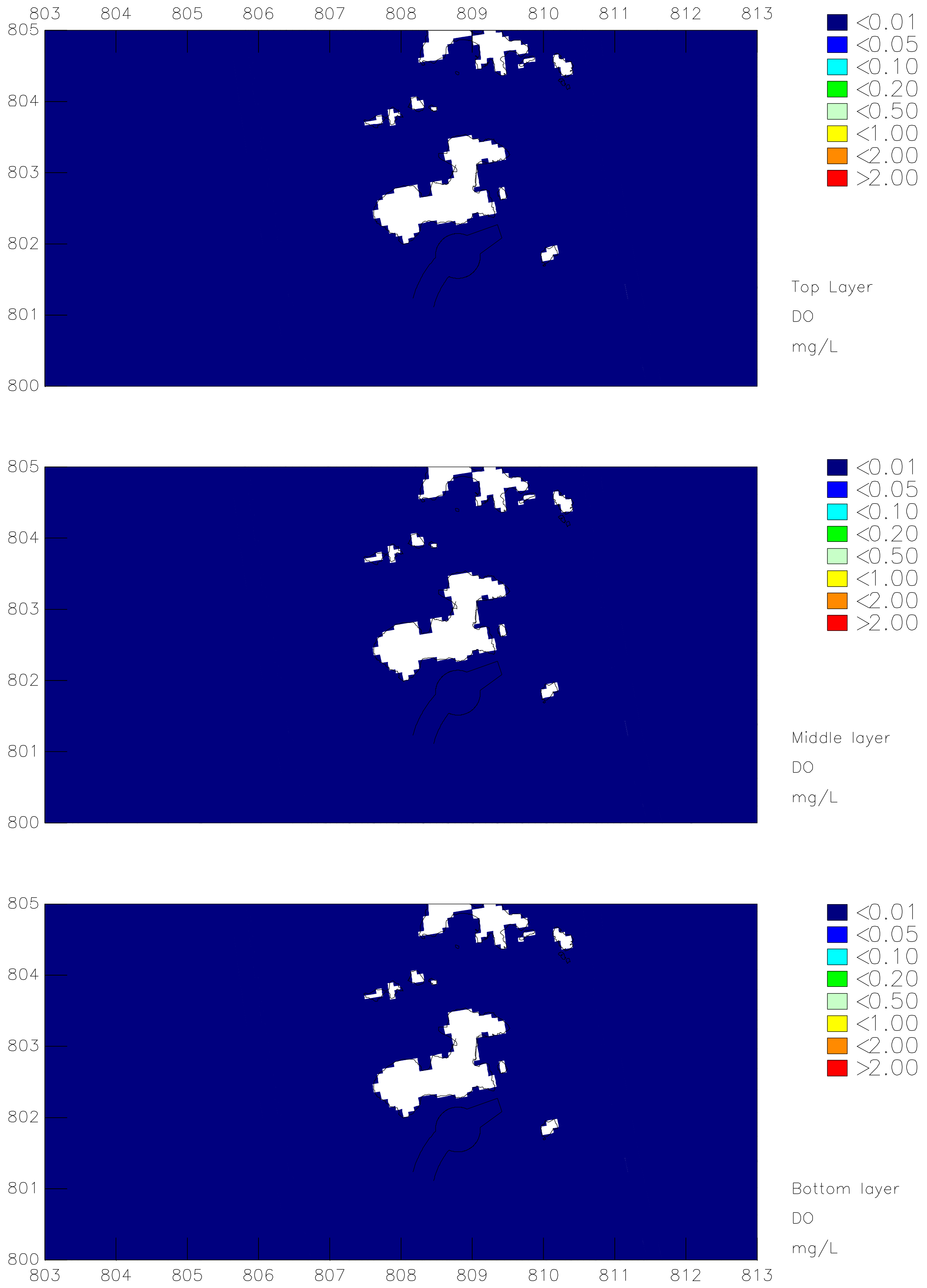



DO (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged decrease

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E04

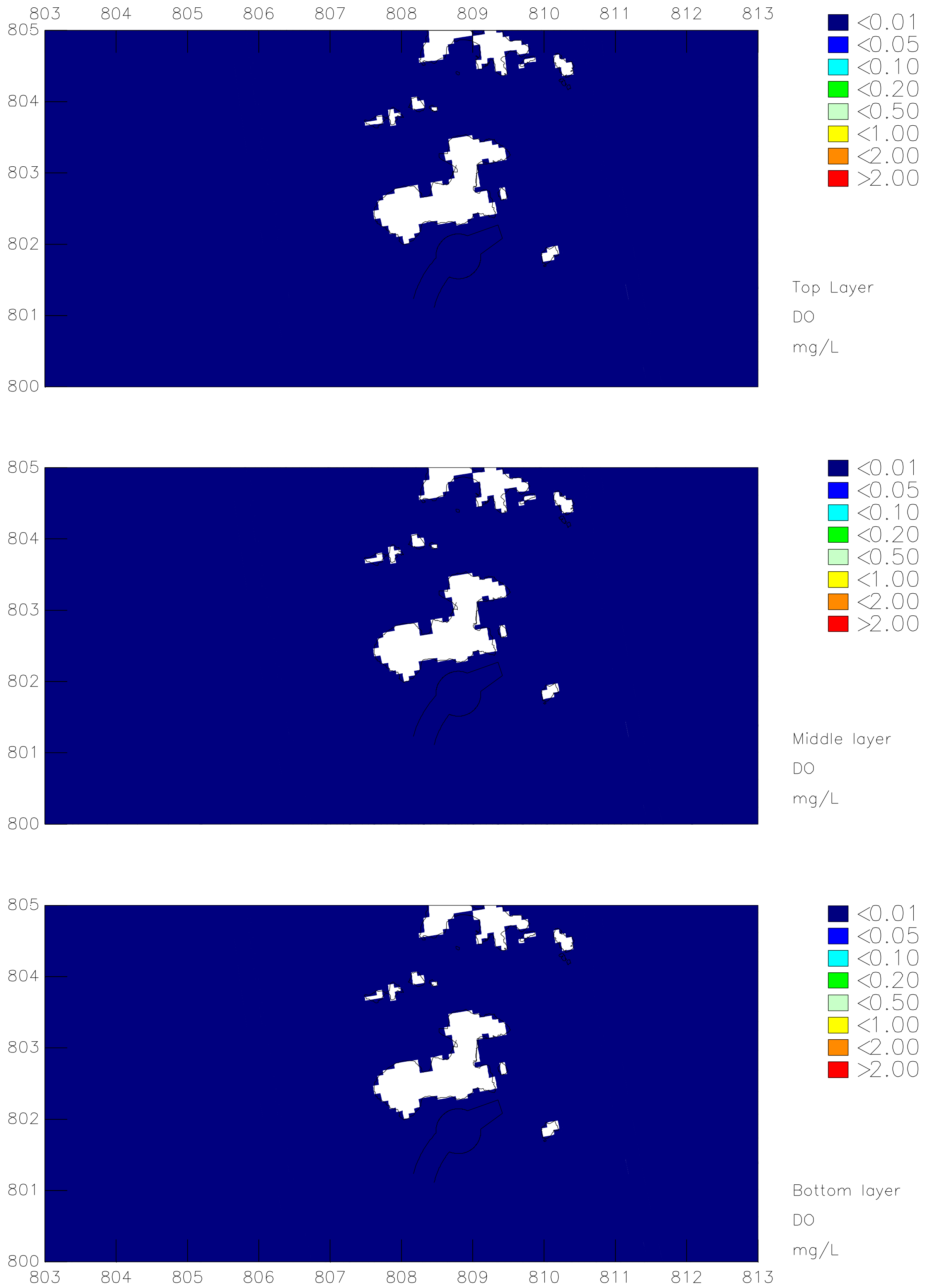



DO (mg/L) maximum decrease
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E05

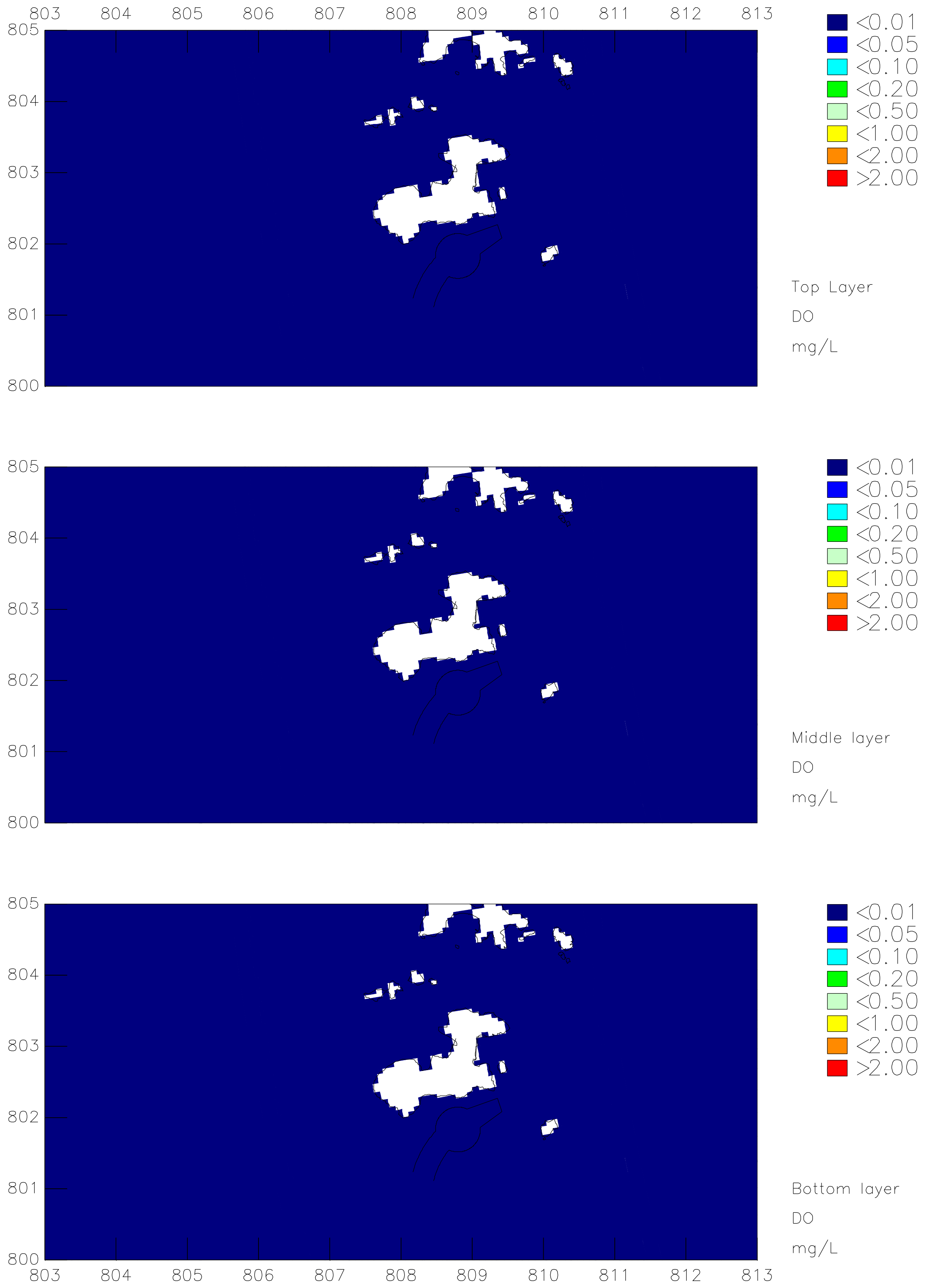



DO (mg/L) mean decrease
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E06

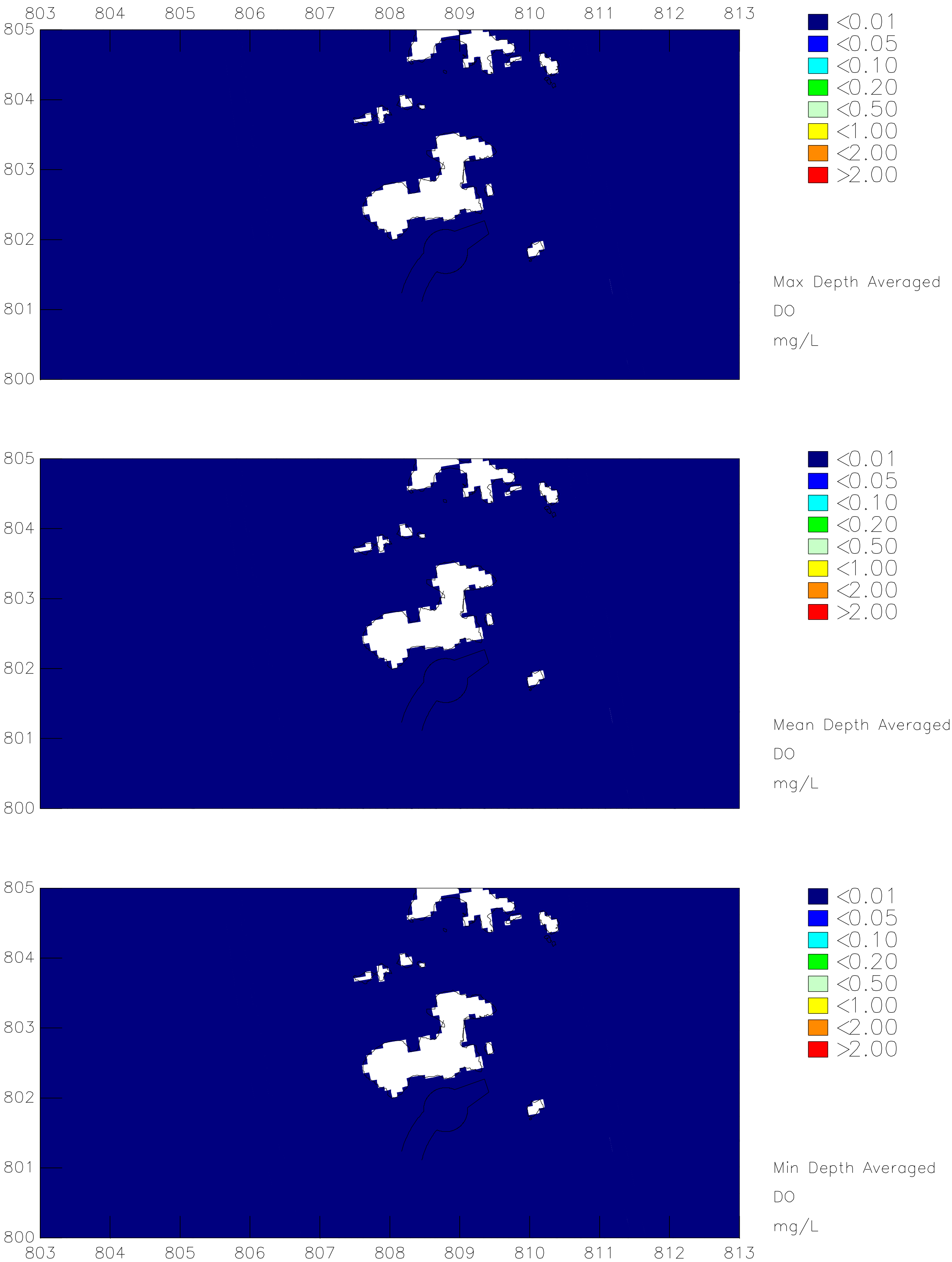



DO (mg/L) minimum decrease
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

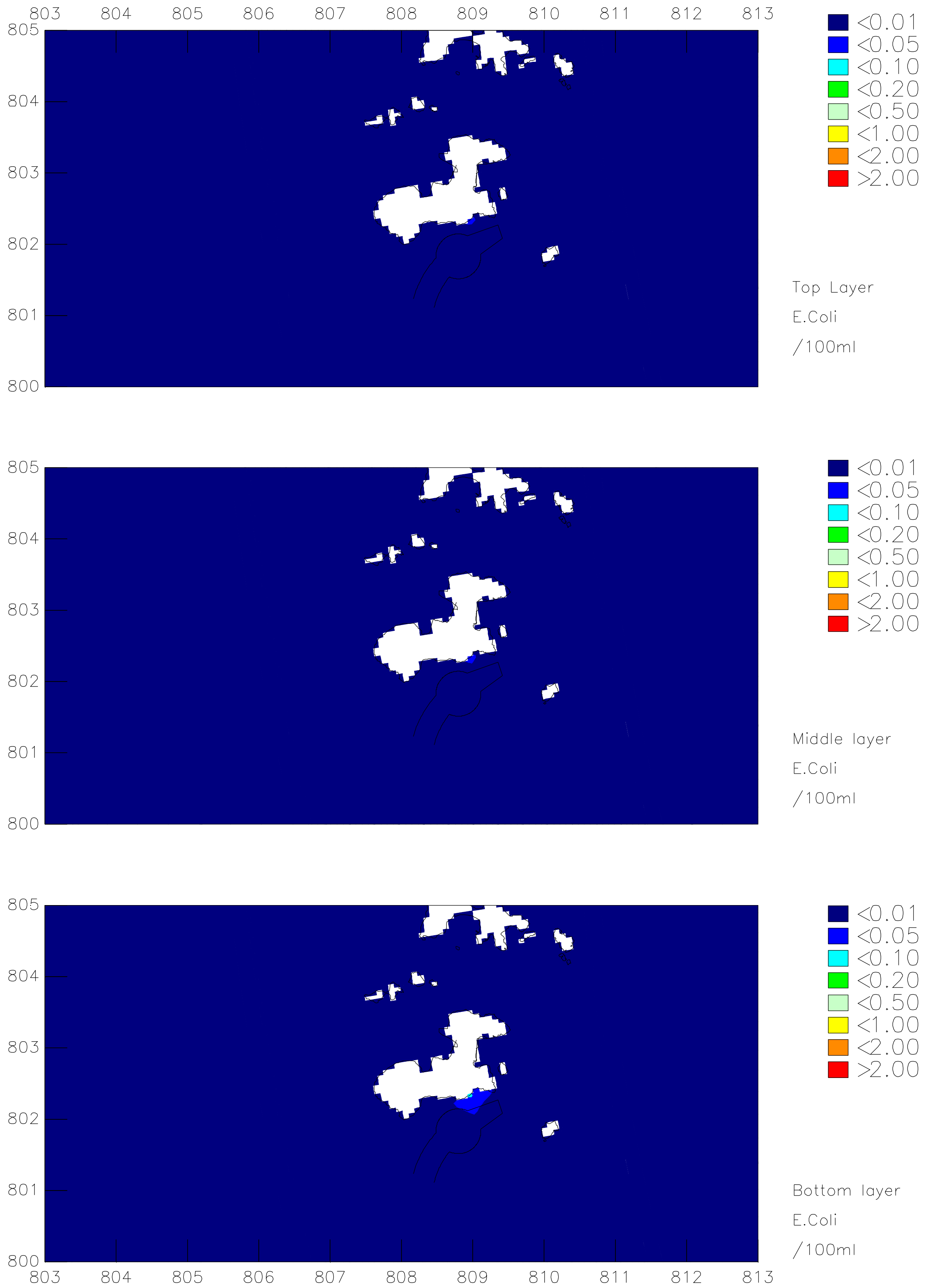
Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E07




| | | |
|---|---|---|
| DO (mg/L)<br>South Soko Sewage emission – Construction<br>Maximum, Mean and Minimum depth averaged decrease | Wet Season | |
| WL \| Delft Hydraulics – ERM | | Fig. SK_E08 |

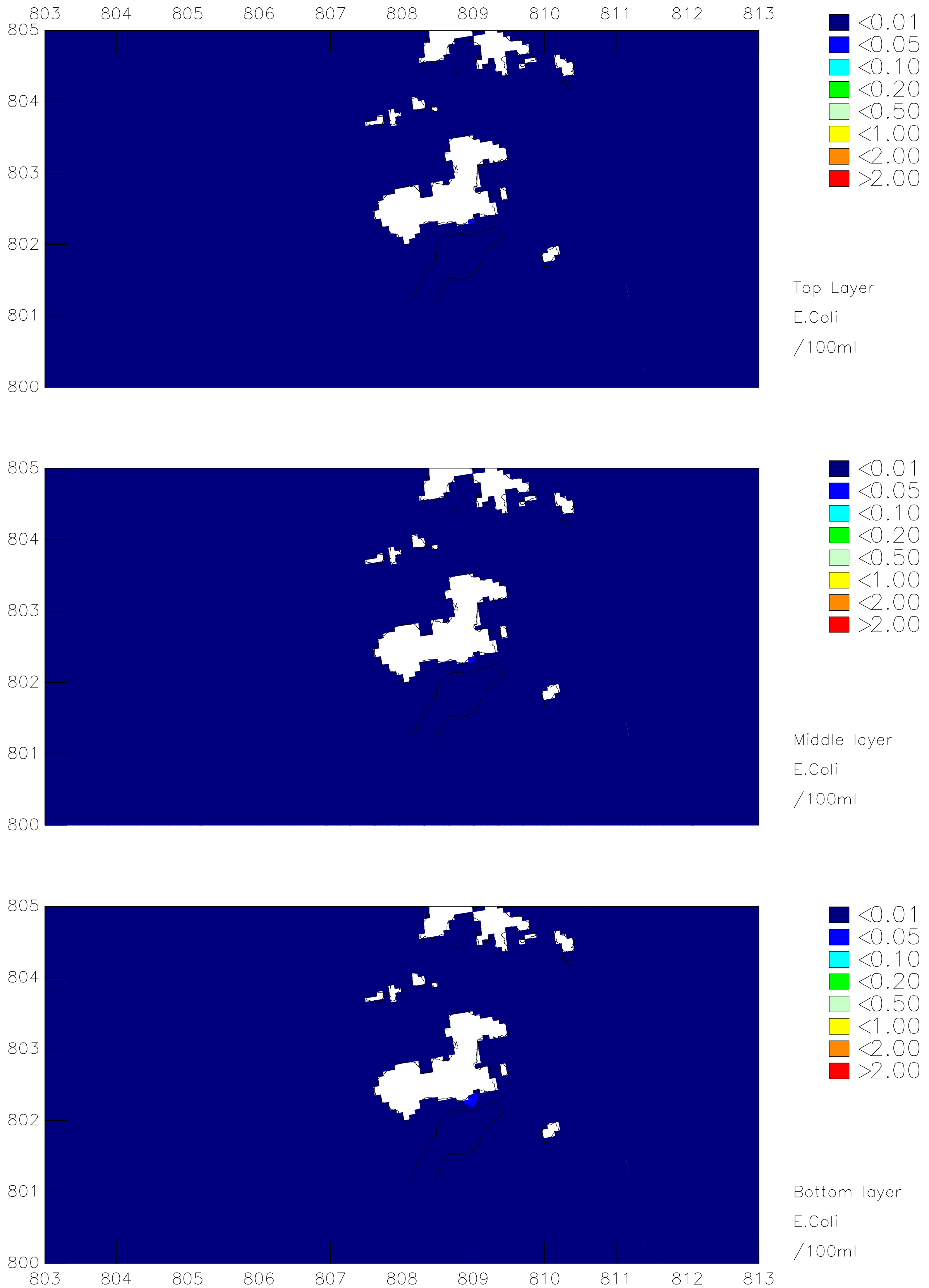



E.Coli (/100ml) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E09

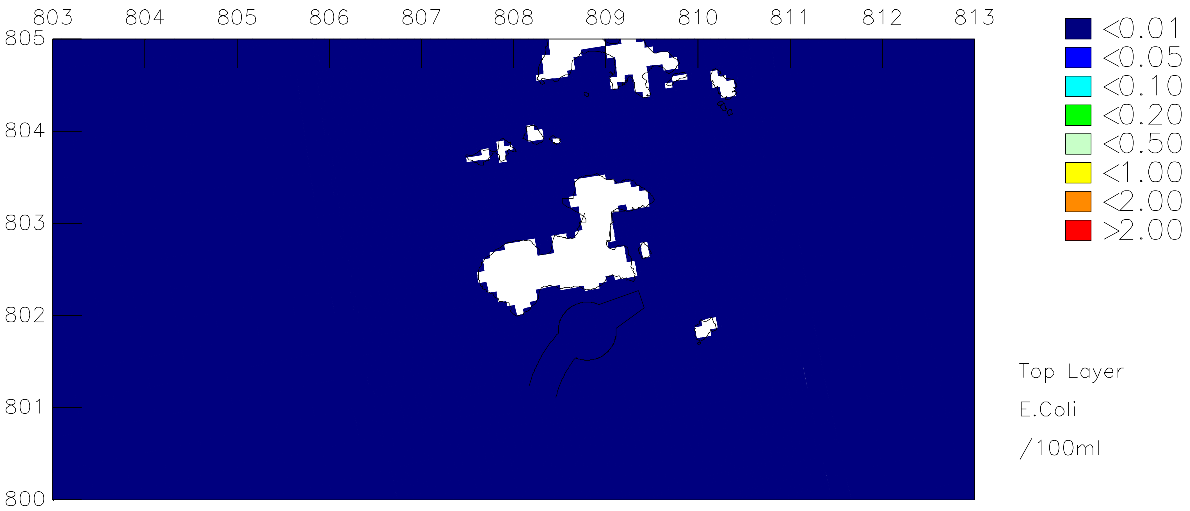


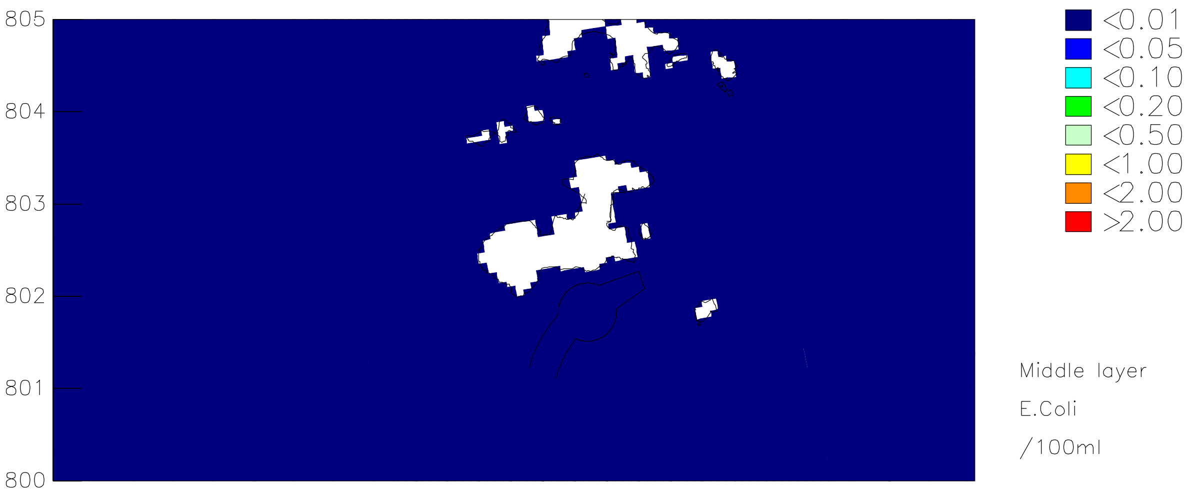

E.Coli (/100ml) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

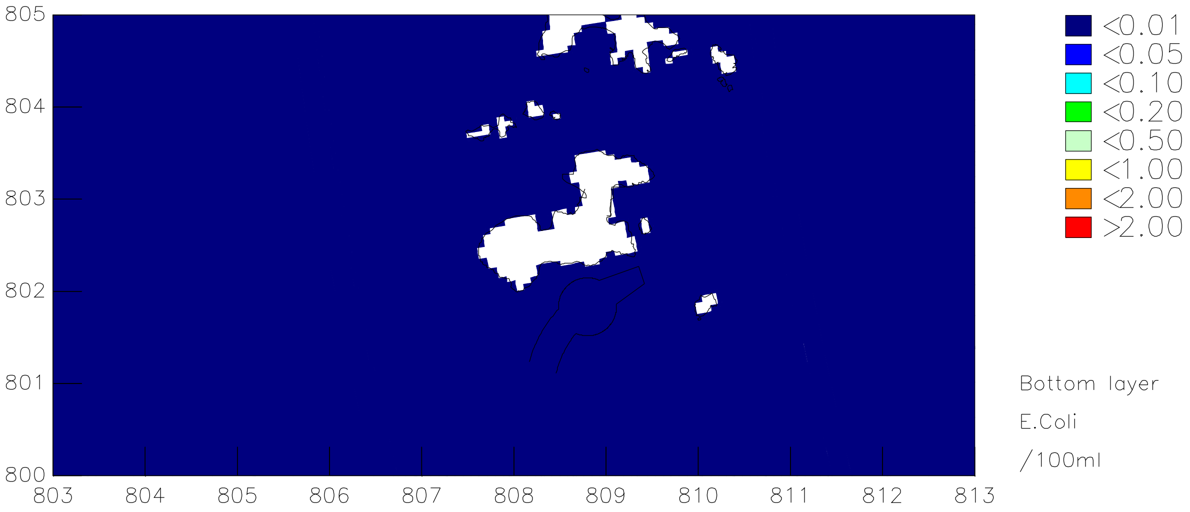
Dry Season

WL | Delft Hydraulics – ERM

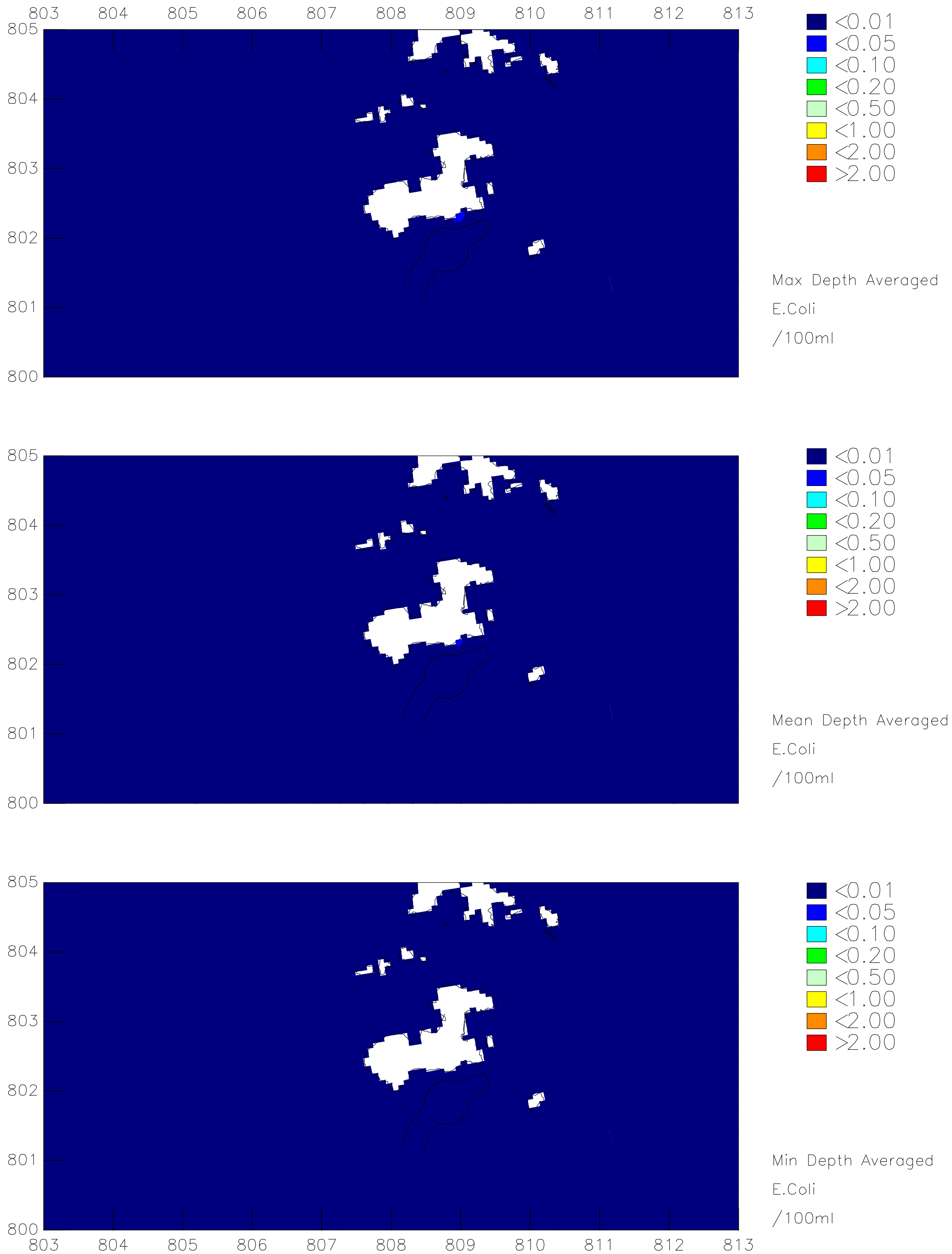
Fig. SK_E10




| | |
|---|---|
| E.Coli (/100ml) minimum increase<br>South Soko Sewage emission – Construction<br>Top, Middle and Bottom layer | Dry Season |
| WL \| Delft Hydraulics – ERM | Fig. SK_E11 |

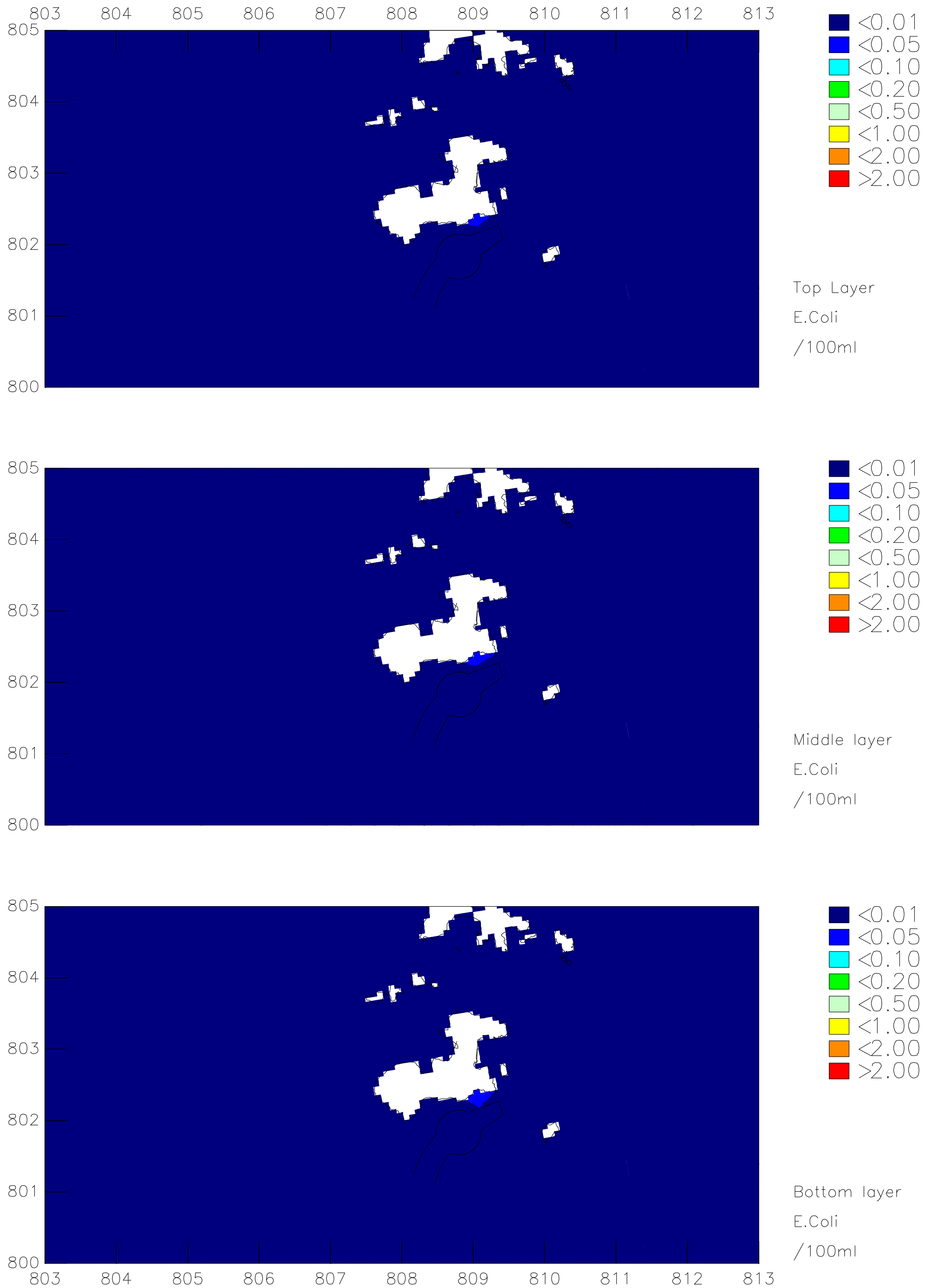



E.Coli (/100ml)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E12

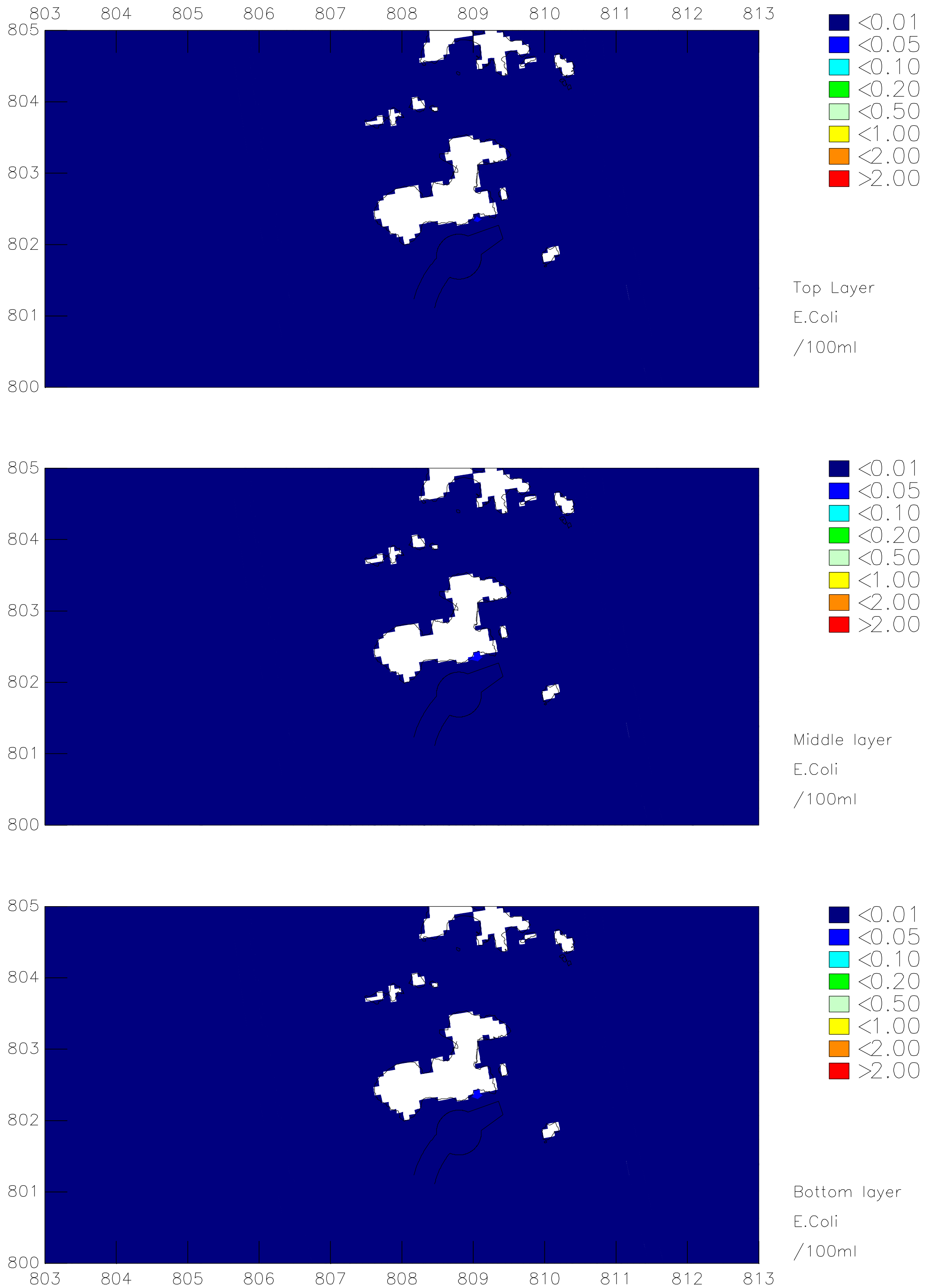



E.Coli (/100ml) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E13

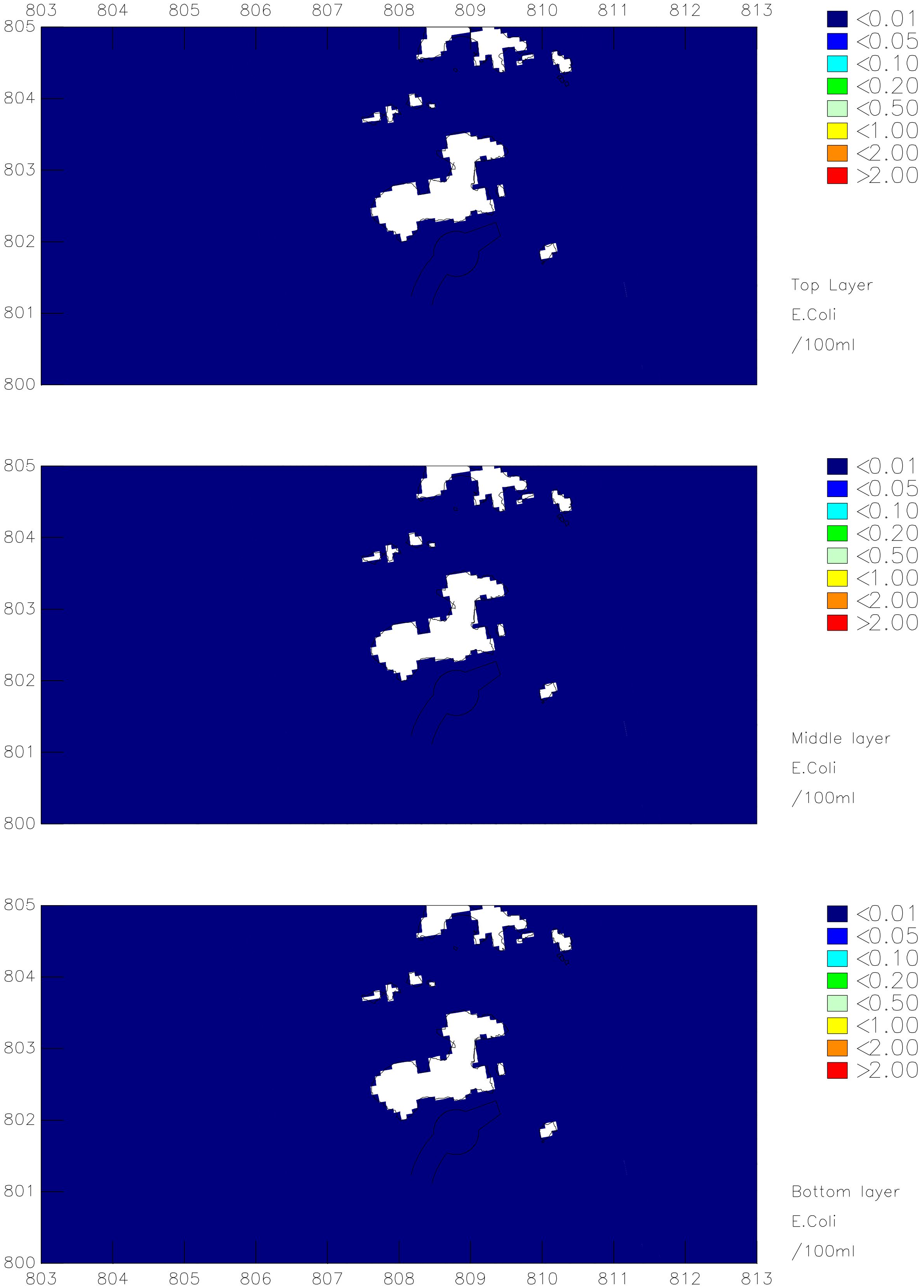



E.Coli (/100ml) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E14

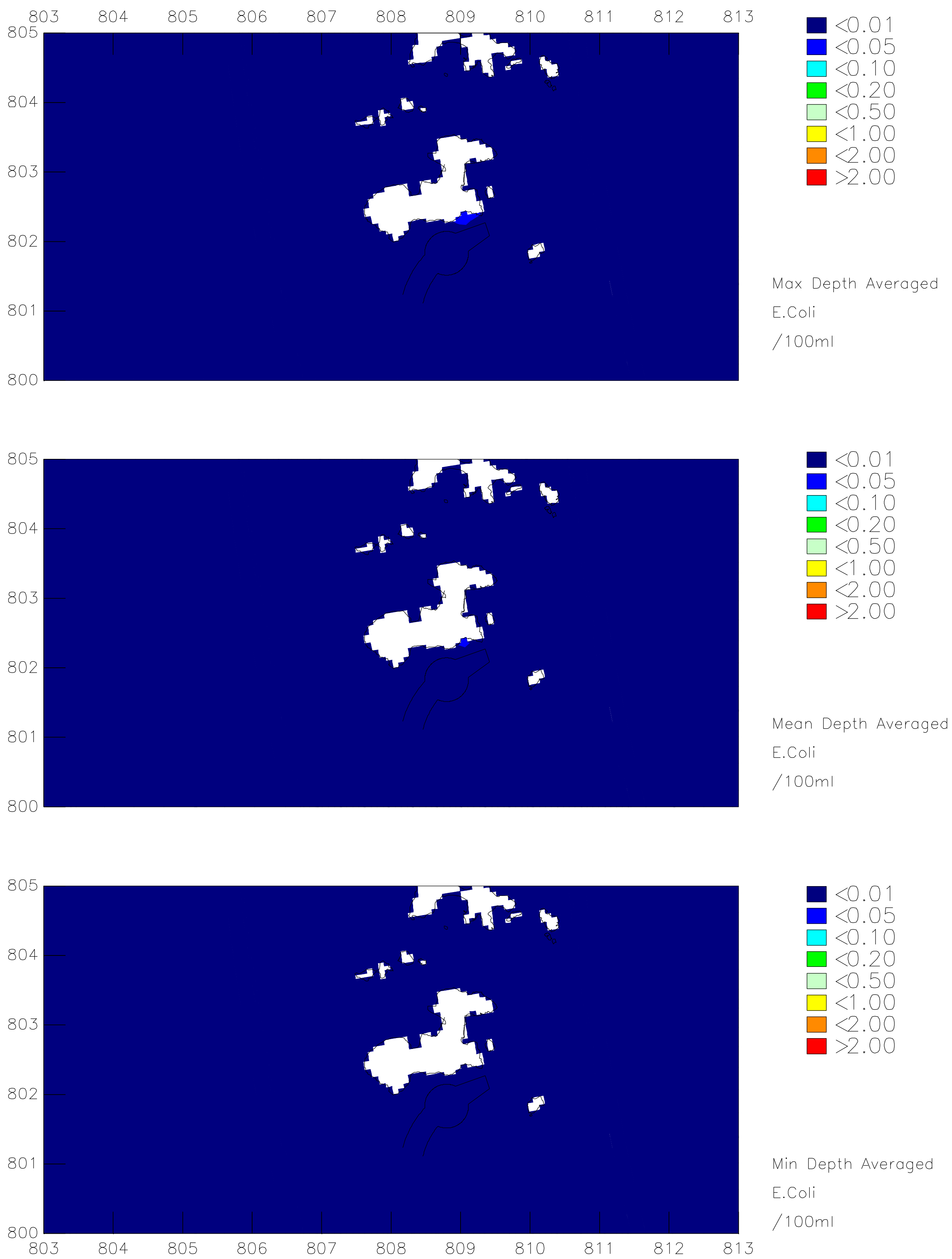



E.Coli (/100ml) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E15




E.Coli (/100ml)

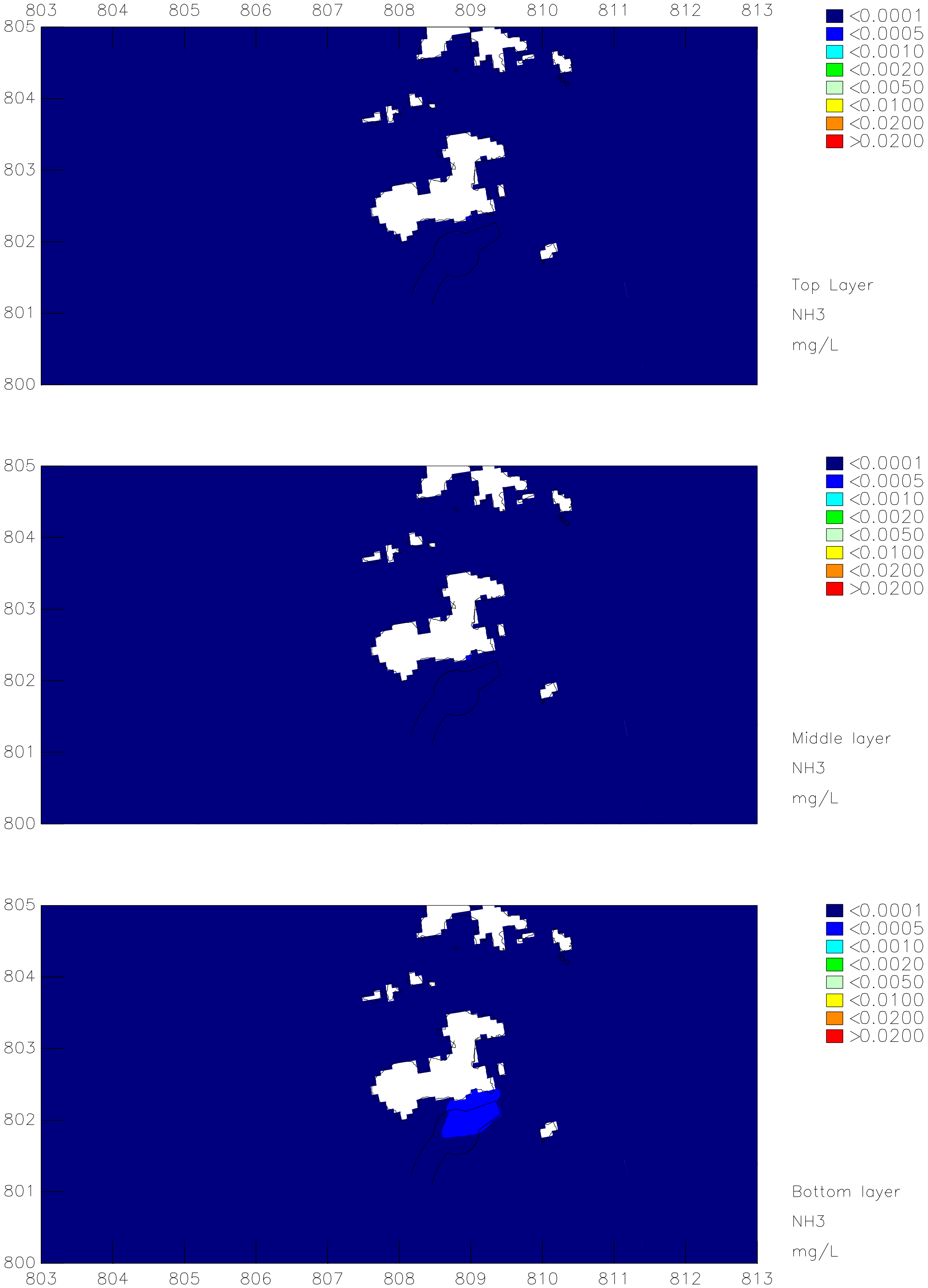
South Soko Sewage emission – Construction

Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E16

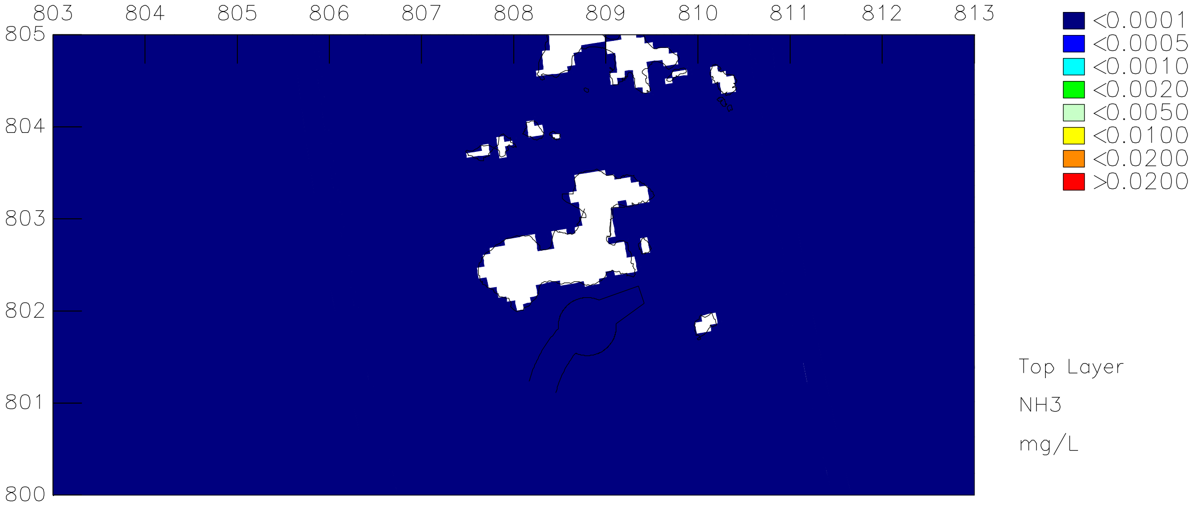


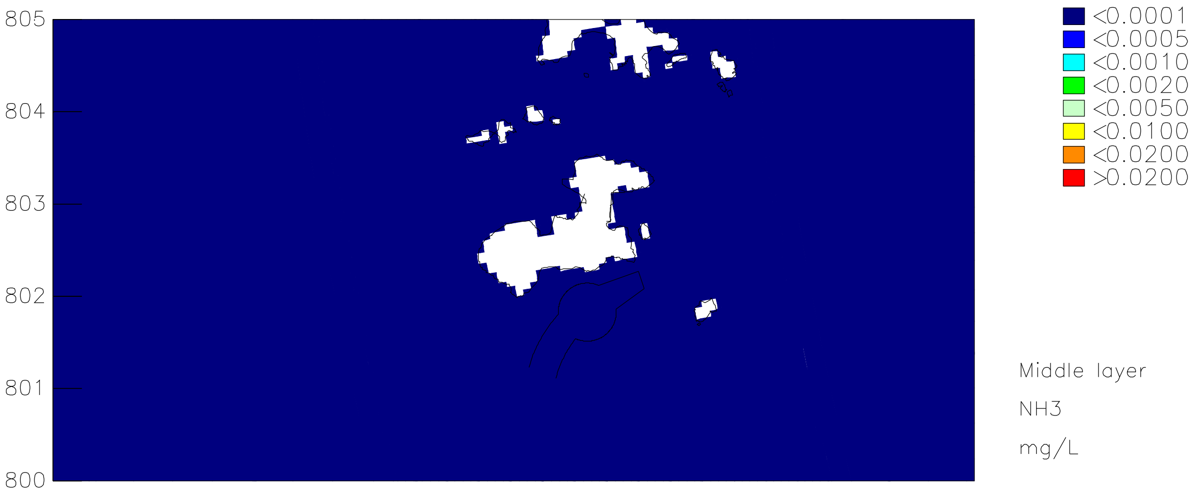

NH3 (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

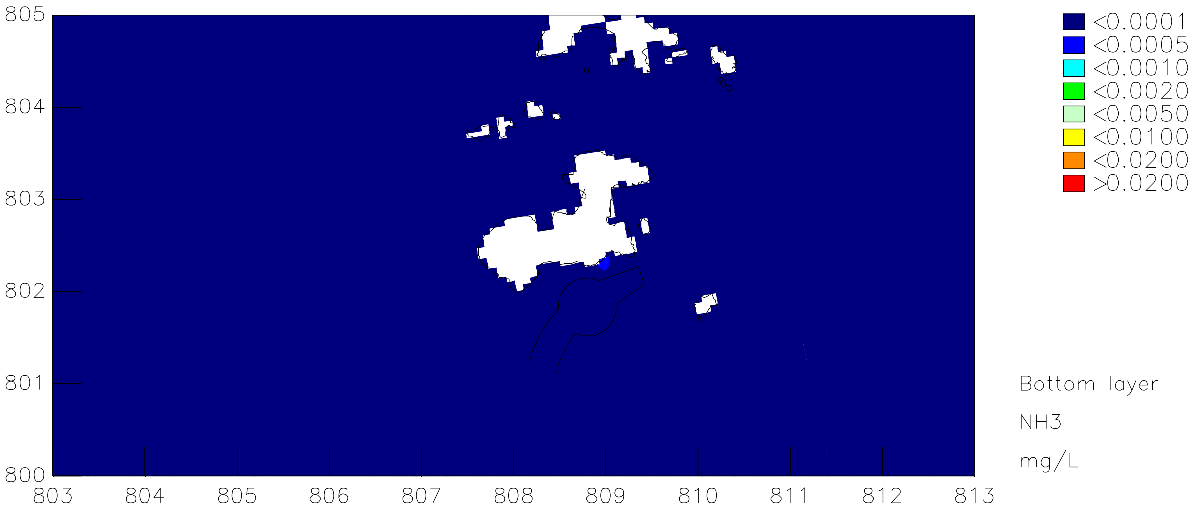
Dry Season

WL | Delft Hydraulics – ERM

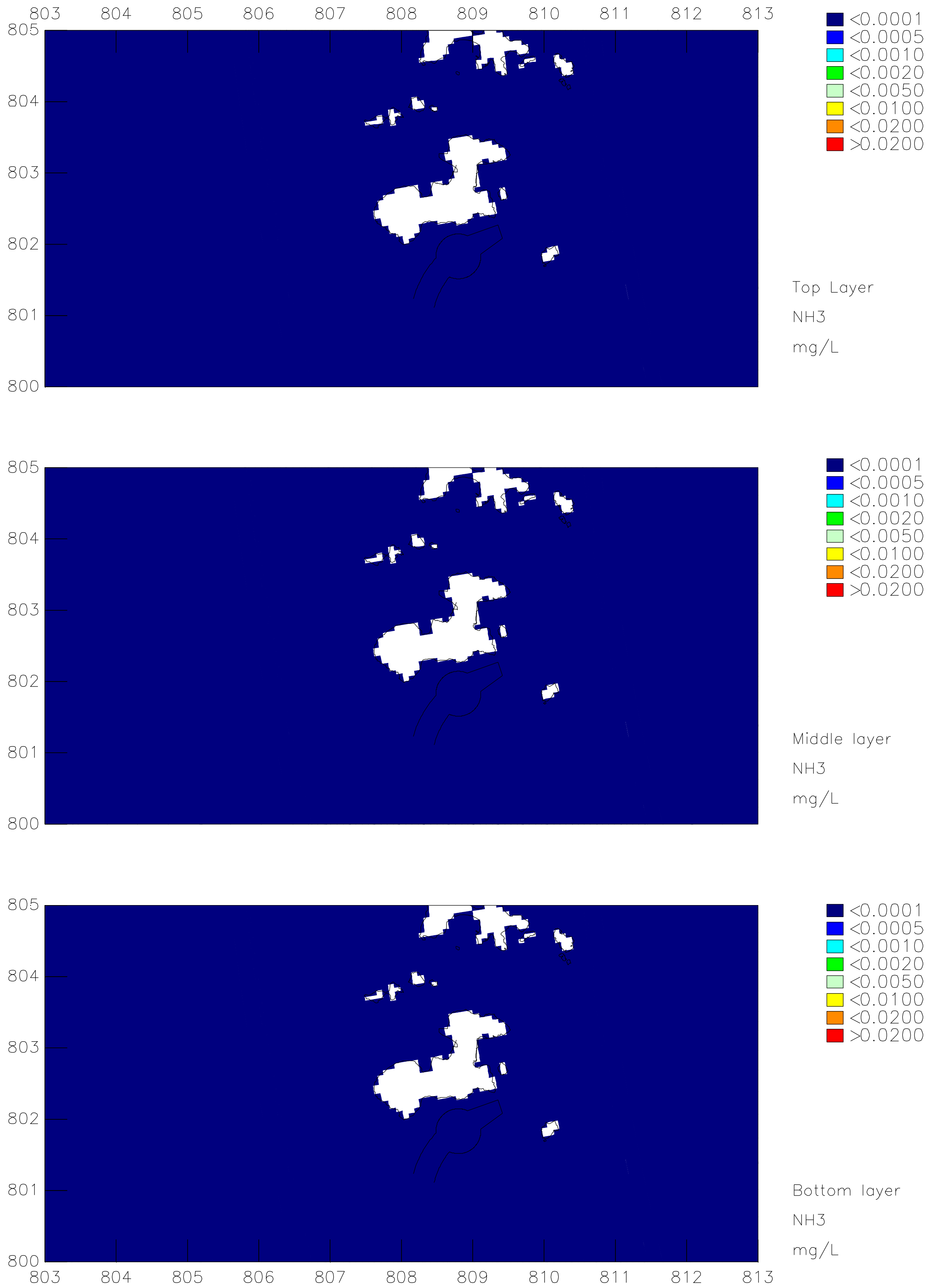
Fig. SK_E17




| | | |
|---|---|---|
| NH3 (mg/L) mean increase<br>South Soko Sewage emission – Construction<br>Top, Middle and Bottom layer | Dry Season | |
| WL \| Delft Hydraulics – ERM | | Fig. SK_E18 |

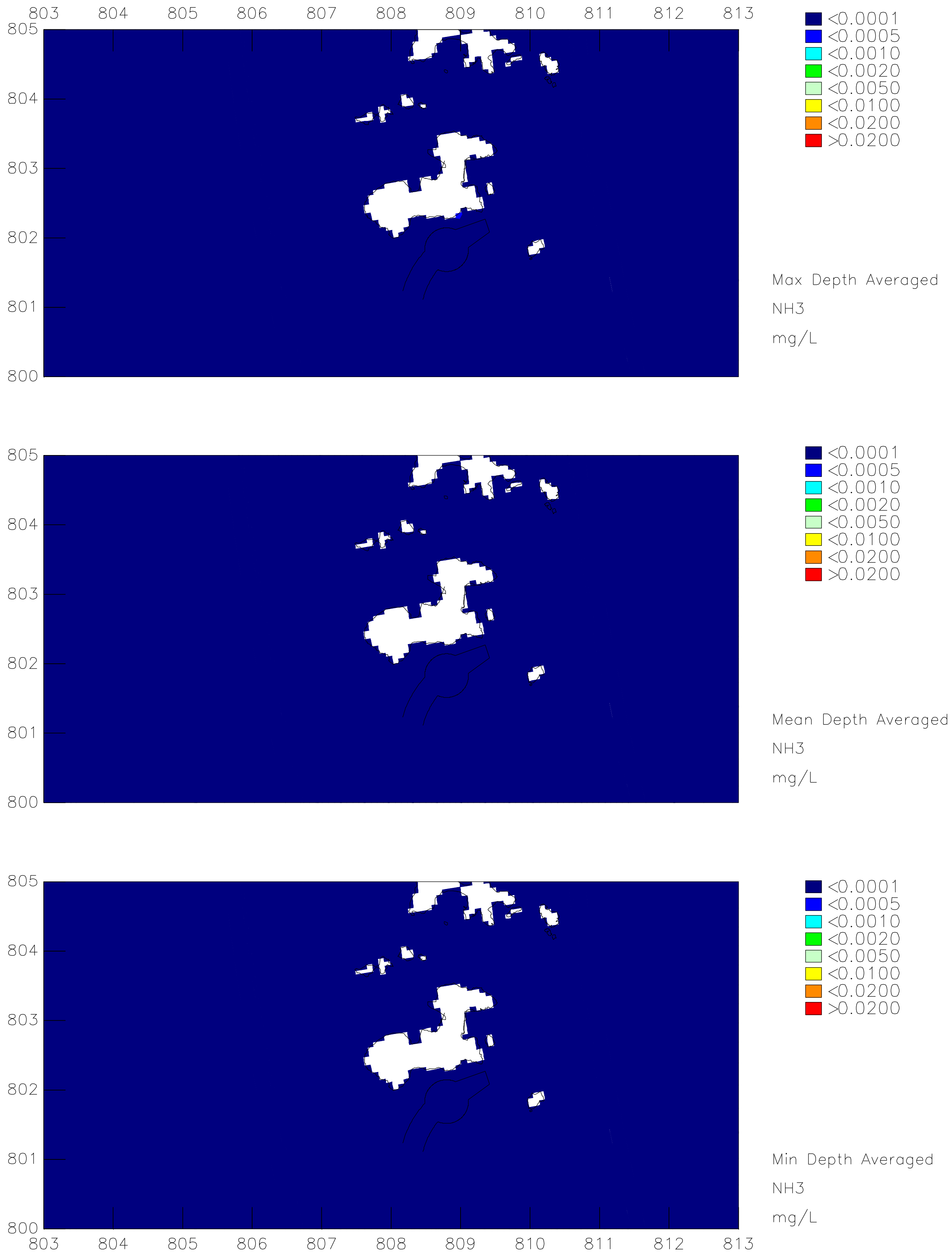



NH3 (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E19

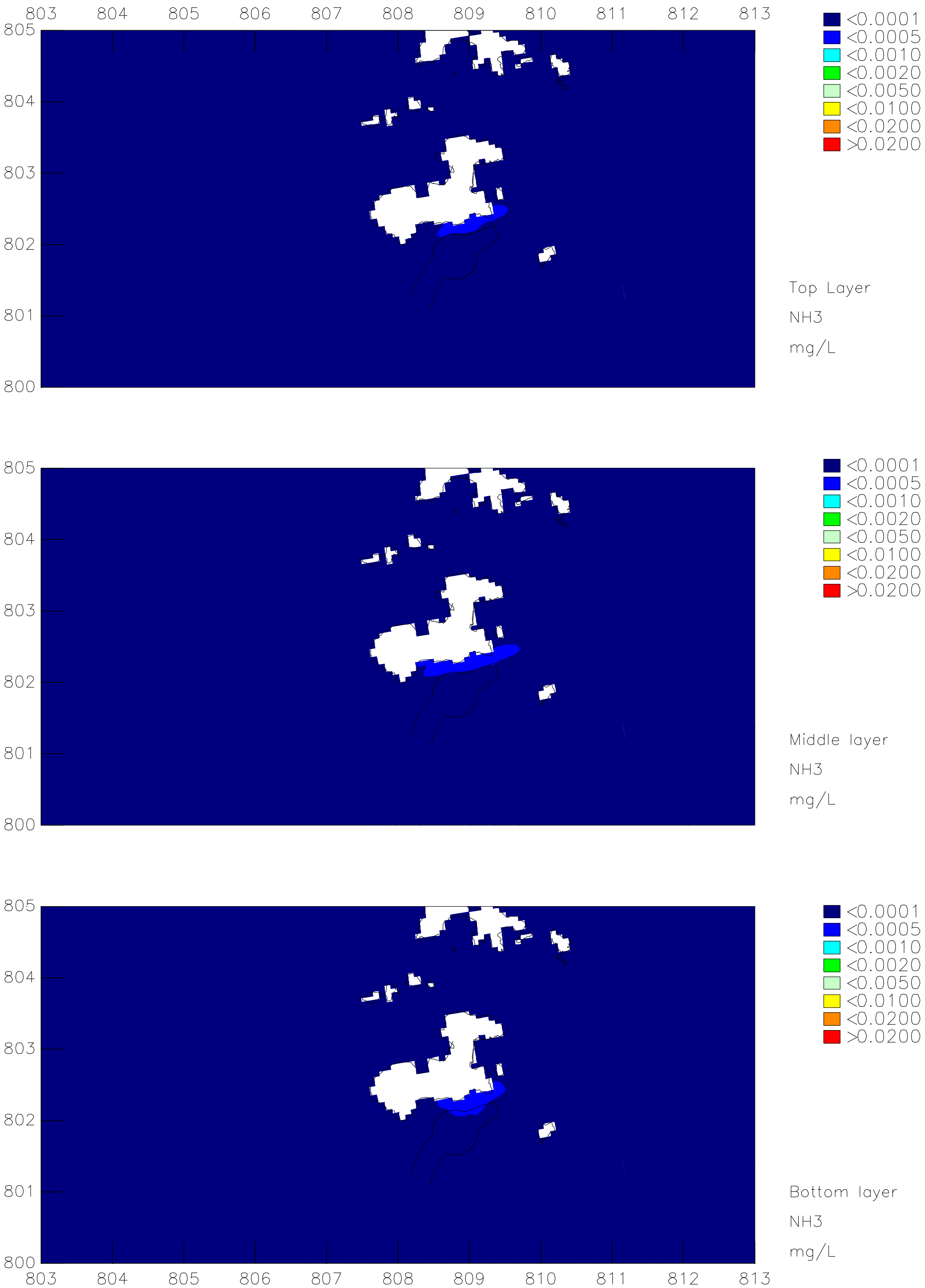



NH3 (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E20

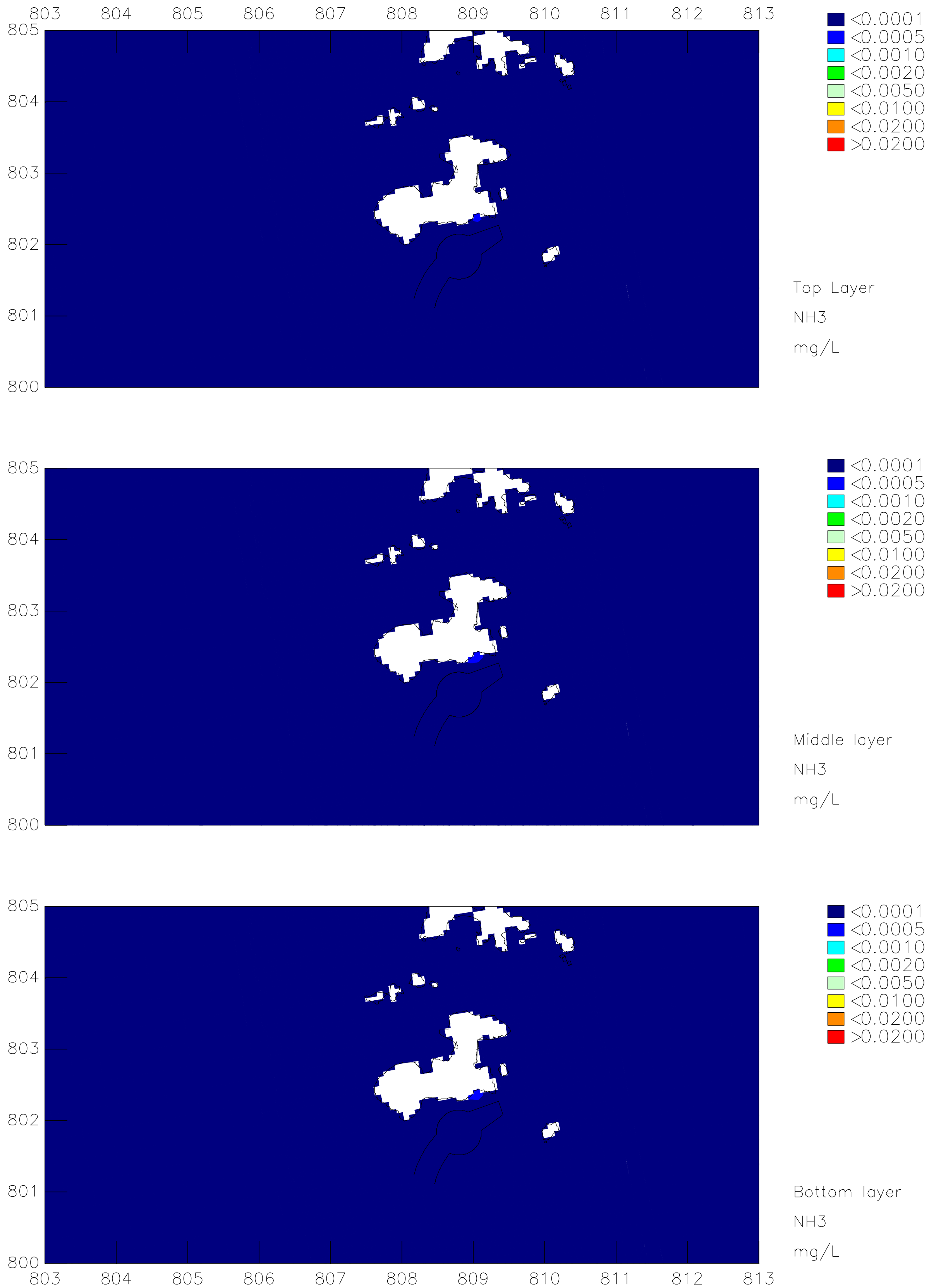



NH3 (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E21

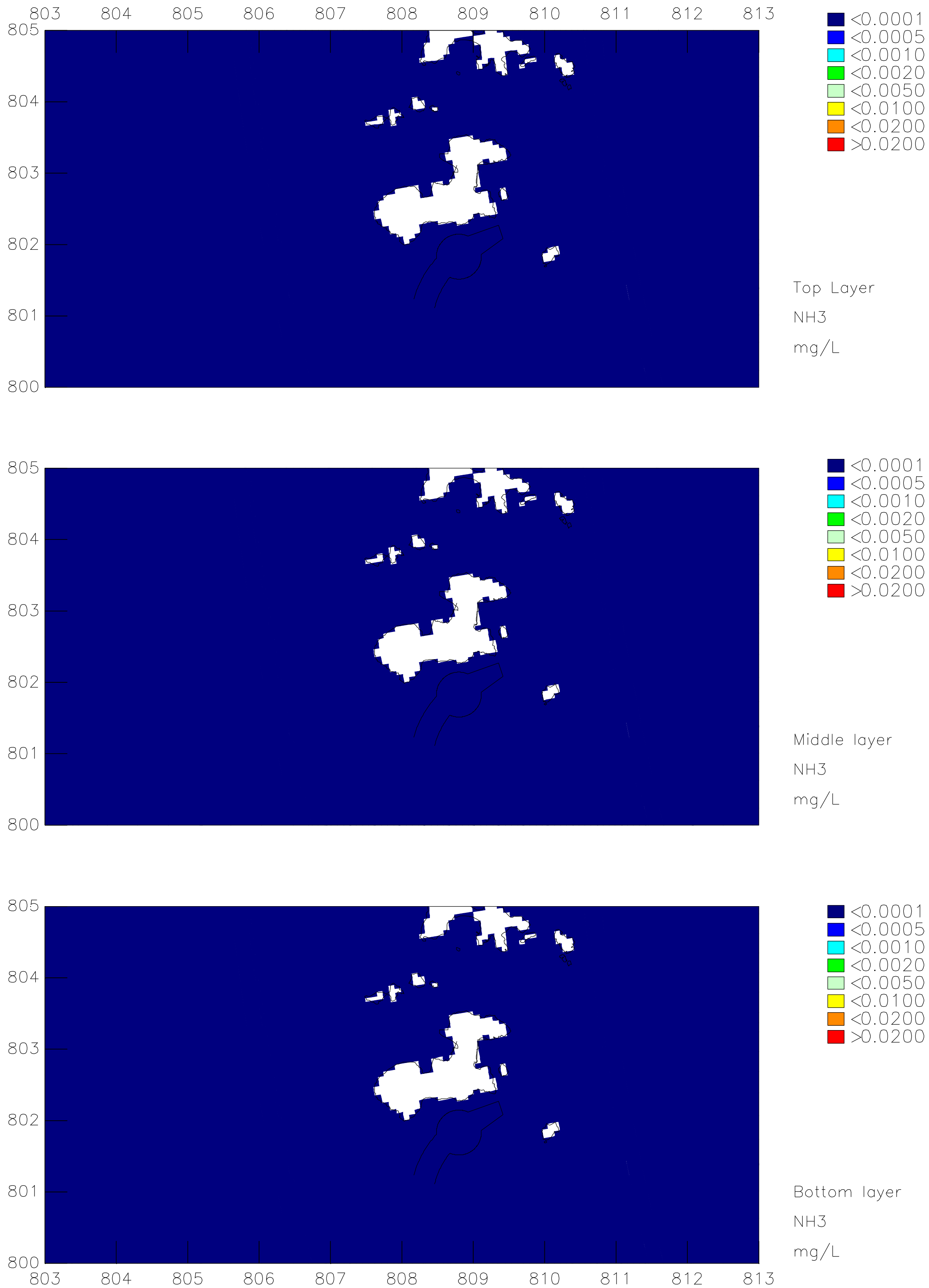



NH3 (mg/L) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E22

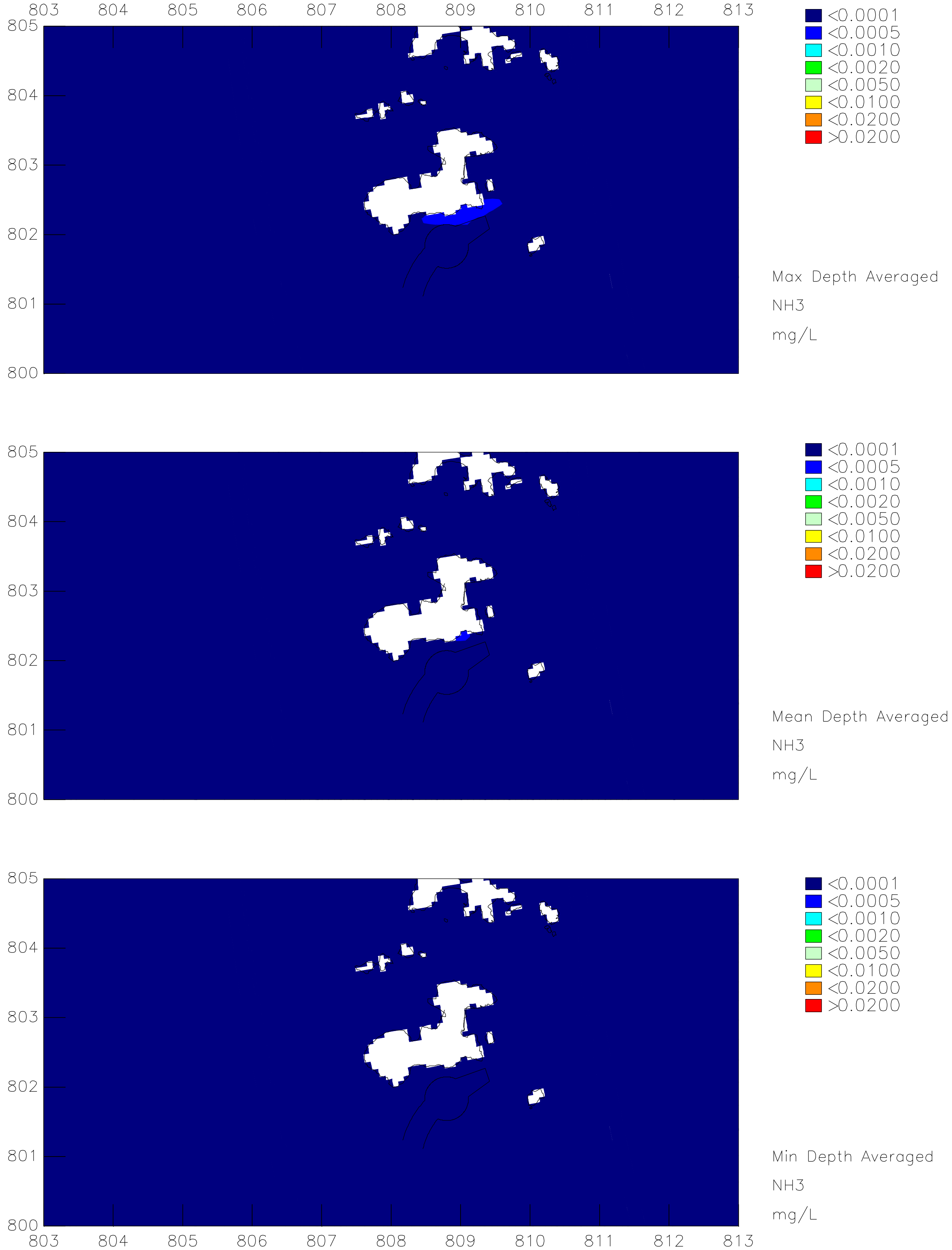



NH3 (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E23




NH3 (mg/L)

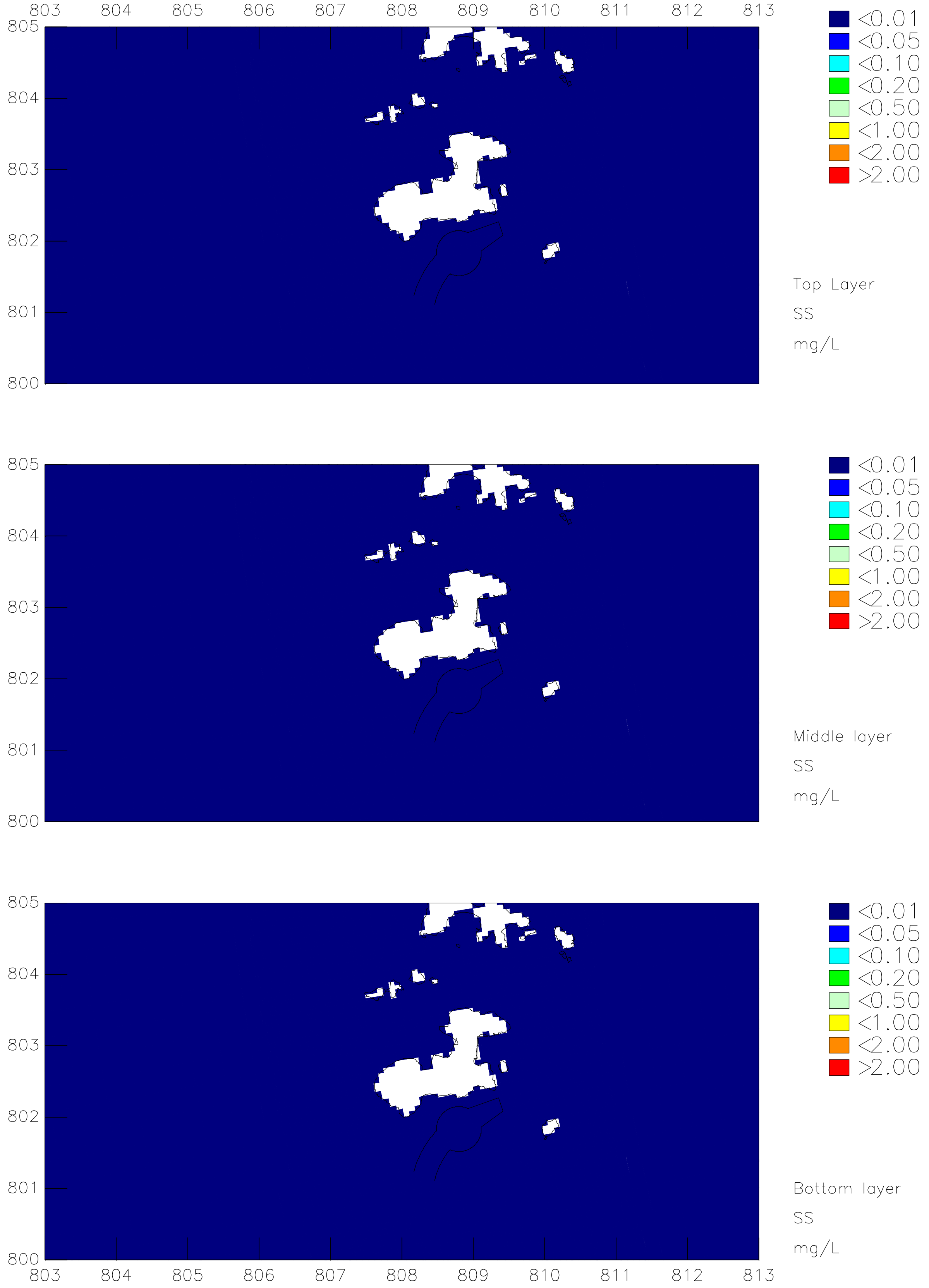
South Soko Sewage emission – Construction

Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E24

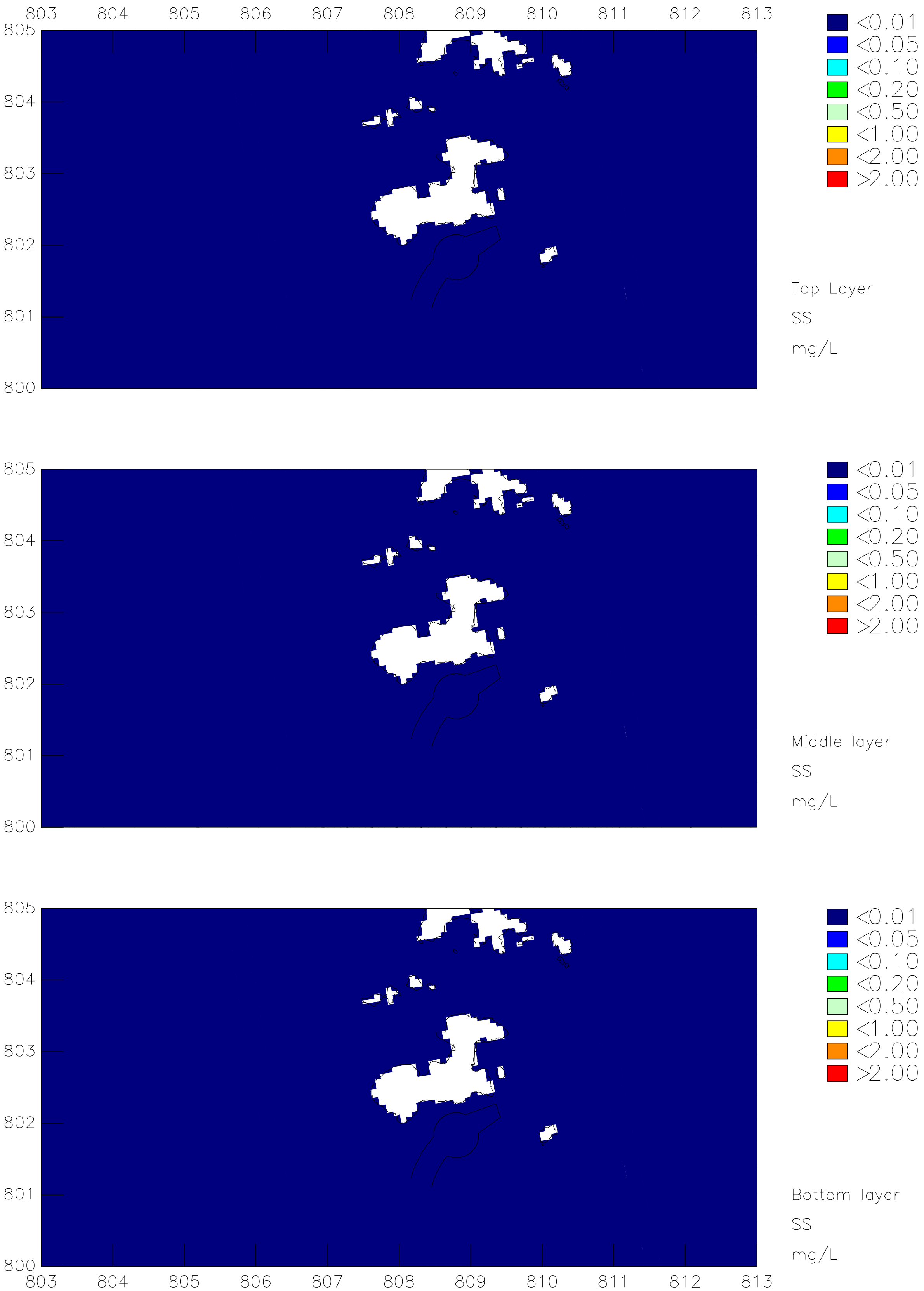



SS (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E25

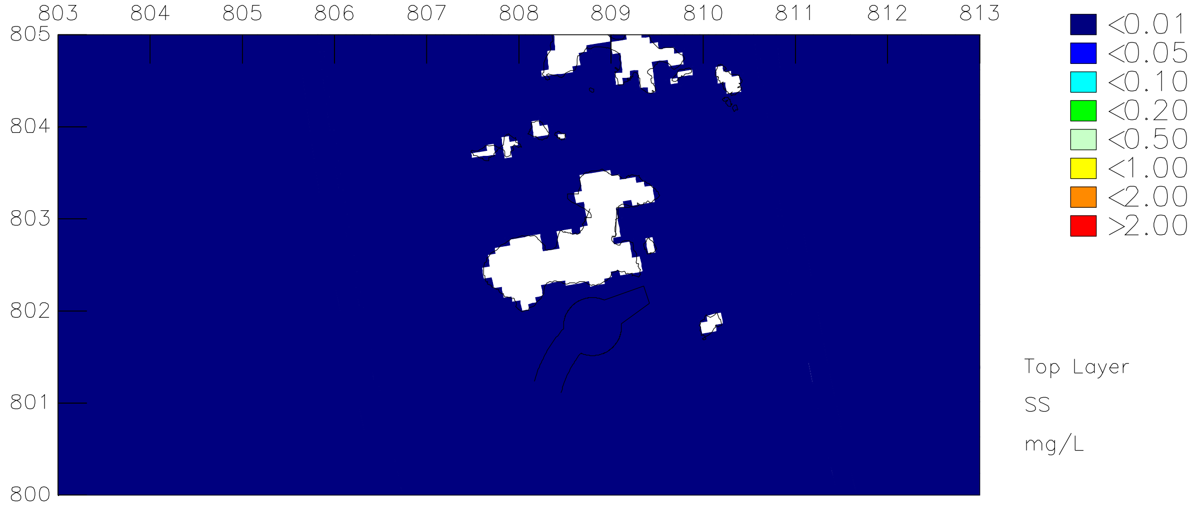


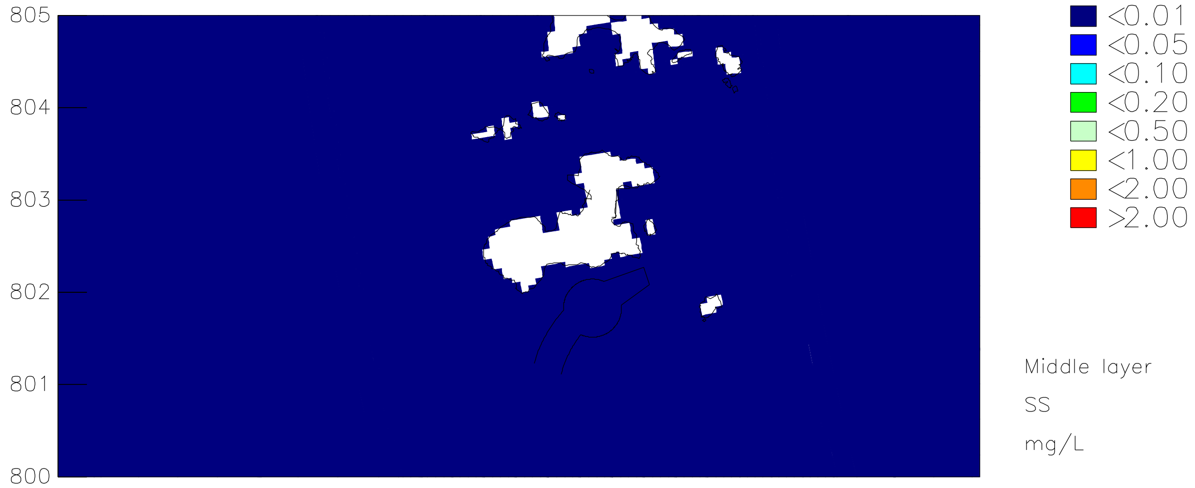

SS (mg/L) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

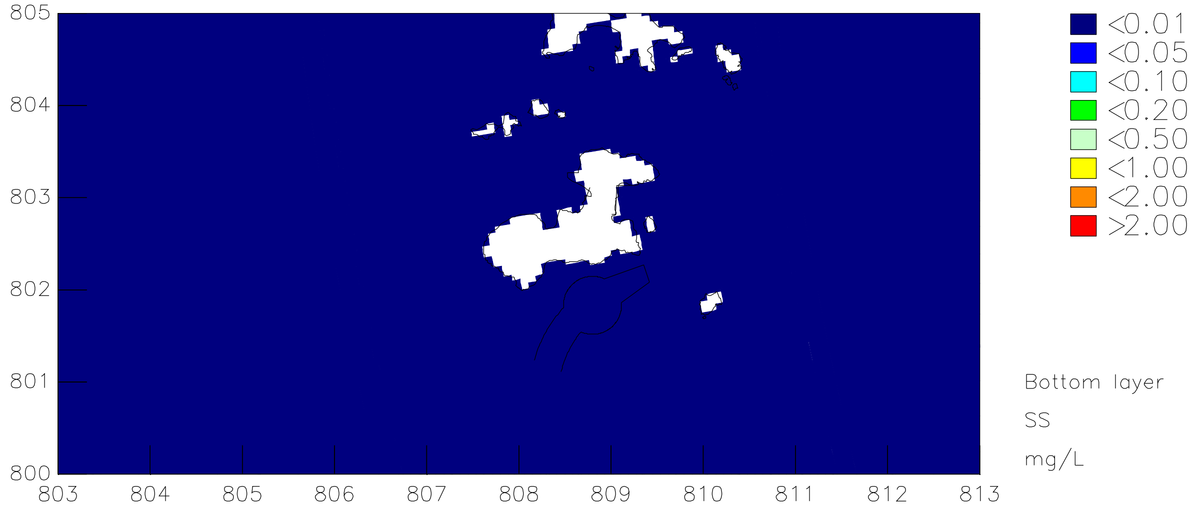
Dry Season

WL | Delft Hydraulics – ERM

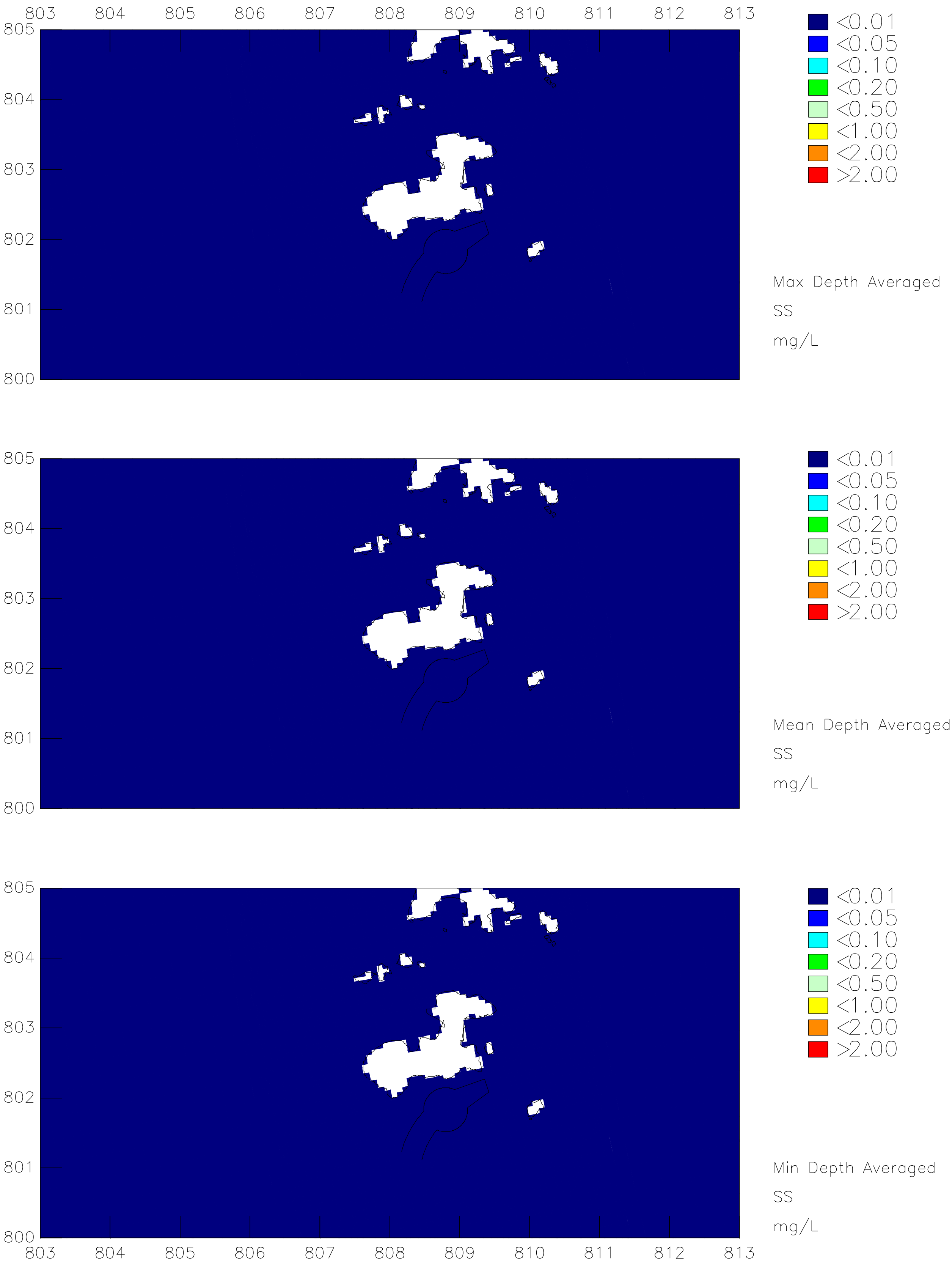
Fig. SK_E26




| | | |
|---|---|---|
| SS (mg/L) minimum increase<br>South Soko Sewage emission – Construction<br>Top, Middle and Bottom layer | Dry Season | |
| WL \| Delft Hydraulics – ERM | | Fig. SK_E27 |

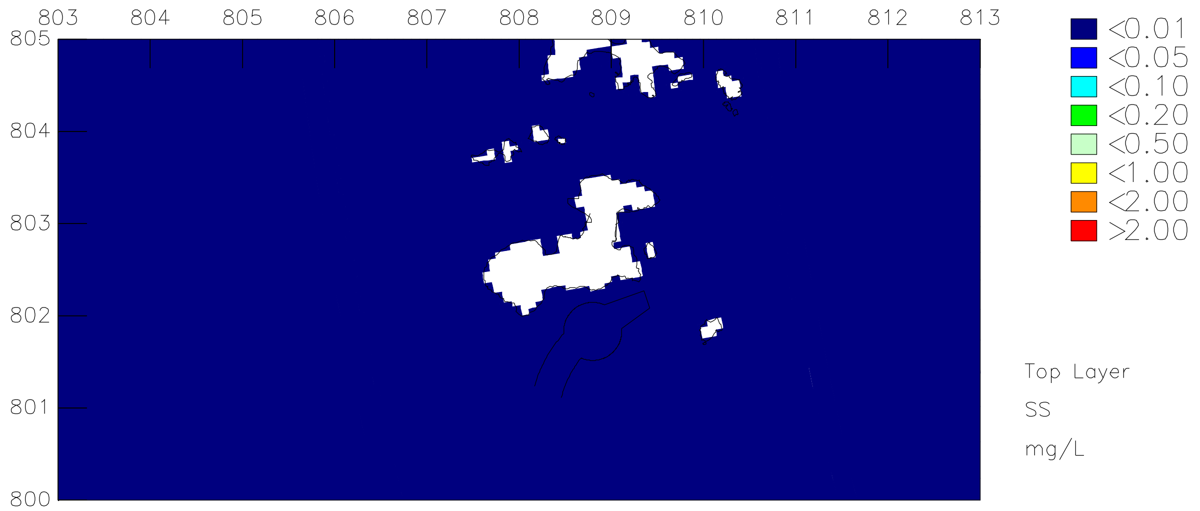


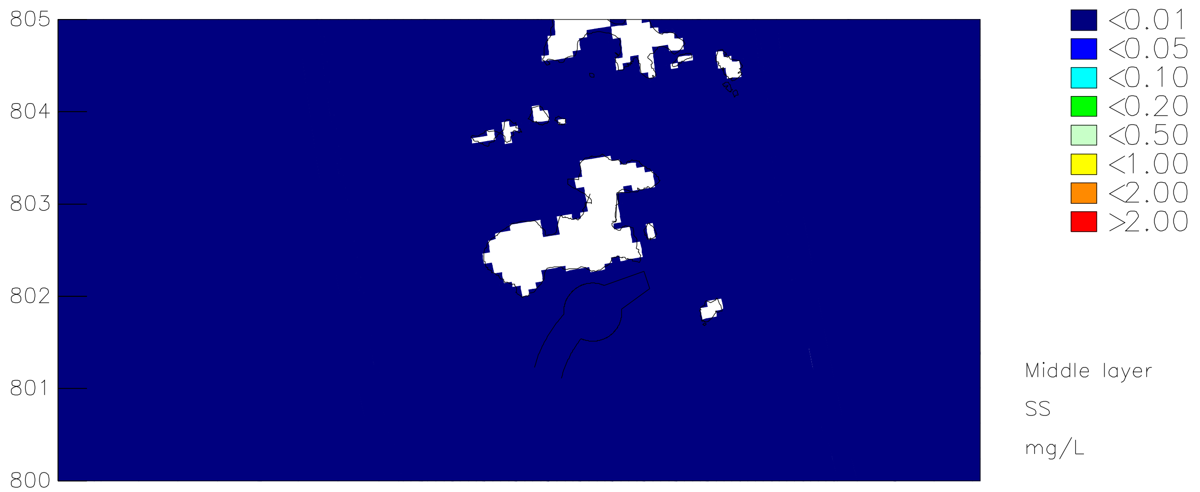

SS (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

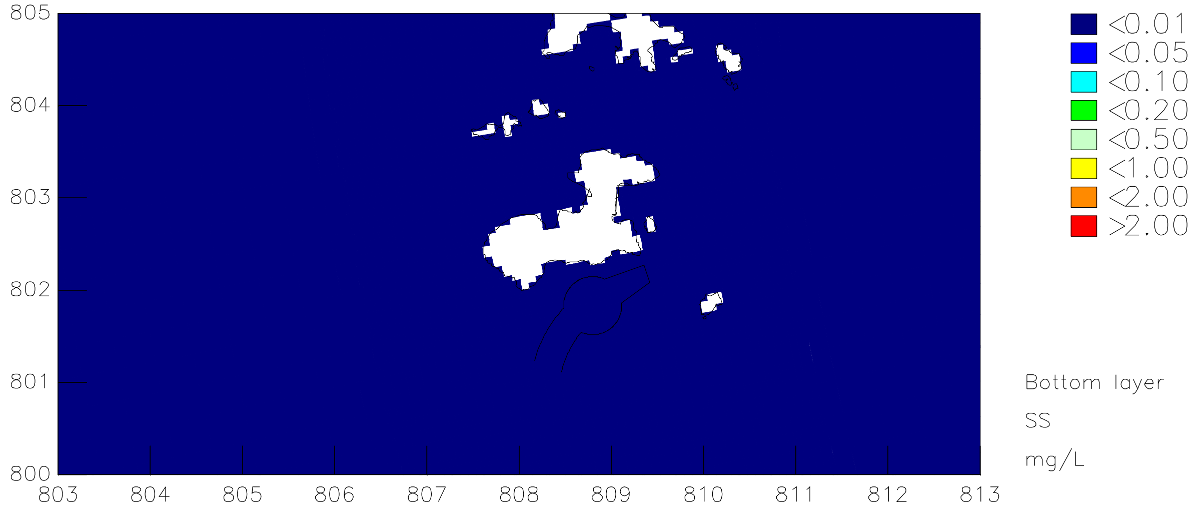
Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E28



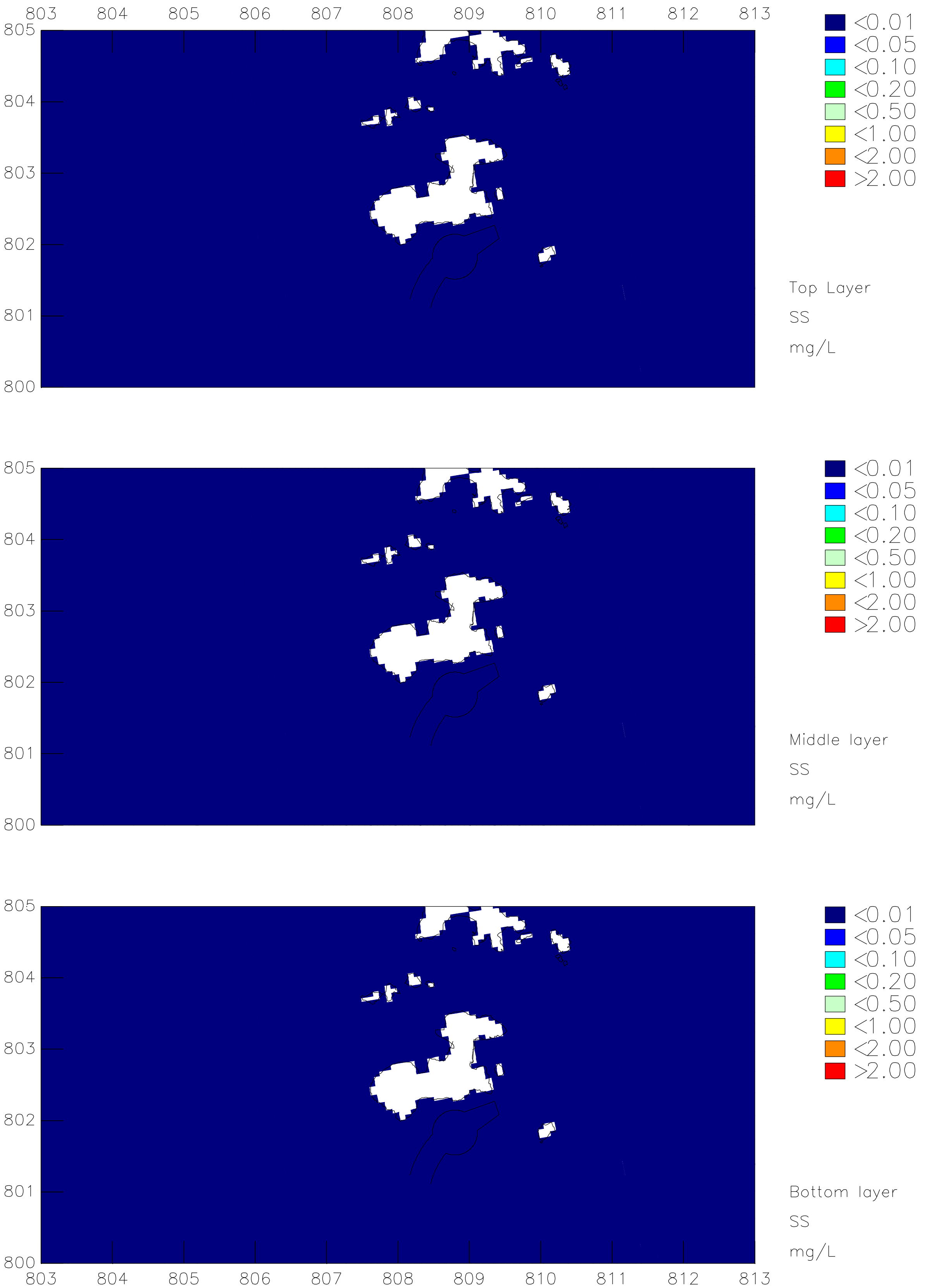




SS (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E29




SS (mg/L) mean increase

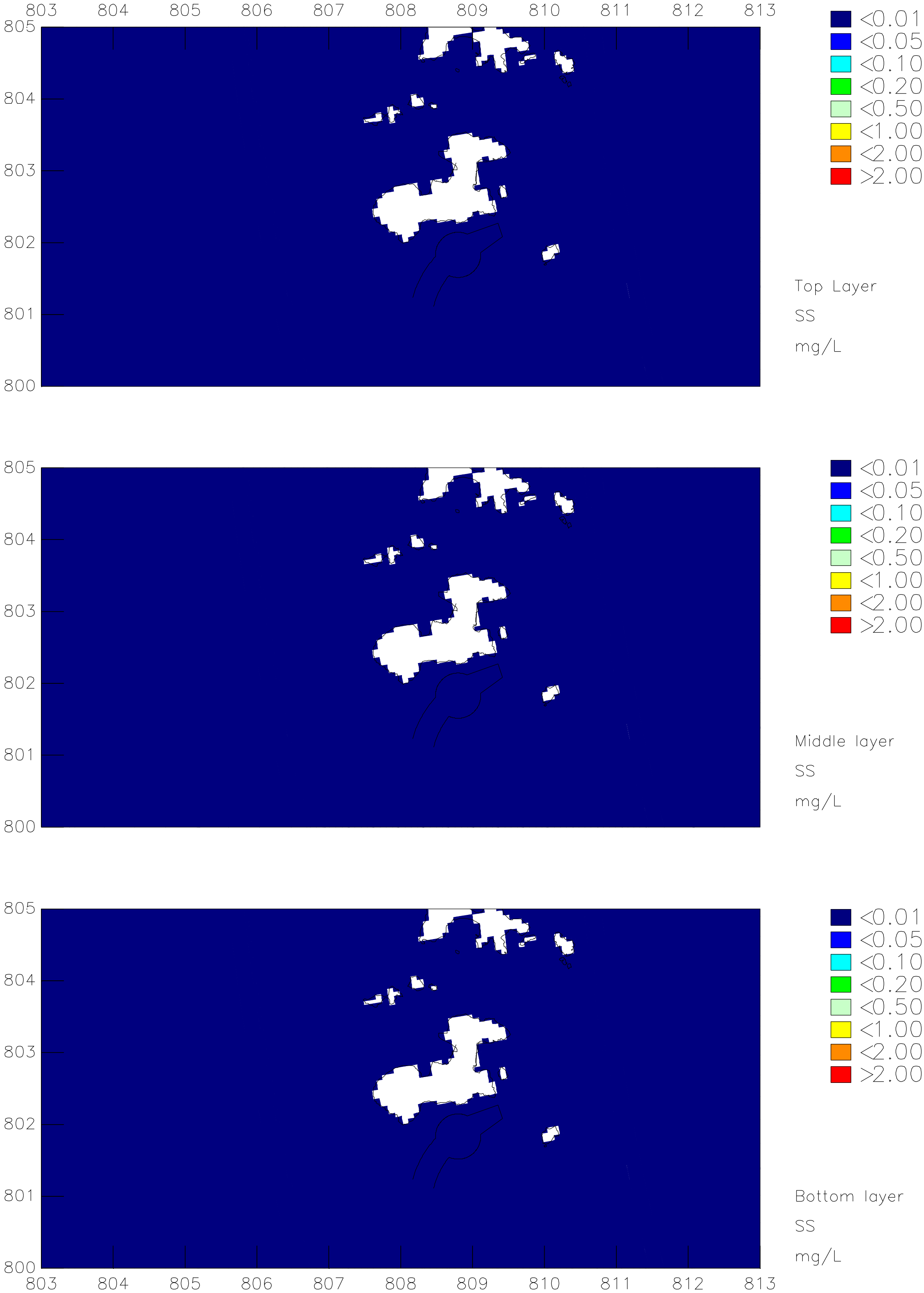
South Soko Sewage emission – Construction

Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E30

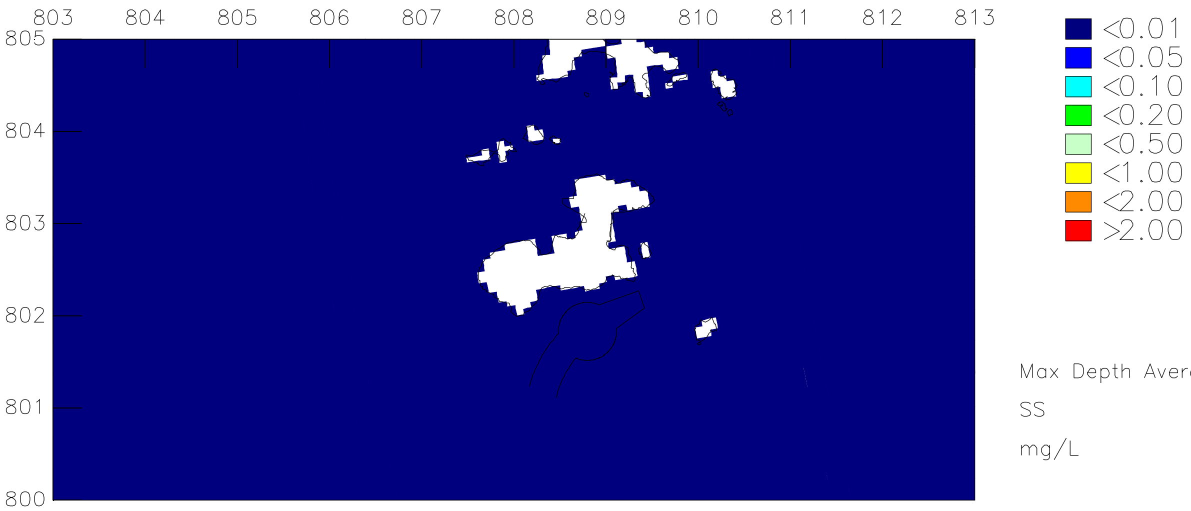



SS (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

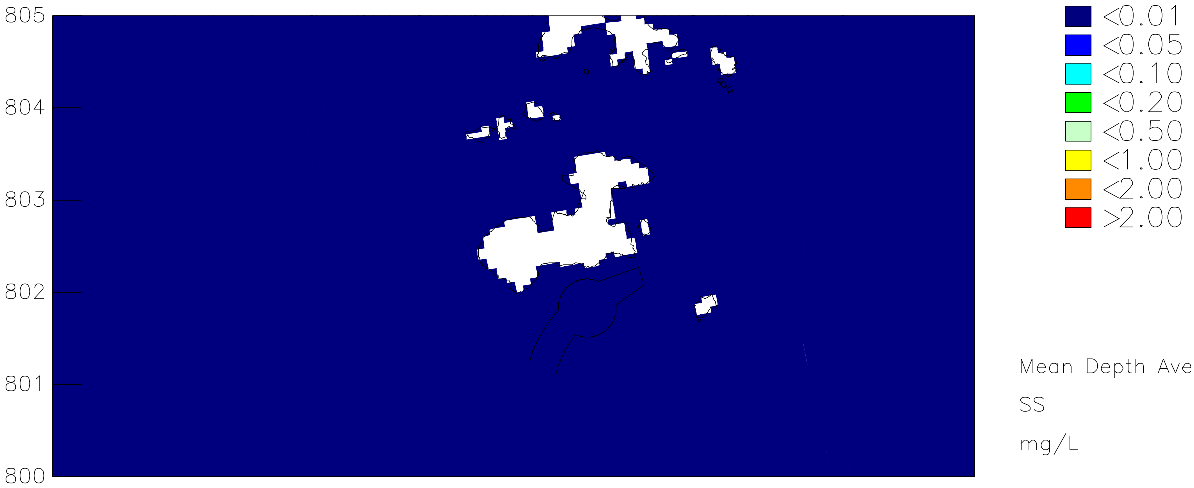
Wet Season

WL | Delft Hydraulics – ERM

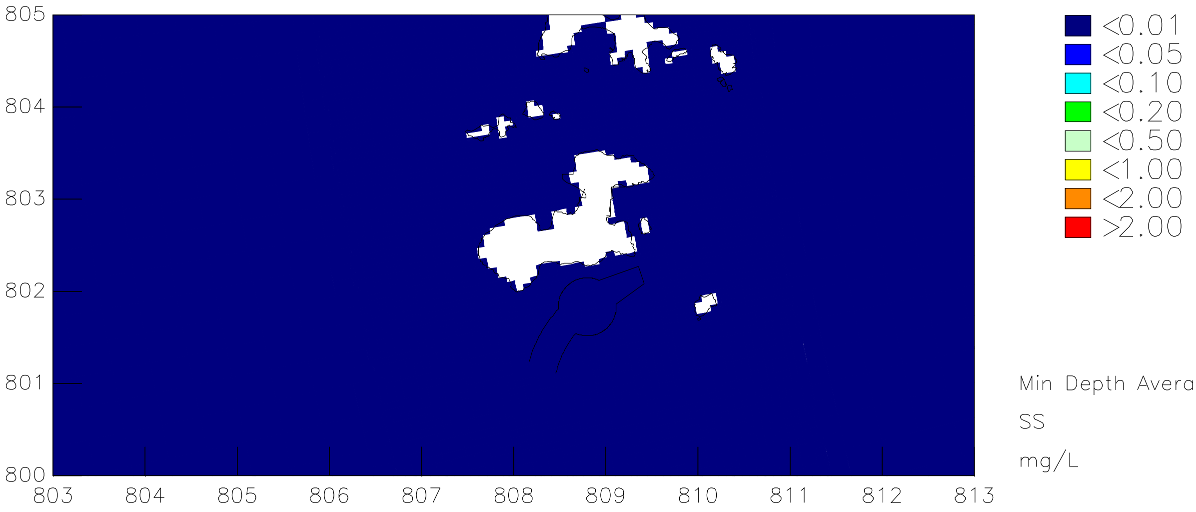
Fig. SK_E31




Max Depth Averaged
SS
mg/L




Mean Depth Averaged
SS
mg/L



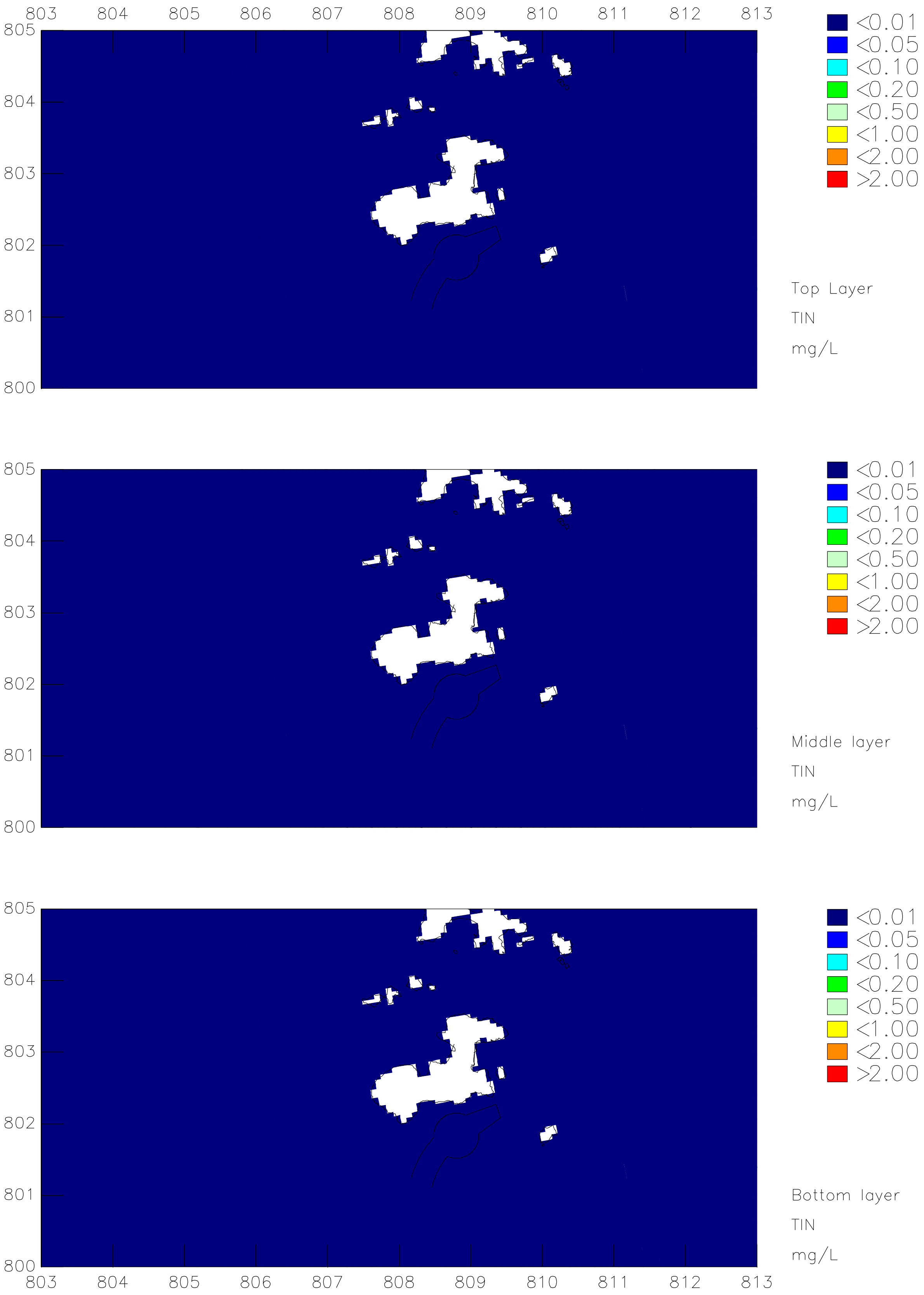

Min Depth Averaged
SS
mg/L

SS (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E32

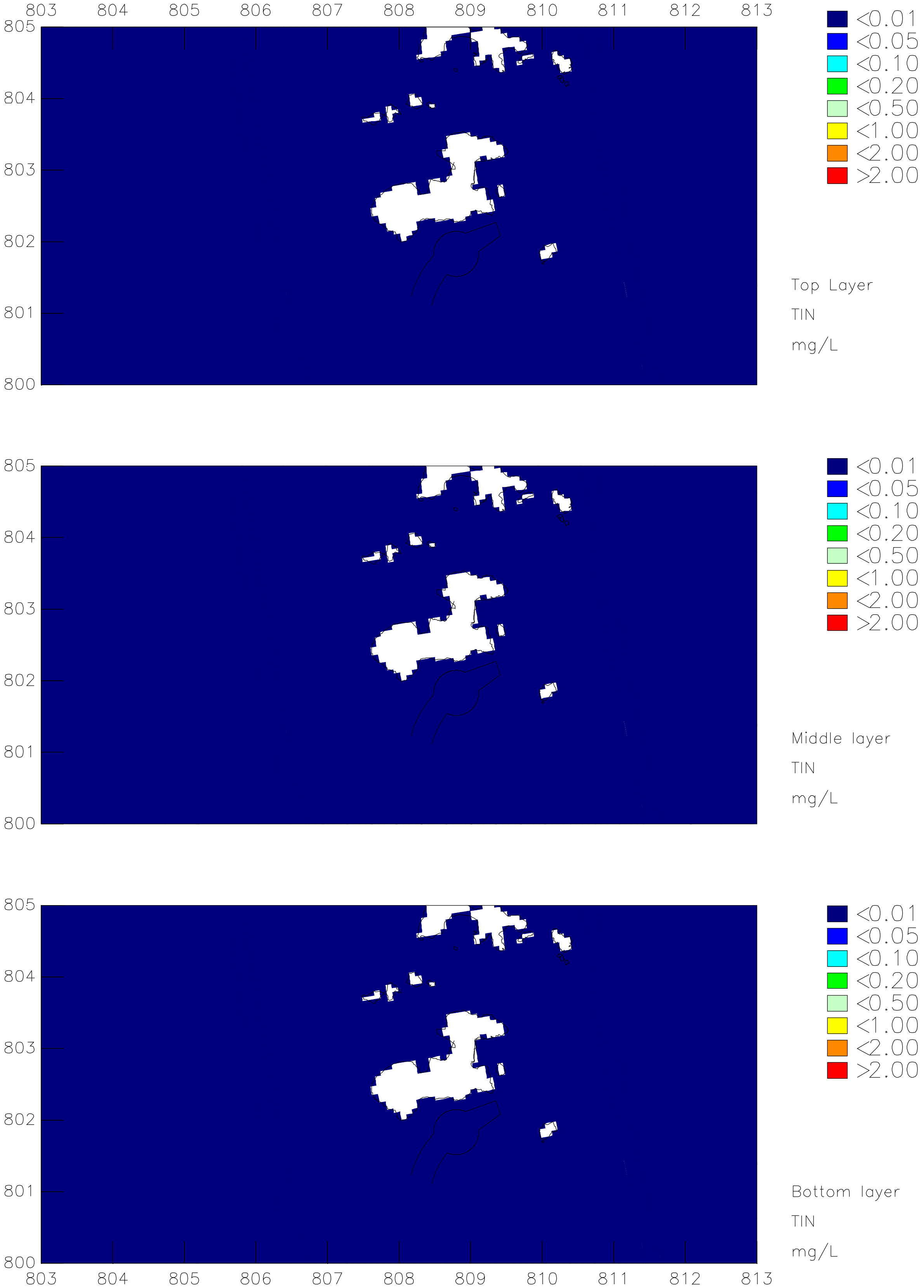



TIN (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E33

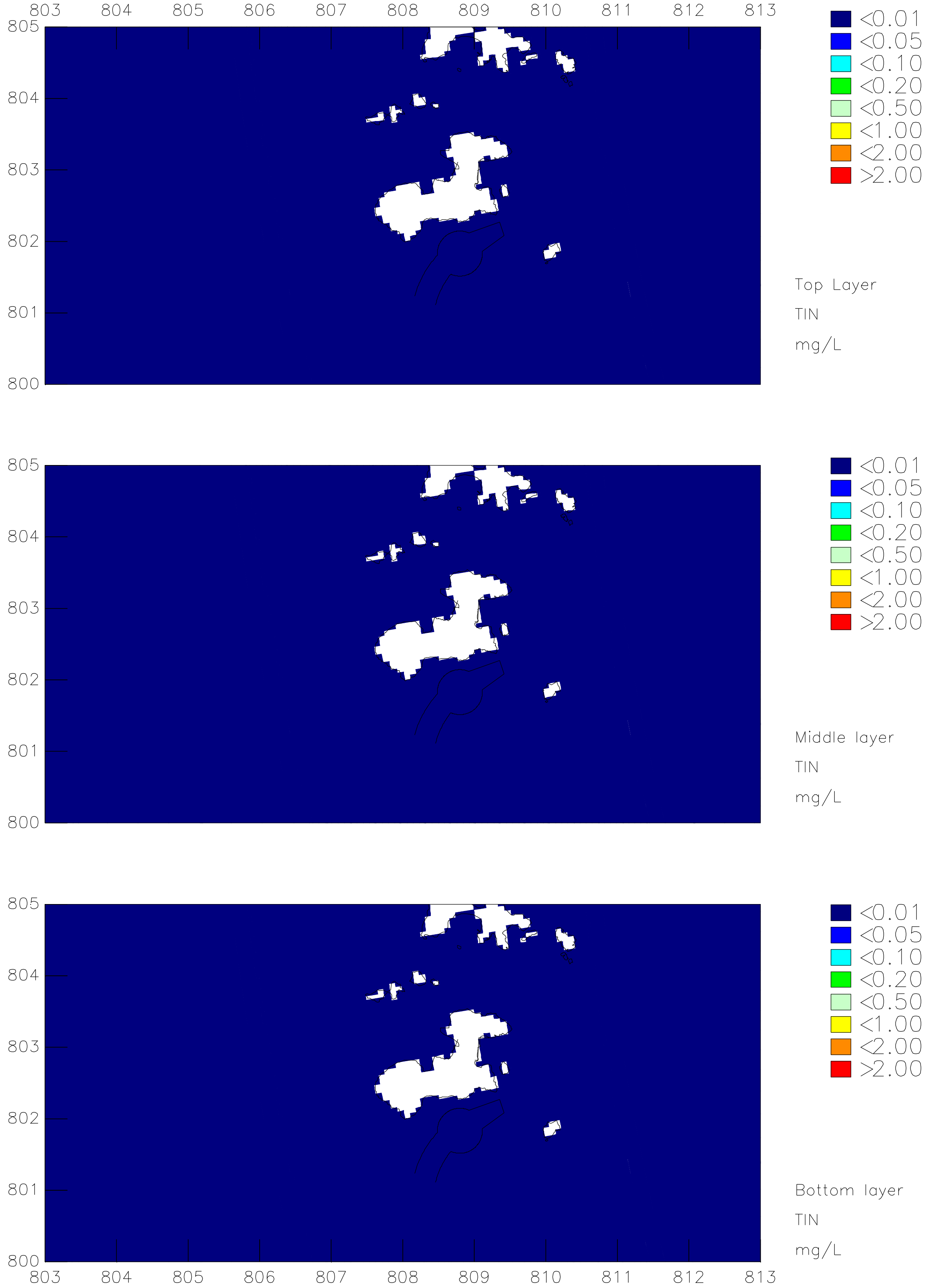



TIN (mg/L) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E34

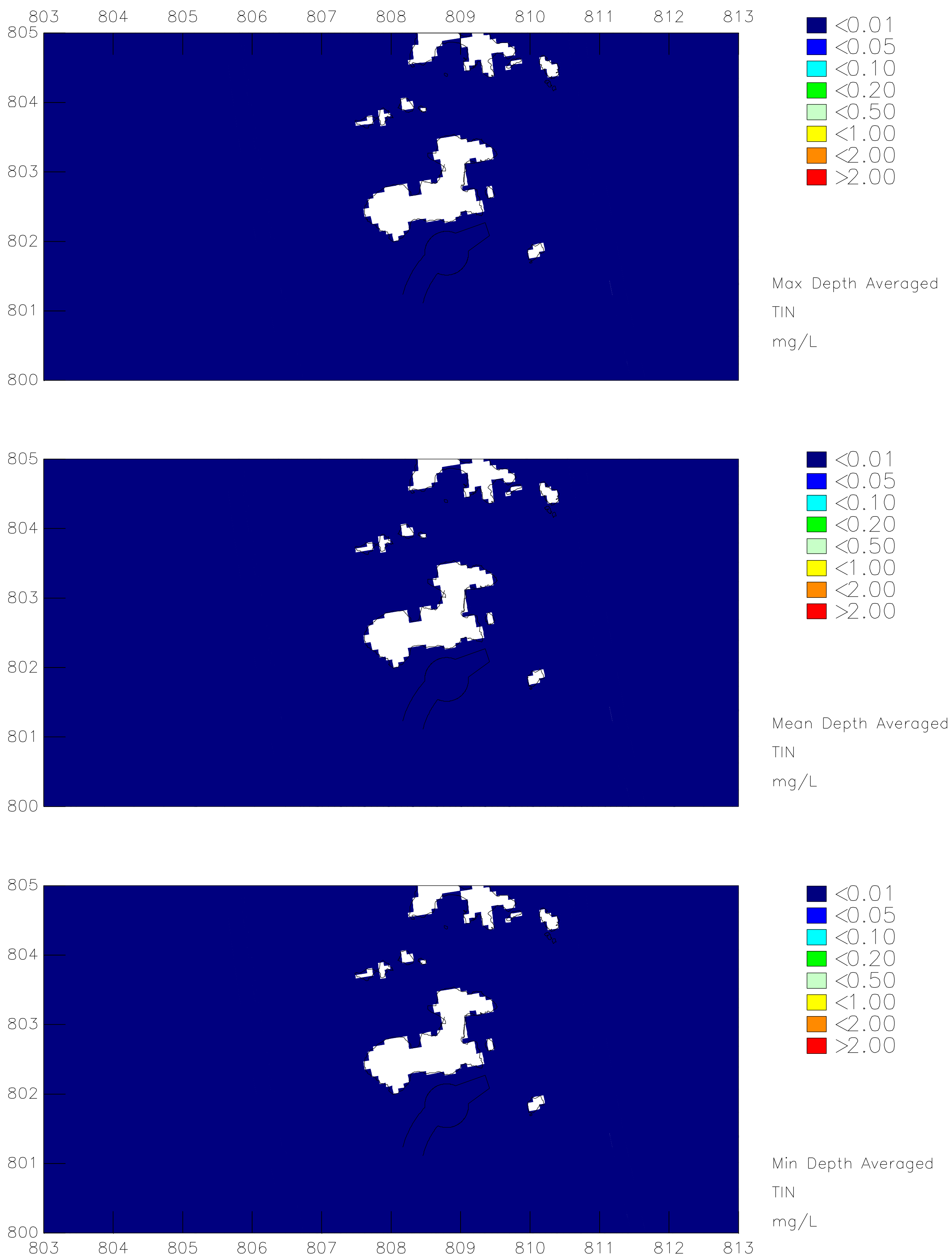



TIN (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E35

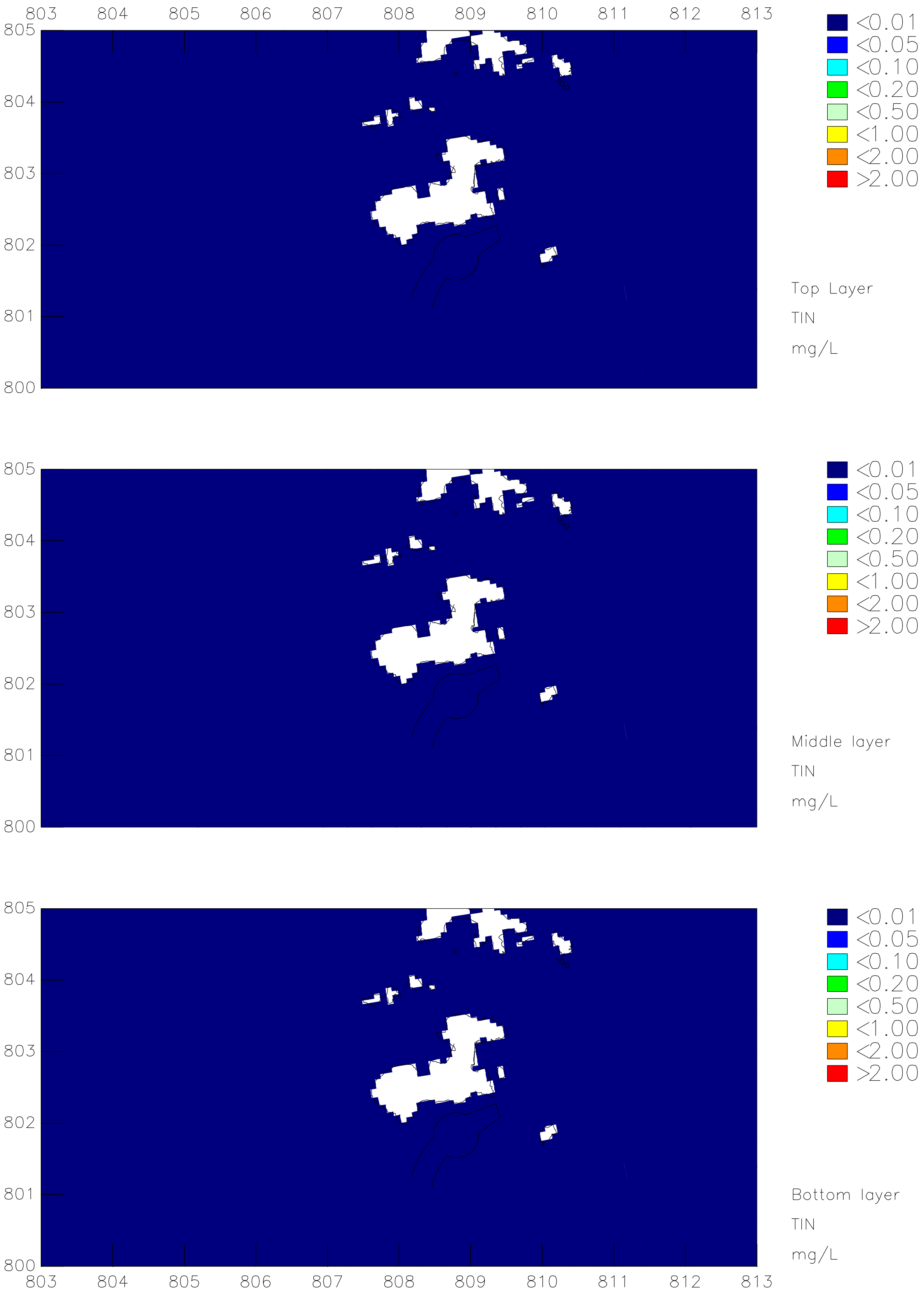



TIN (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E36

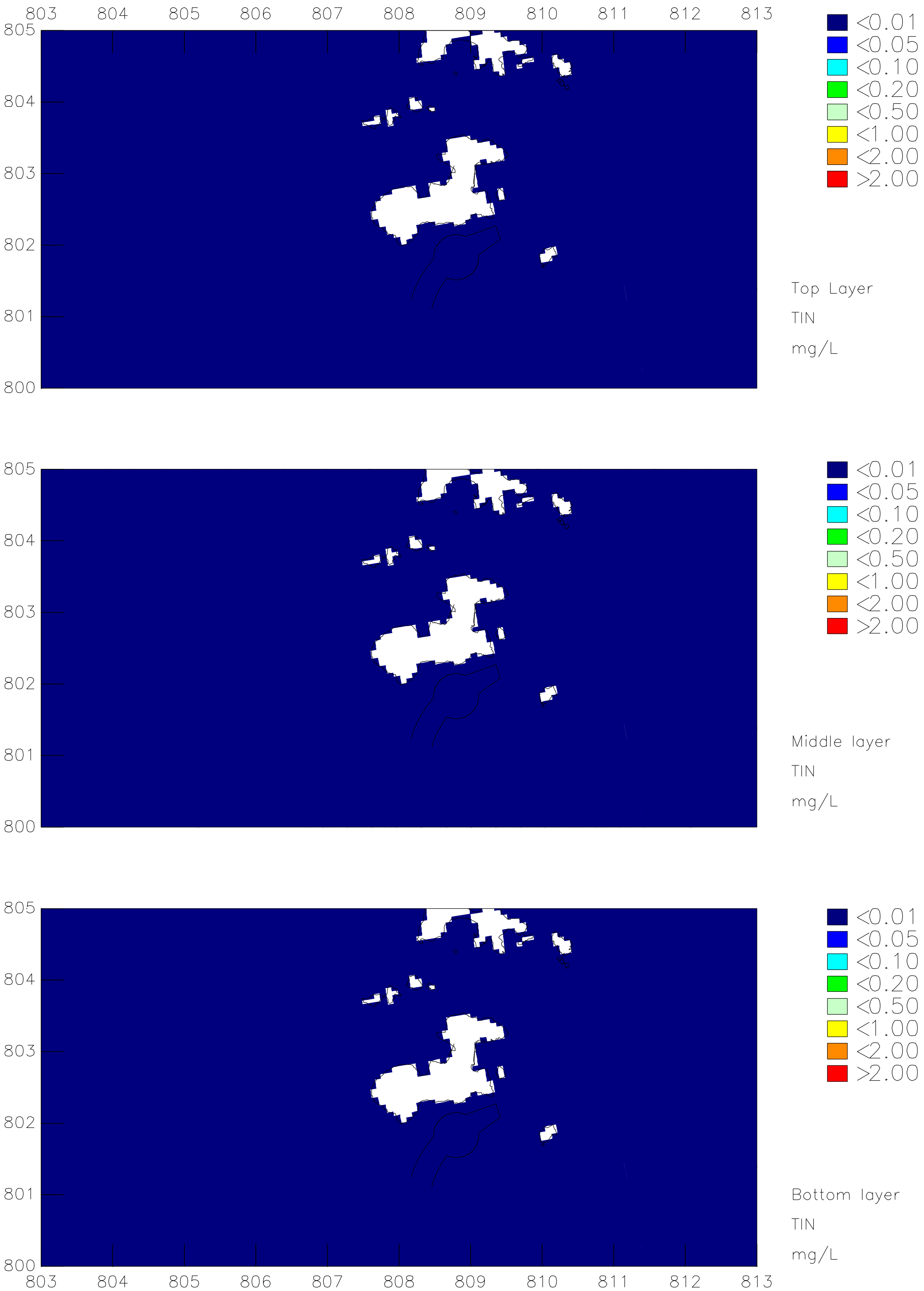



TIN (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E37

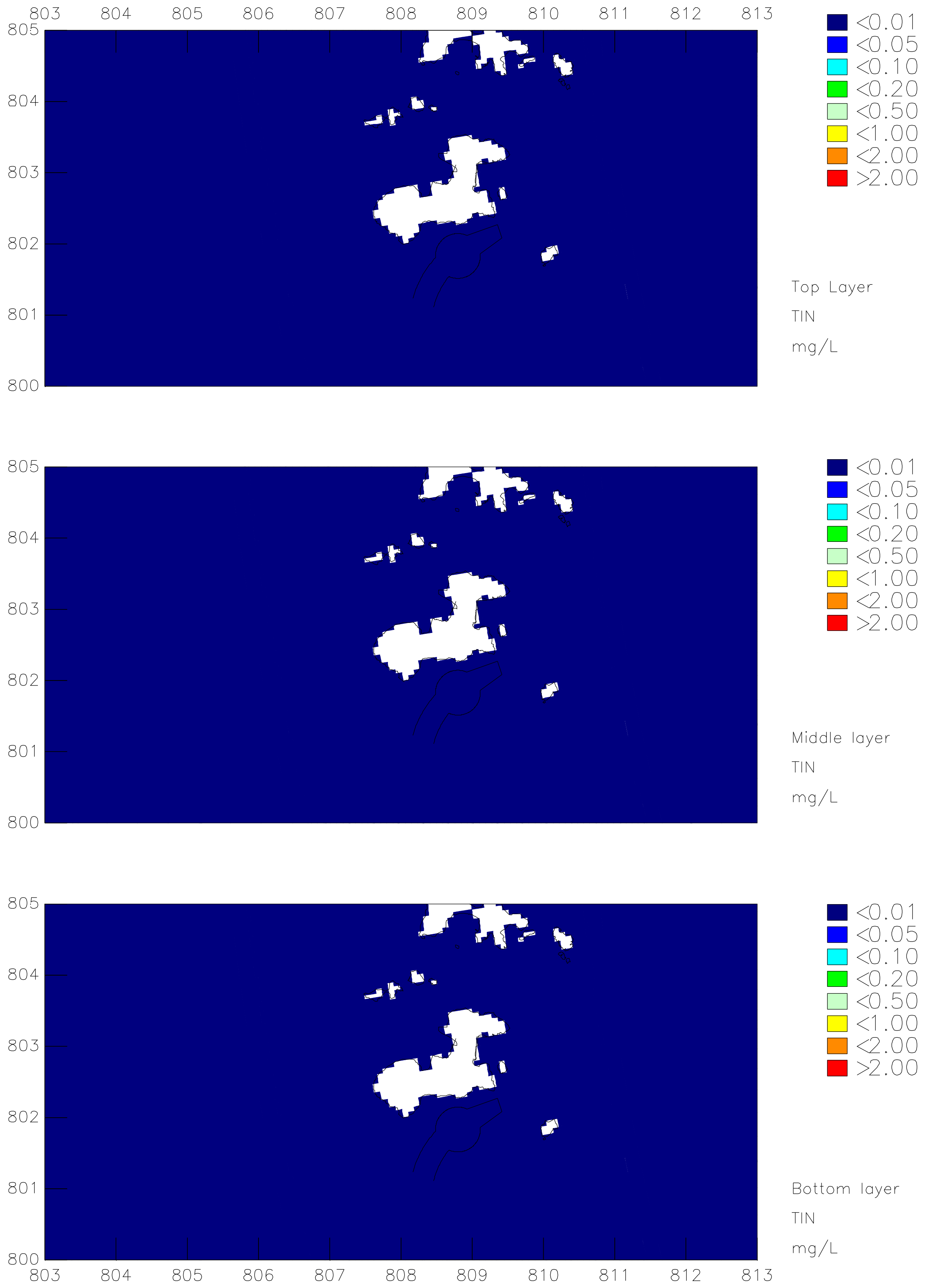



TIN (mg/L) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E38

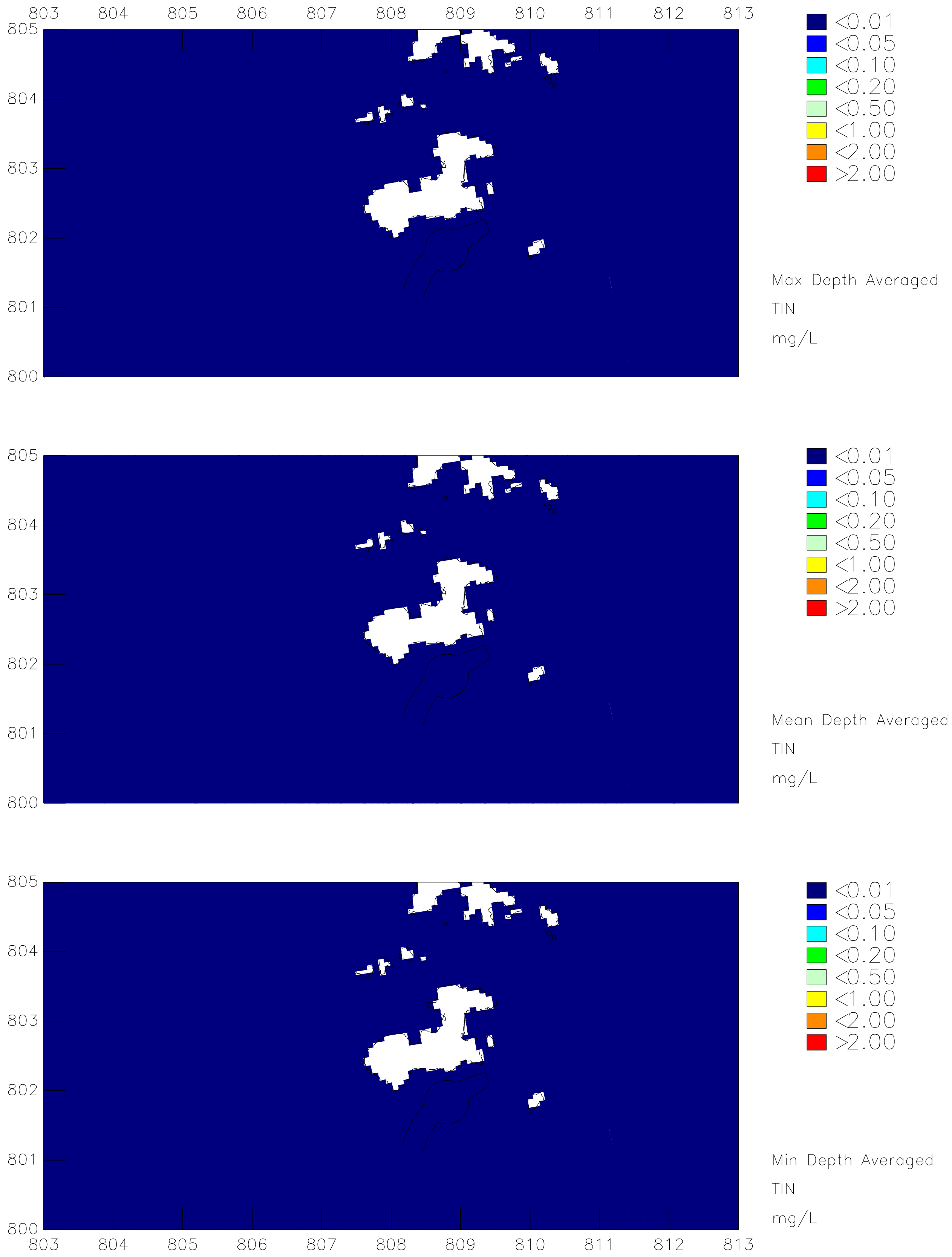



TIN (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E37

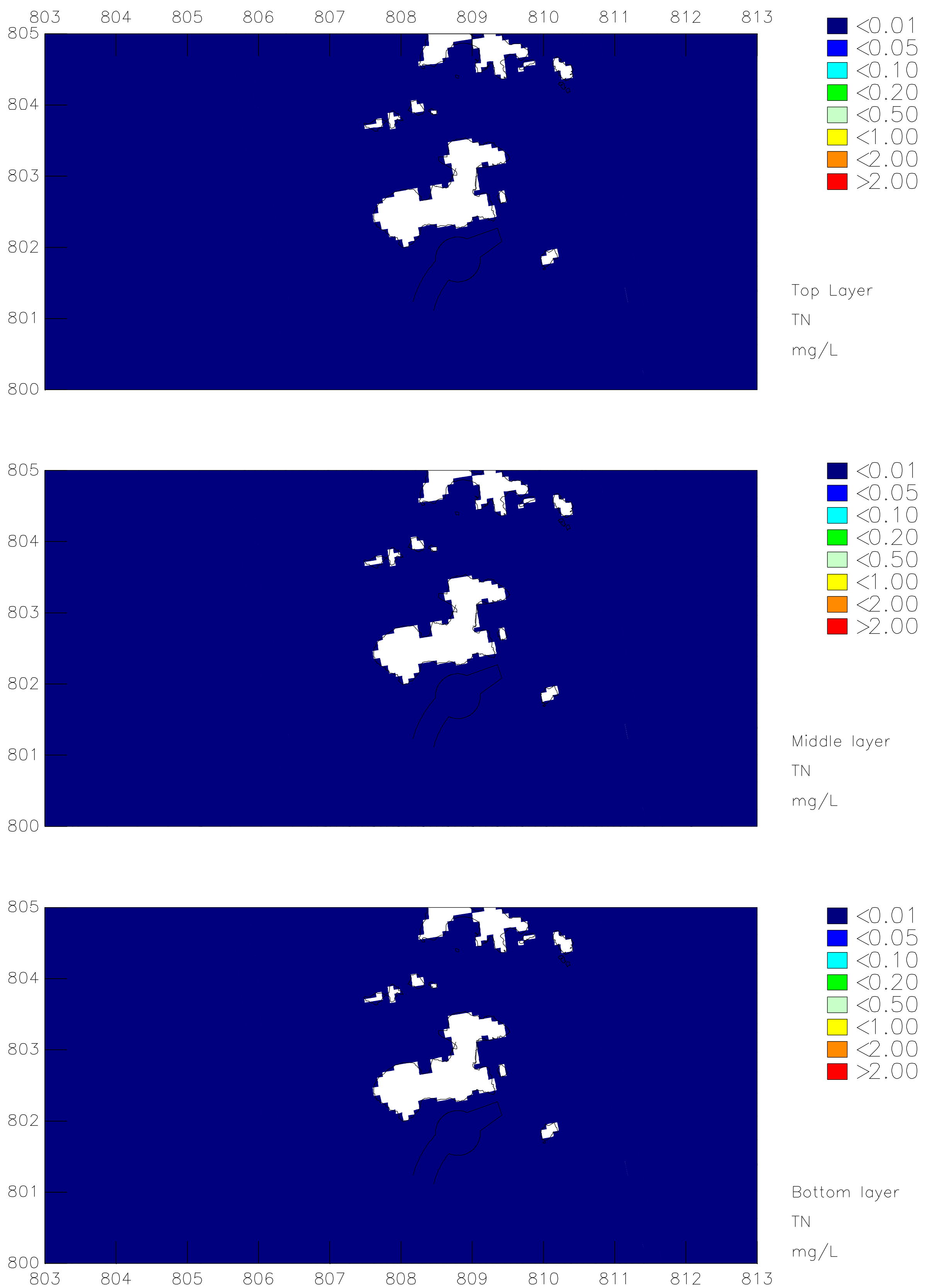



TIN (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E38

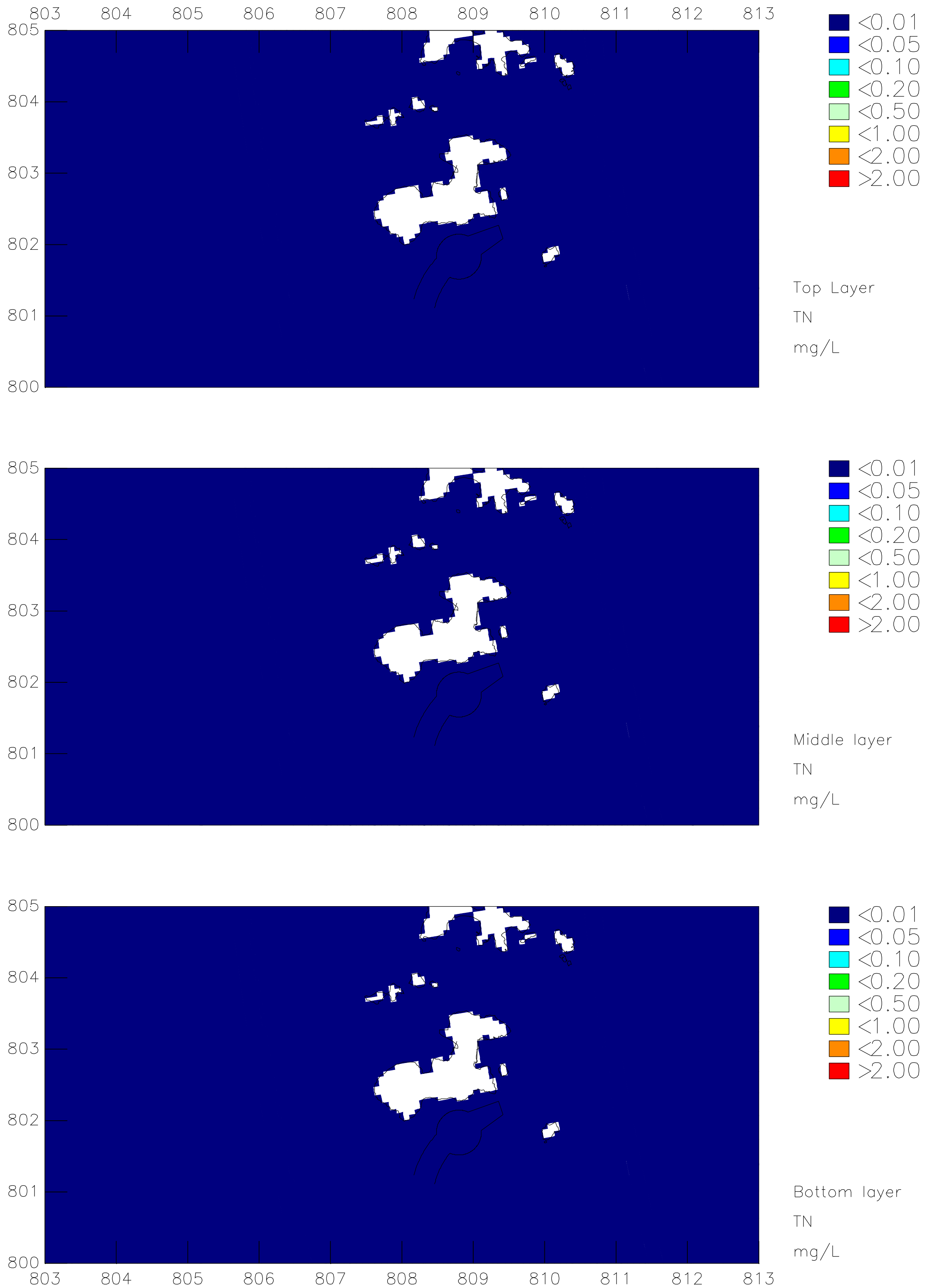



TN (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E39

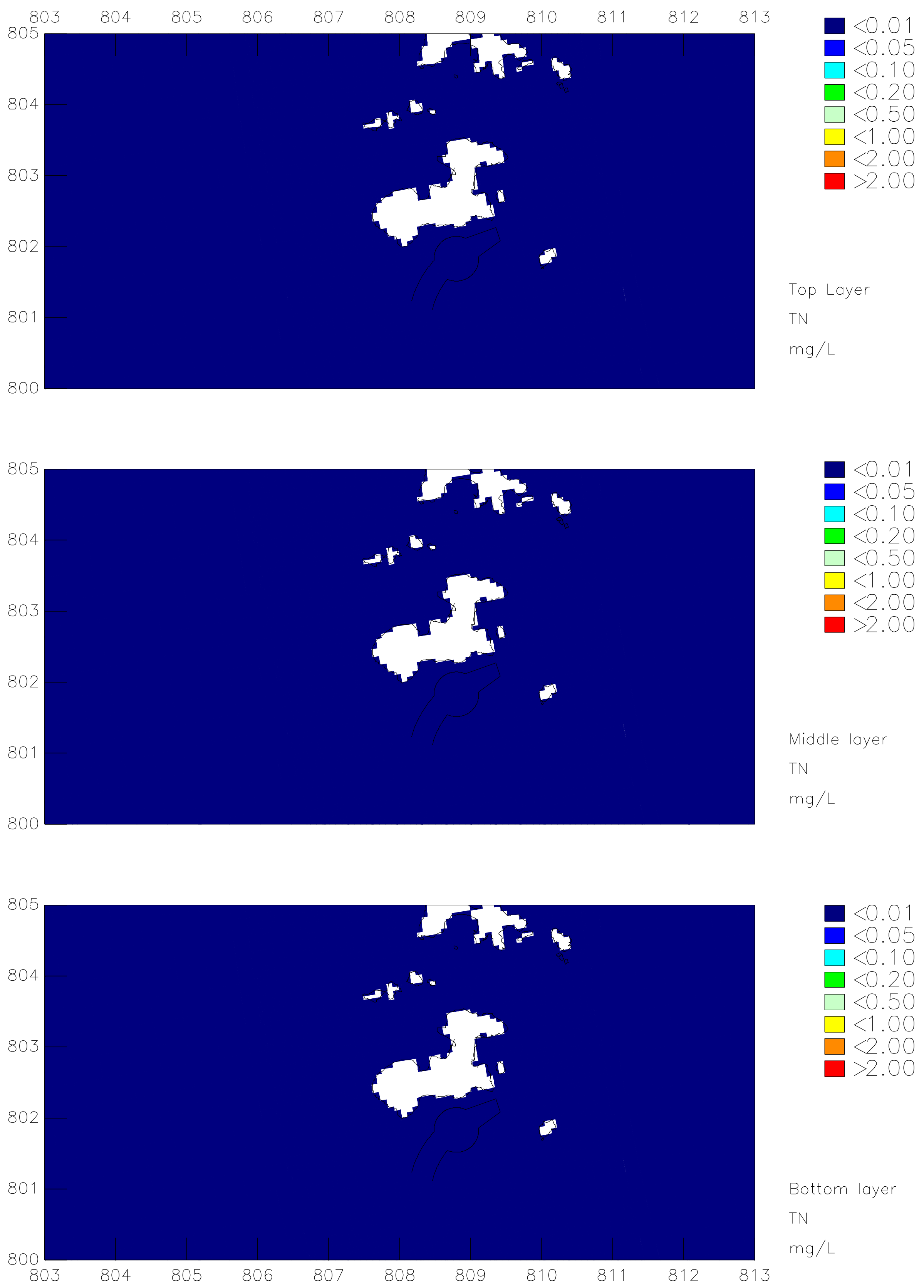



TN (mg/L) mean increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E40

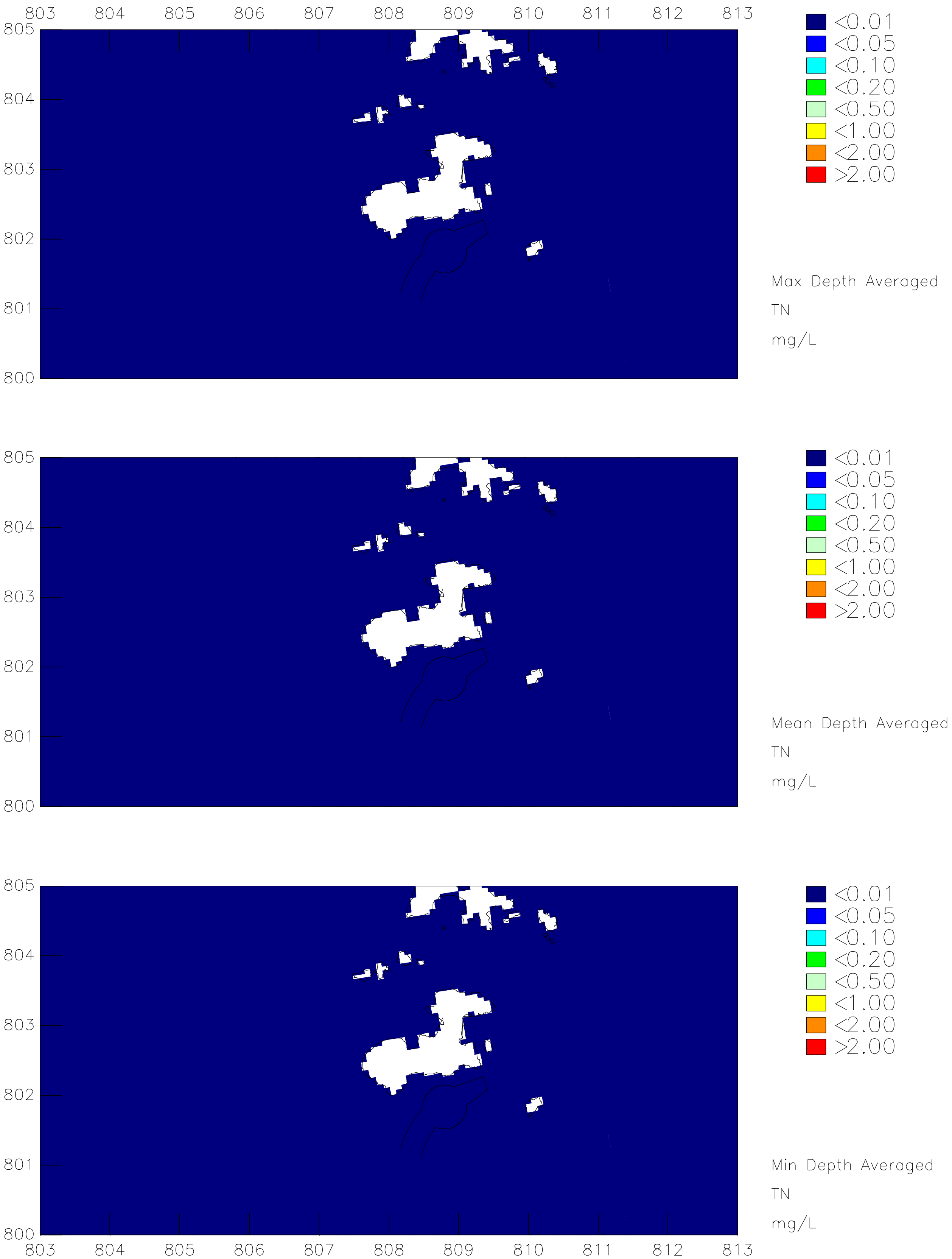



TN (mg/L) minimum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E41

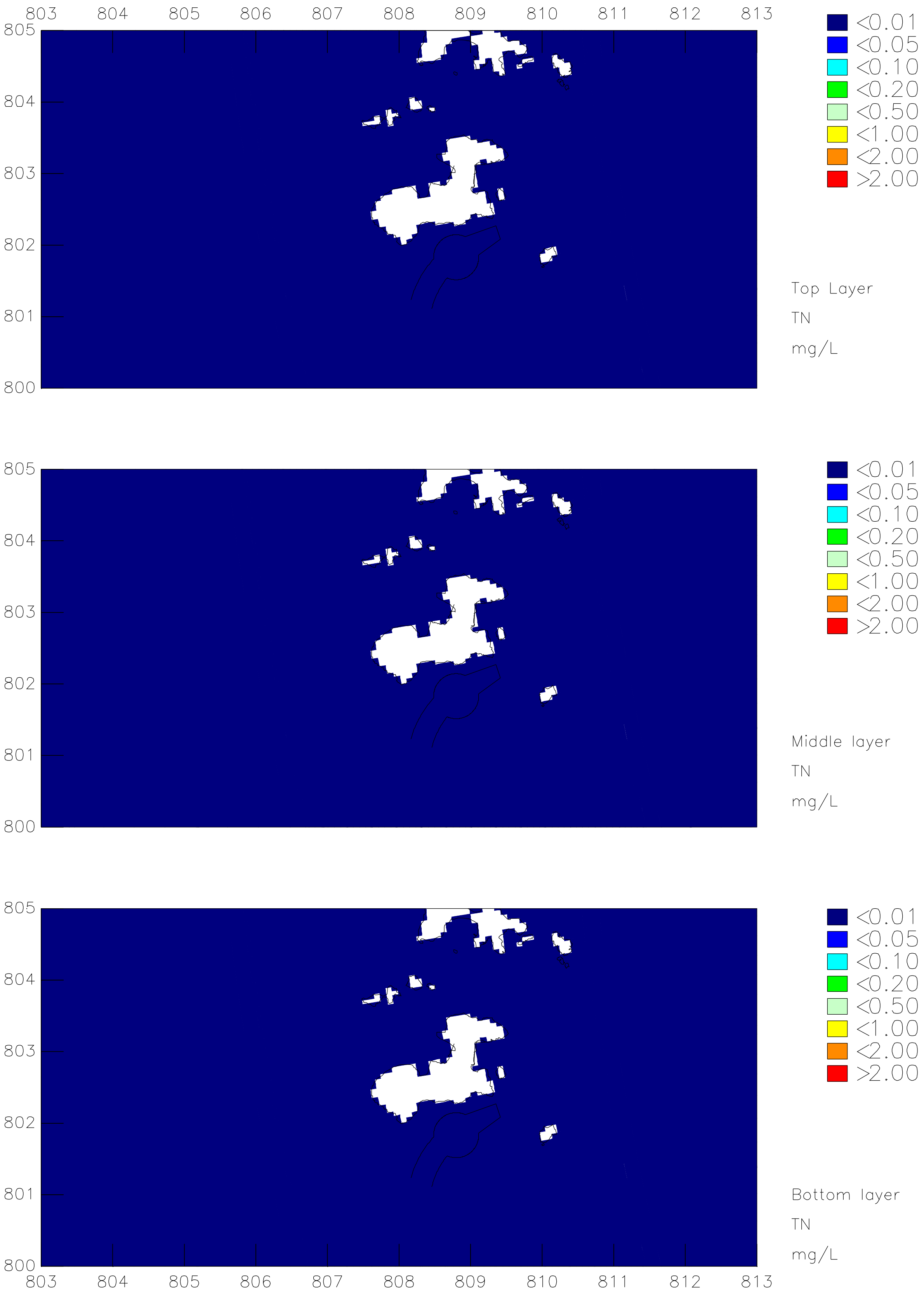



TN (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Fig. SK_E42

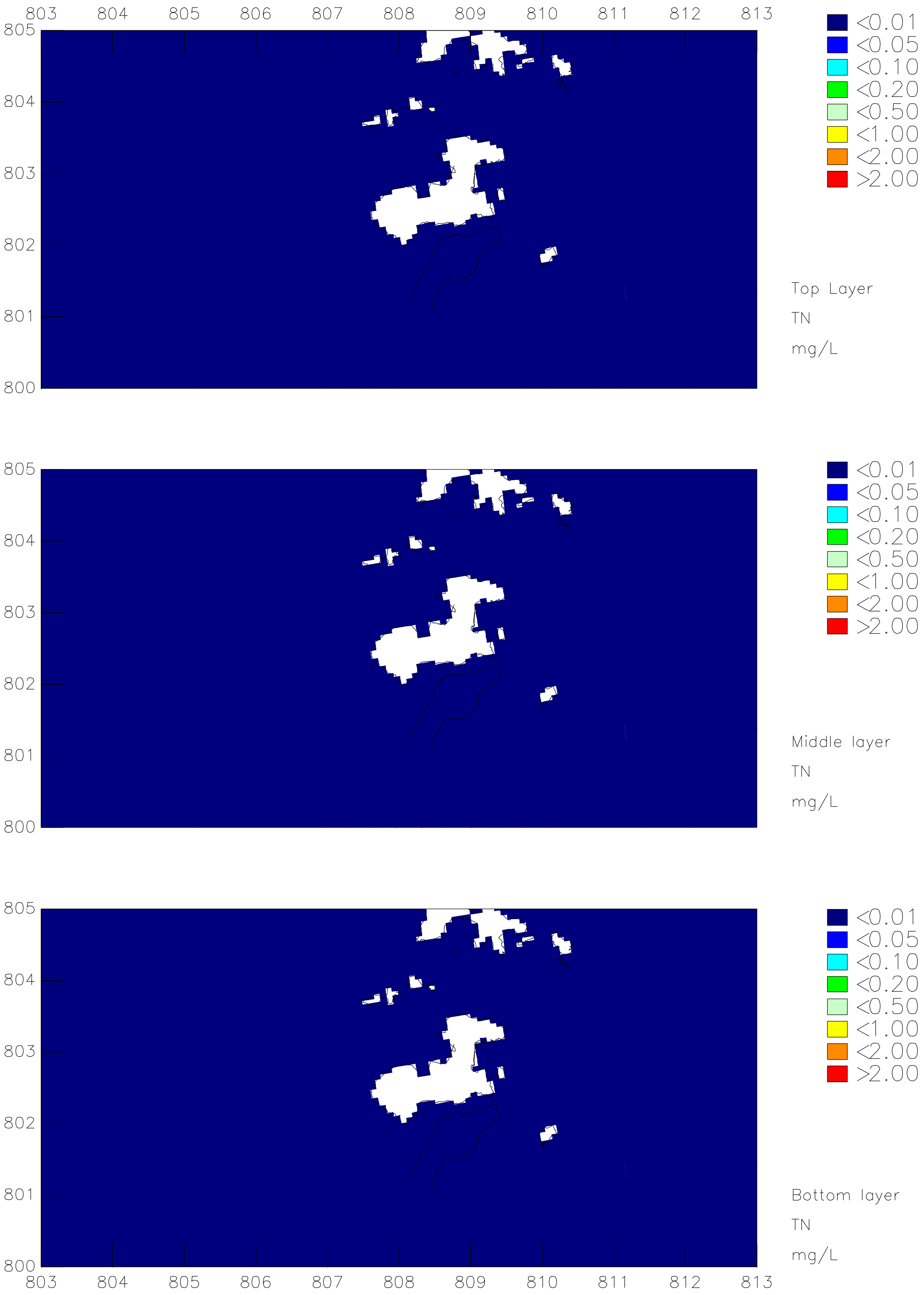



TN (mg/L) maximum increase
South Soko Sewage emission – Construction
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E43




TN (mg/L) mean increase

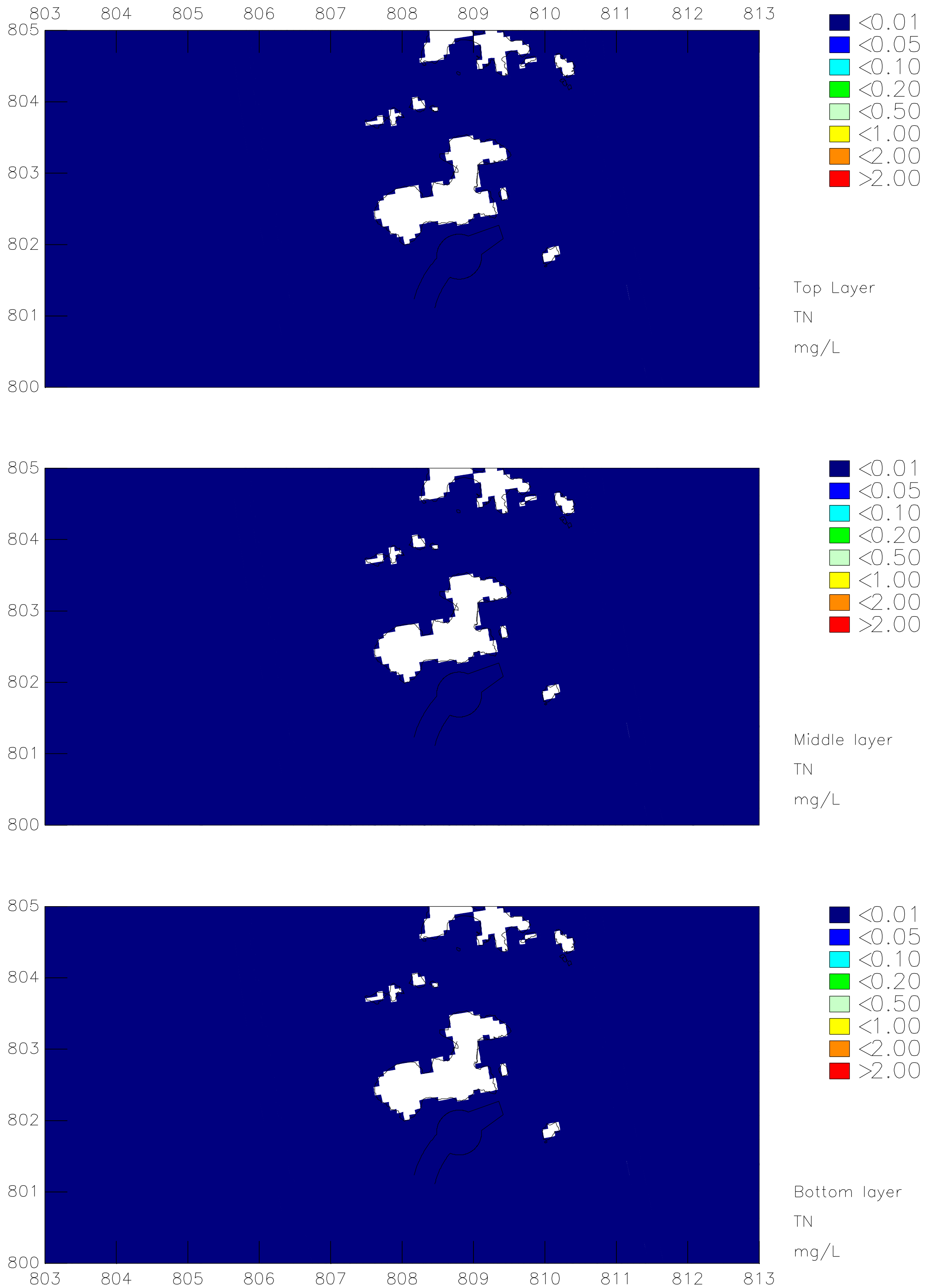
South Soko Sewage emission – Construction

Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E44




TN (mg/L) minimum increase

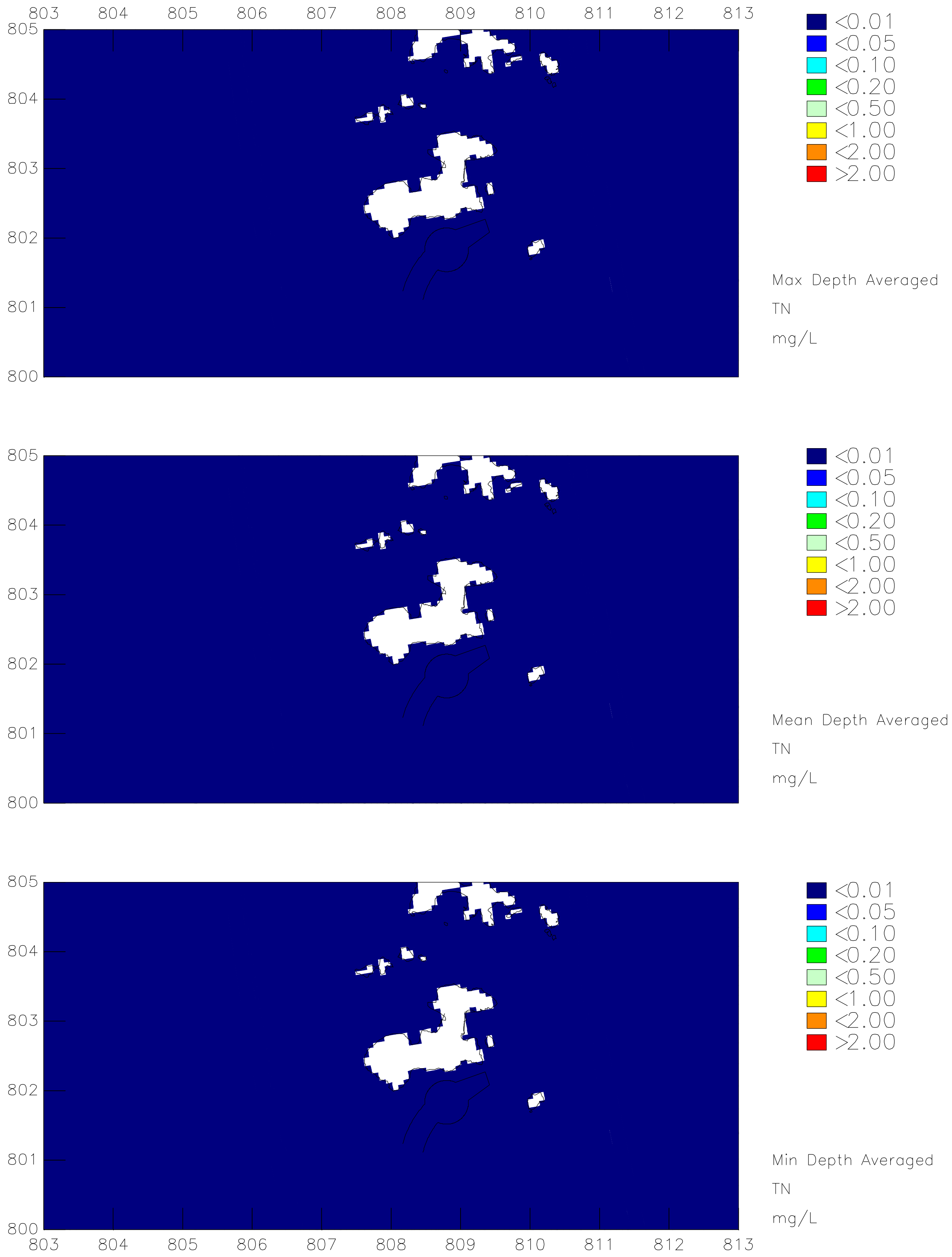
South Soko Sewage emission – Construction

Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Fig. SK_E45




TN (mg/L)
South Soko Sewage emission – Construction
Maximum, Mean and Minimum depth averaged increase

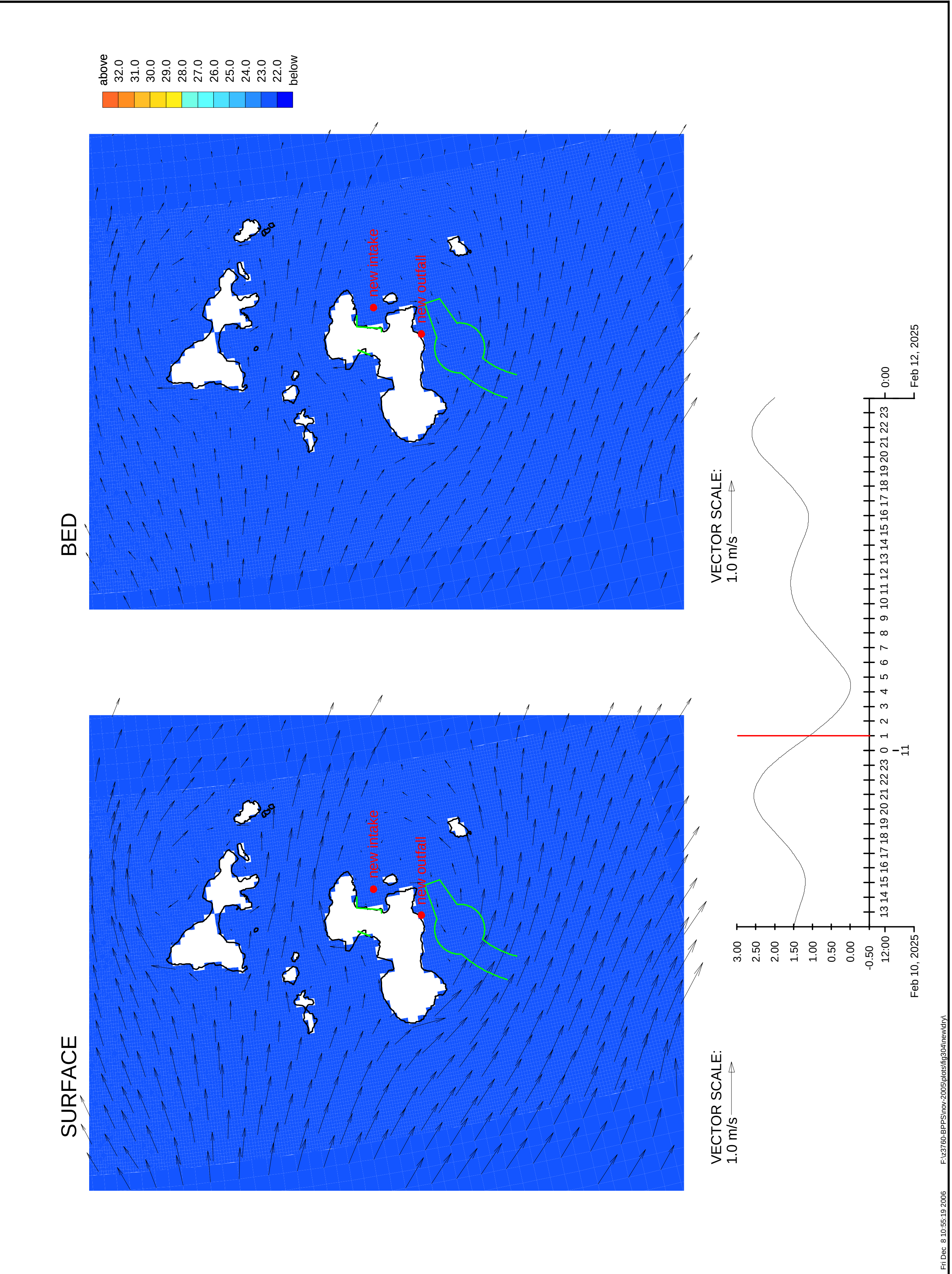
Wet Season

WL | Delft Hydraulics – ERM

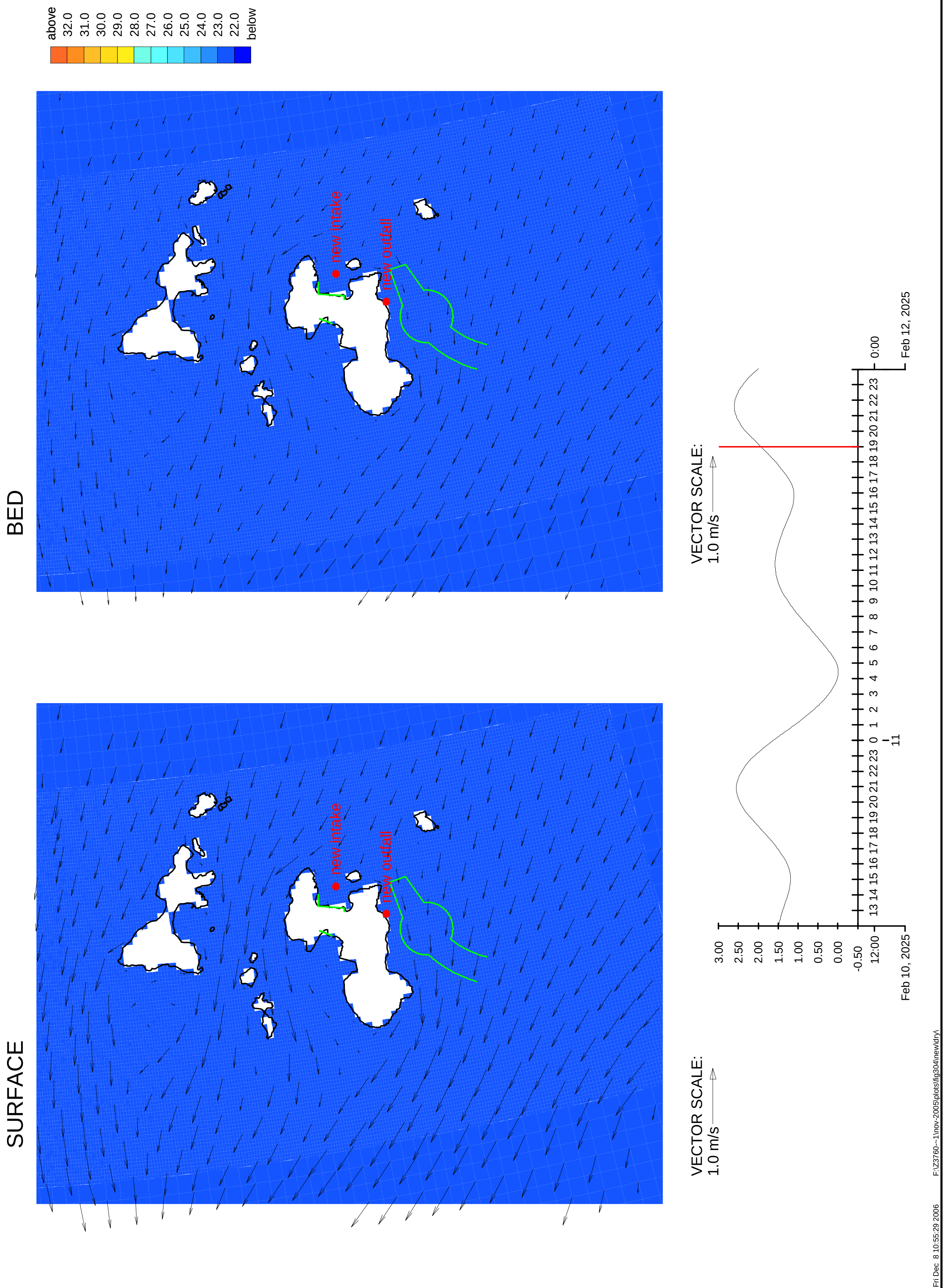
Fig. SK_E46

Annex 6F

# Operational Phase Model Results - Hydrodynamcis




| | | |
|---|---|---|
| Velocity Vector (m/s) and Temperature (Degree Celsius)<br>Dry Season, Mid-ebb, Surface (upper) & Bottom (lower)<br>Maximum project related discharges, 2011 | South Soko | |
| WL \| delft hydraulics | 0018180_eia57h | Fig. SK F01 |



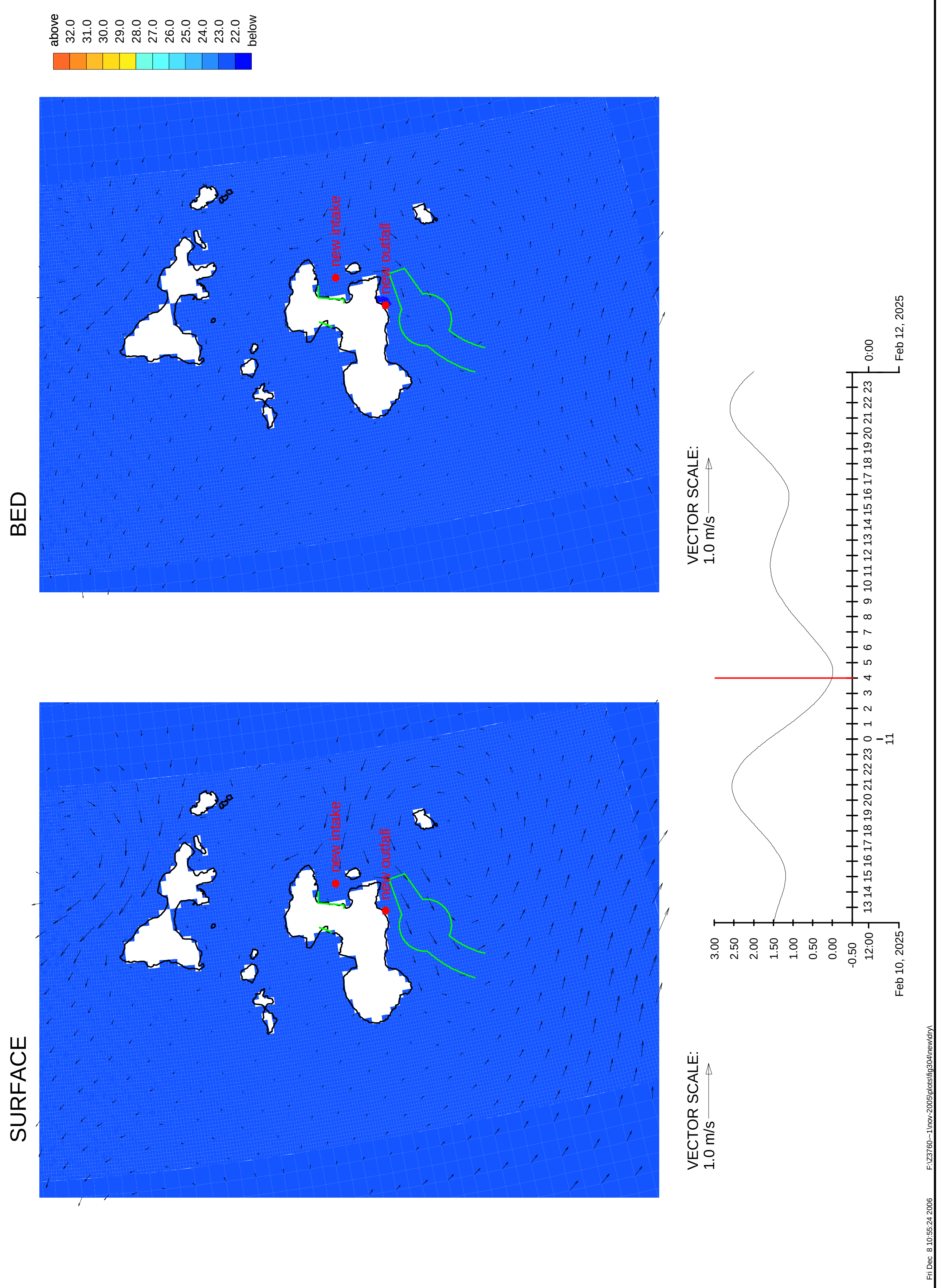

Velocity Vector (m/s) and Temperature (Degree Celsius)

Dry Season, Mid-flood, Surface (upper) & Bottom (lower)

Maximum project related discharges, 2011

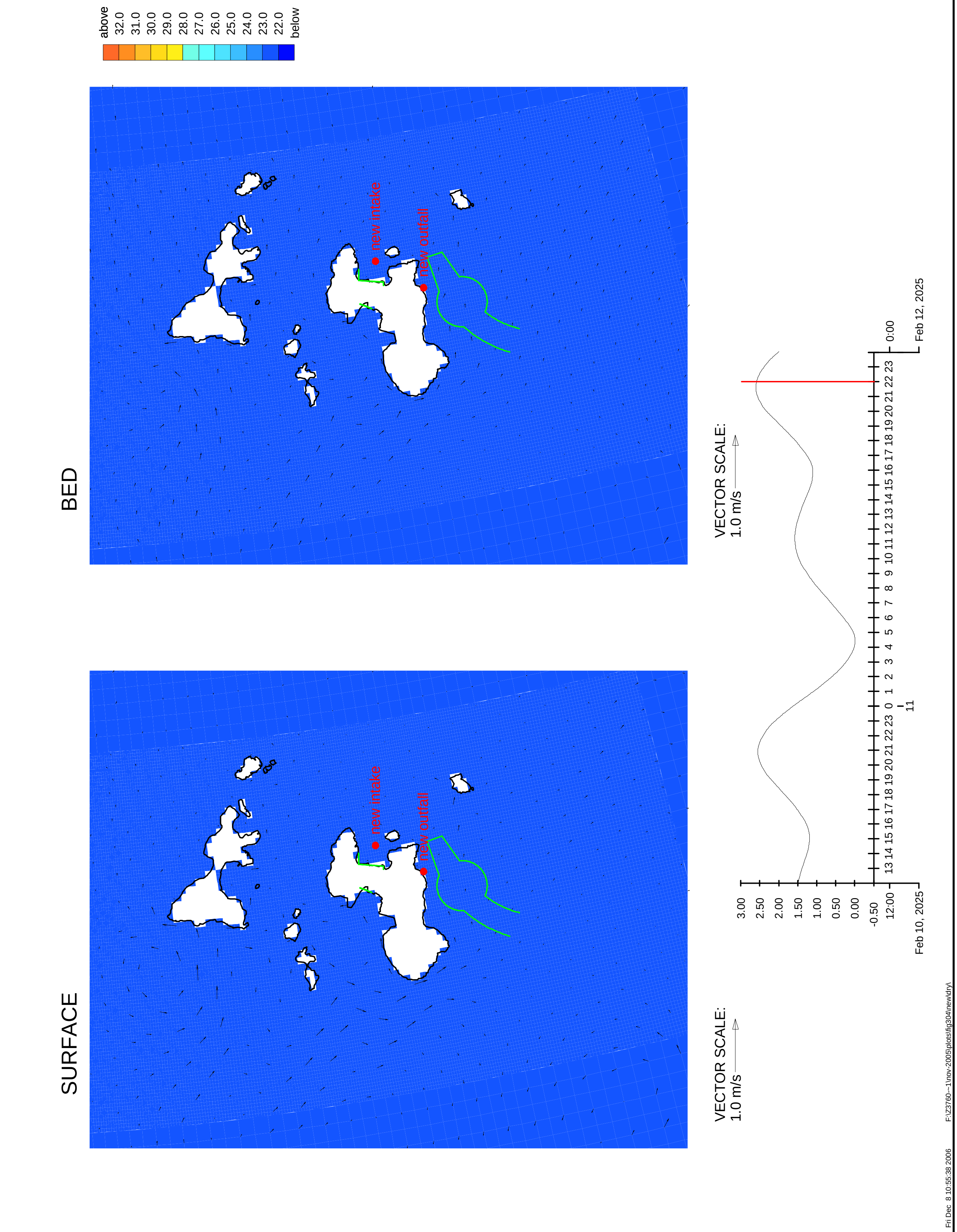
| | |
|---|---|
| South Soko | |
| 0018180_eia57i | Fig. SK F02 |

WL | delft hydraulics




Fri Dec 8 10:55:24 2006

| | | |
|---|---|---|
| Velocity Vector (m/s) and Temperature (Degree Celsius)<br>Dry Season, Low Water, Surface (upper) & Bottom (lower)<br>Maximum project related discharges, 2011 | | |
| | South Soko | |
| WL \| delft hydraulics | 0018180_eia57j | Fig. SK F03 |



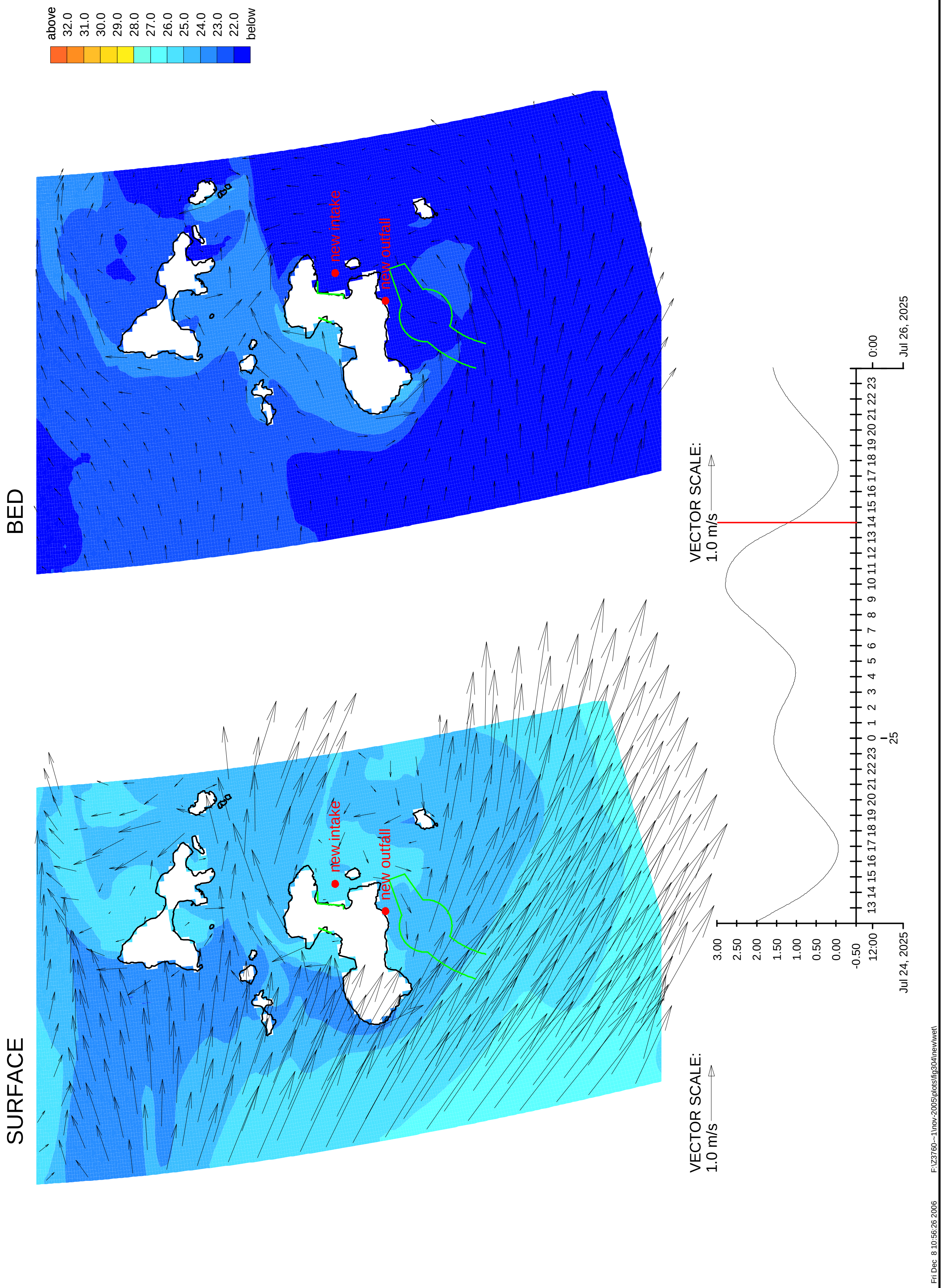

Velocity Vector (m/s) and Temperature (Degree Celsius)
Dry Season, High Water, Surface (upper) & Bottom (lower)
Maximum project related discharges, 2011

South Soko

WL | delft hydraulics

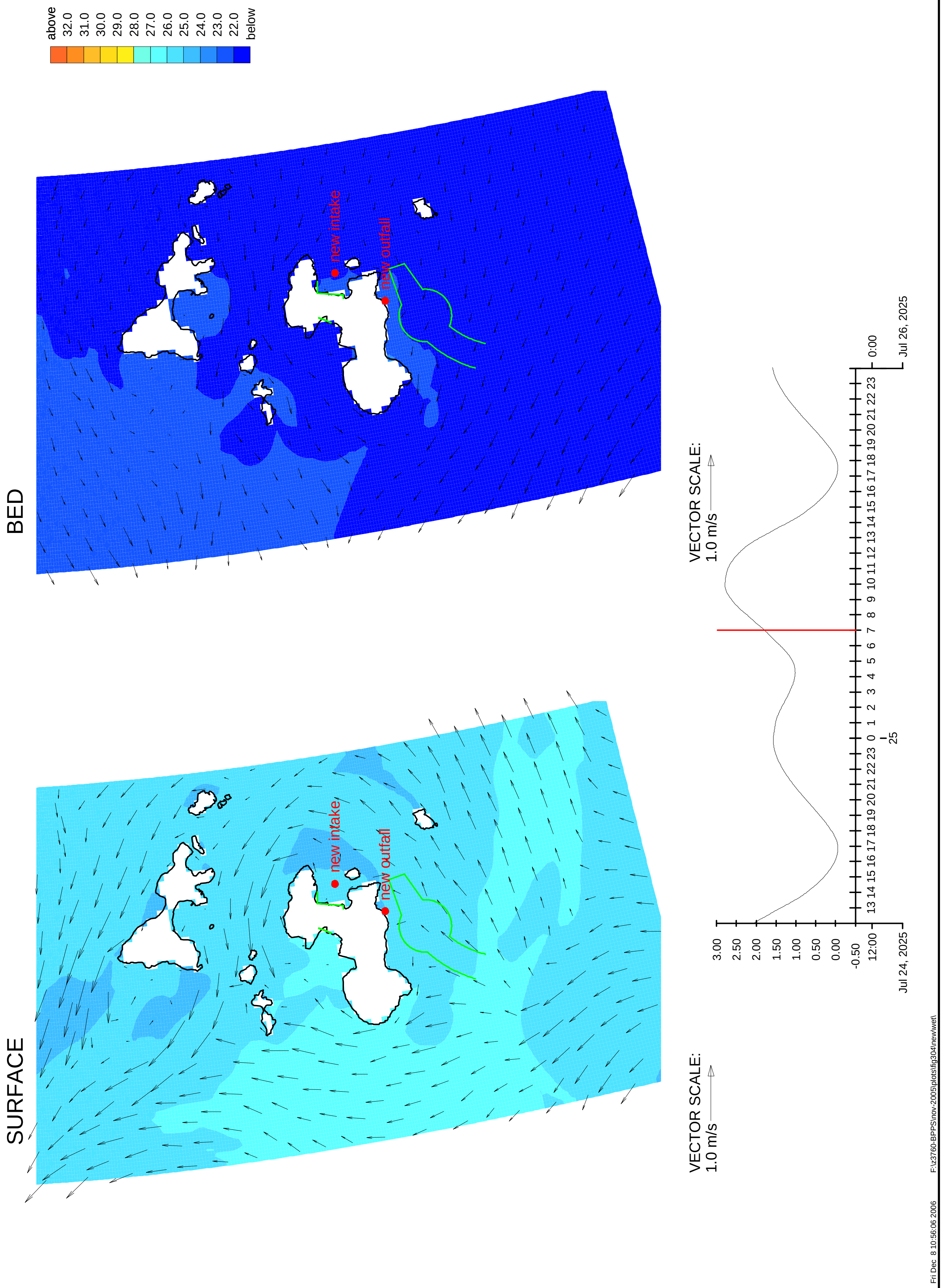
0018180_eia57k

Fig. SK F04



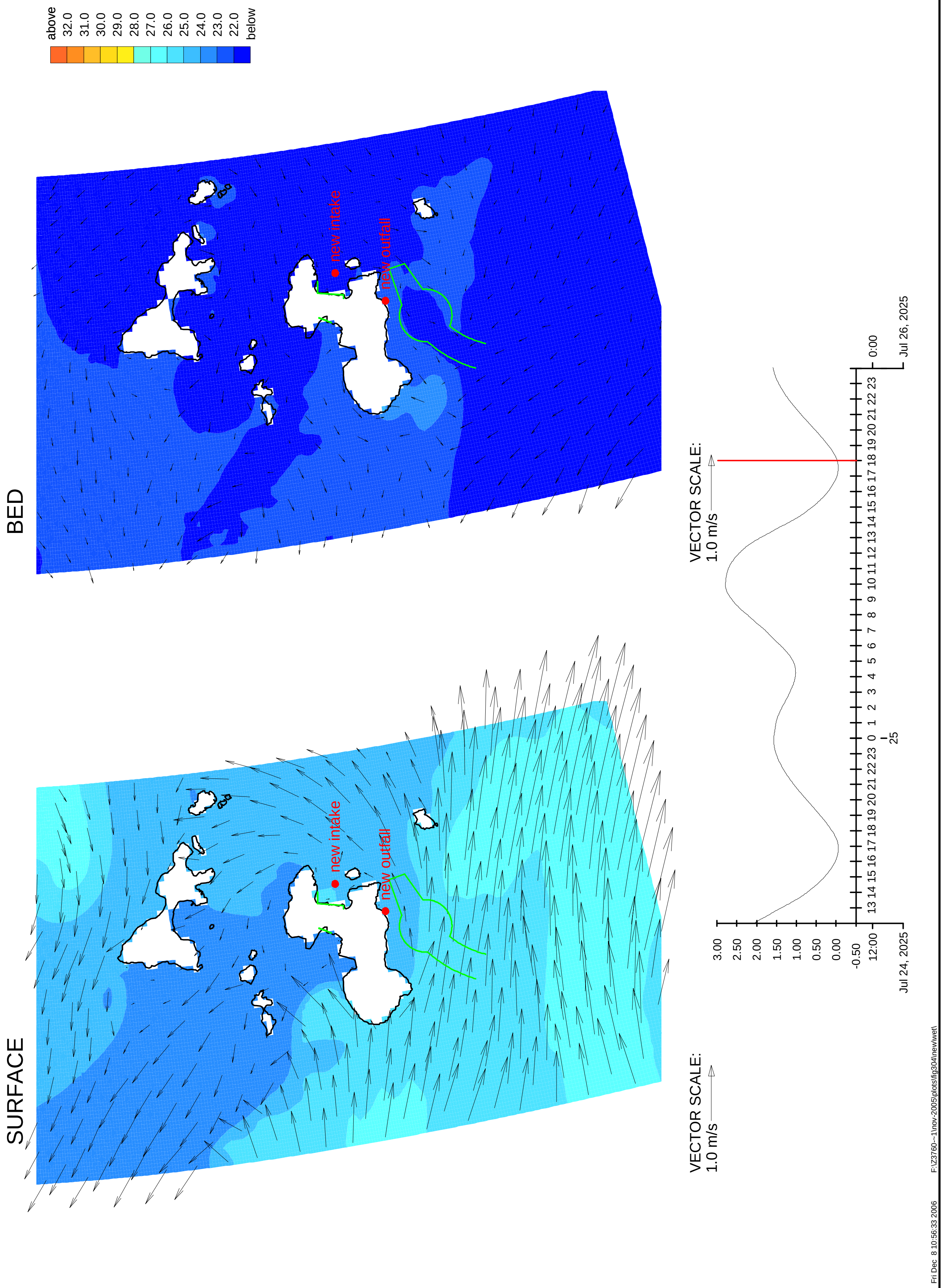

Velocity Vector (m/s) and Temperature (Degree Celsius)
Wet Season, Mid-ebb, Surface (upper) & Bottom (lower)
Maximum project related discharges, 2011

| | | |
|---|---|---|
| | | |
| | South Soko | |
| WL \| delft hydraulics | 0018180_eia57l | Fig. SK F05 |




Velocity Vector (m/s) and Temperature (Degree Celsius)
Wet Season, Mid-flood, Surface (upper) & Bottom (lower)
Maximum project related discharges, 2011

| | | |
|---|---|---|
| | | |
| | South Soko | |
| WL \| delft hydraulics | 0018180_eia57m | Fig. SK F06 |

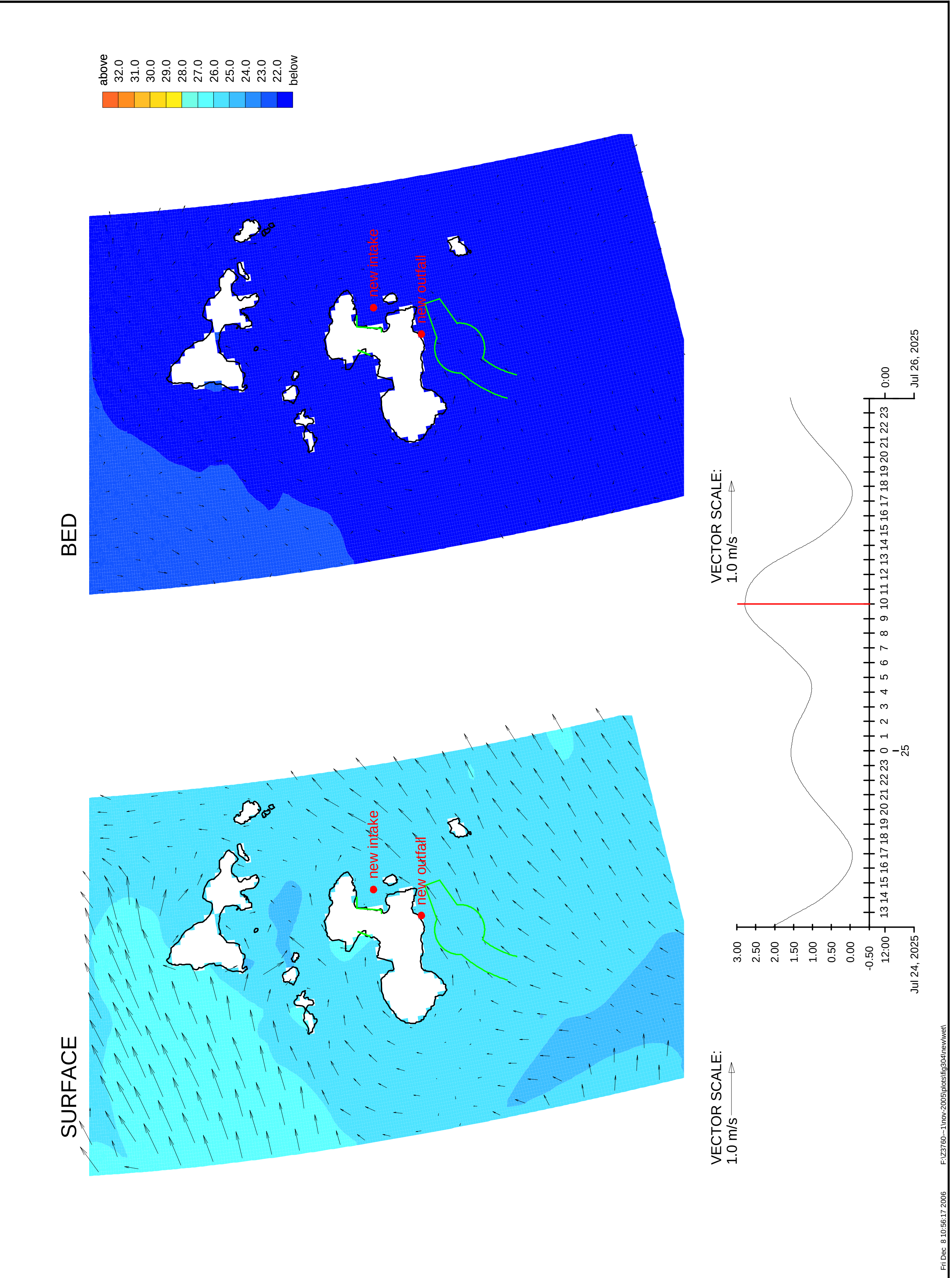



Velocity Vector (m/s) and Temperature (Degree Celsius)

Wet Season, Low Water, Surface (upper) & Bottom (lower)

Maximum project related discharges, 2011

| | |
|---|---|
| WL \| delft hydraulics | South Soko |
| 0018180_eia57n | Fig. SK F07 |

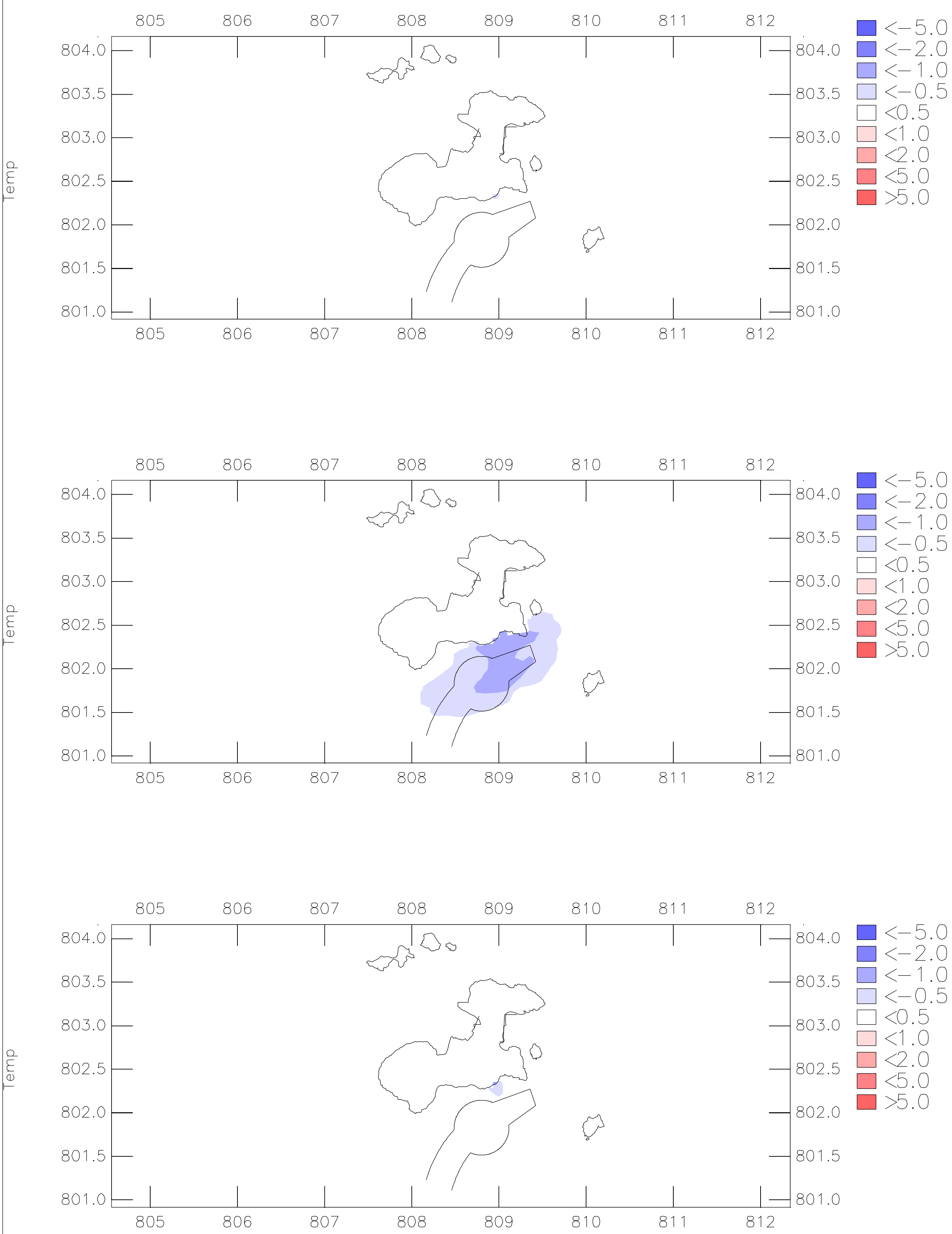



Velocity Vector (m/s) and Temperature (Degree Celsius)
Wet Season, High Water, Surface (upper) & Bottom (lower)
Maximum project related discharges, 2011

| | | |
|---|---|---|
| | | |
| | South Soko | |
| WL \| delft hydraulics | 0018180_eia57o | Fig. SK F08 |

Annex 6G

# Operational Phase Model Results - Cooled Water Discharges




Maximum Reduction in Temperature relative to baseline (deg. C)

Maximum discharge: −12.5 deg.C − South Soko

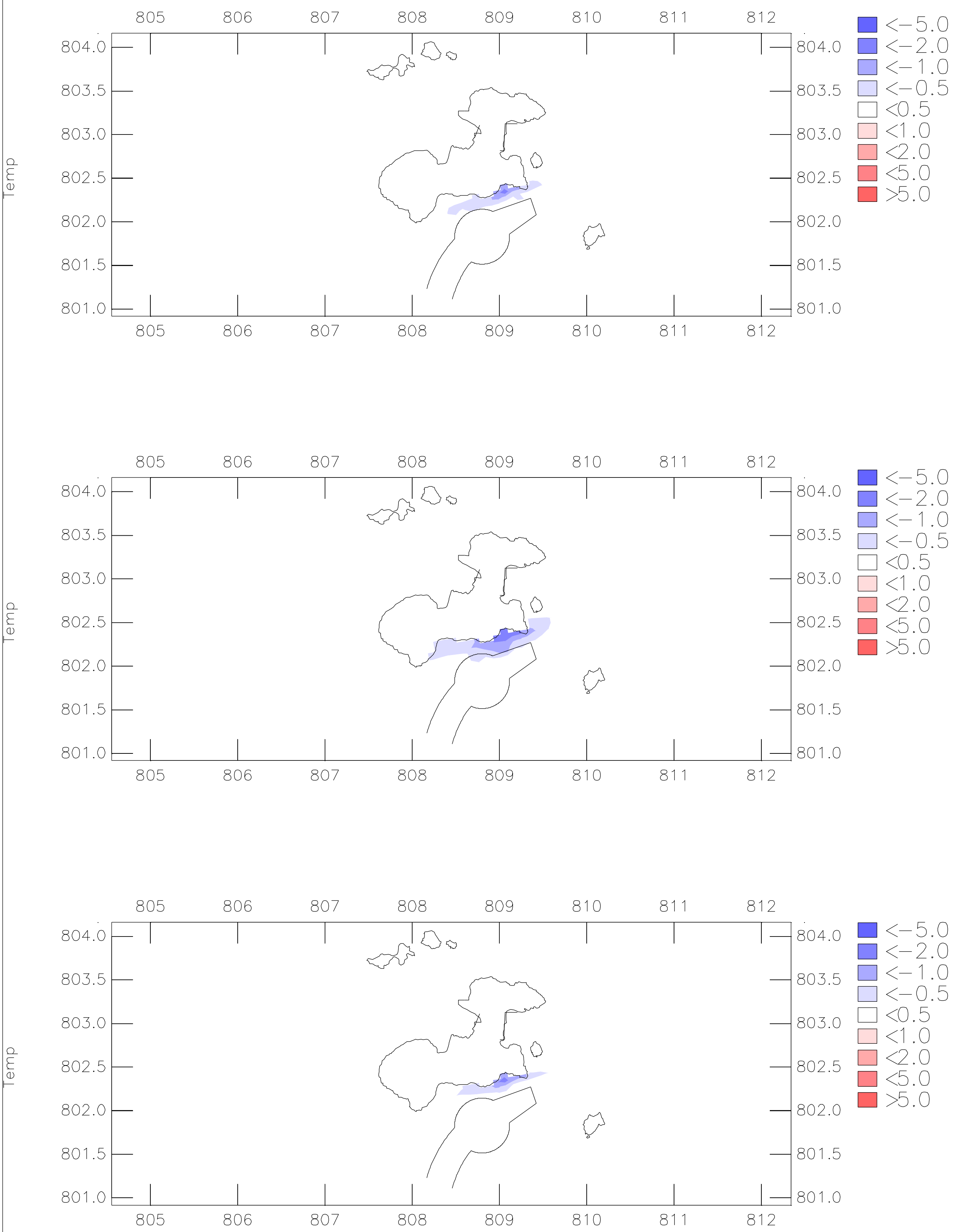
Surface (upper), Bottom (middle), Depth−average (lower)

Maximum Operational Flow

Dry Season

WL | Delft Hydraulics − ERM

Fig SK_G01




Maximum Reduction in Temperature relative to baseline (deg. C)

Maximum discharge: −12.5 deg.C − South Soko

Surface (upper), Bottom (middle), Depth−average (lower)

Maximum Operational Flow

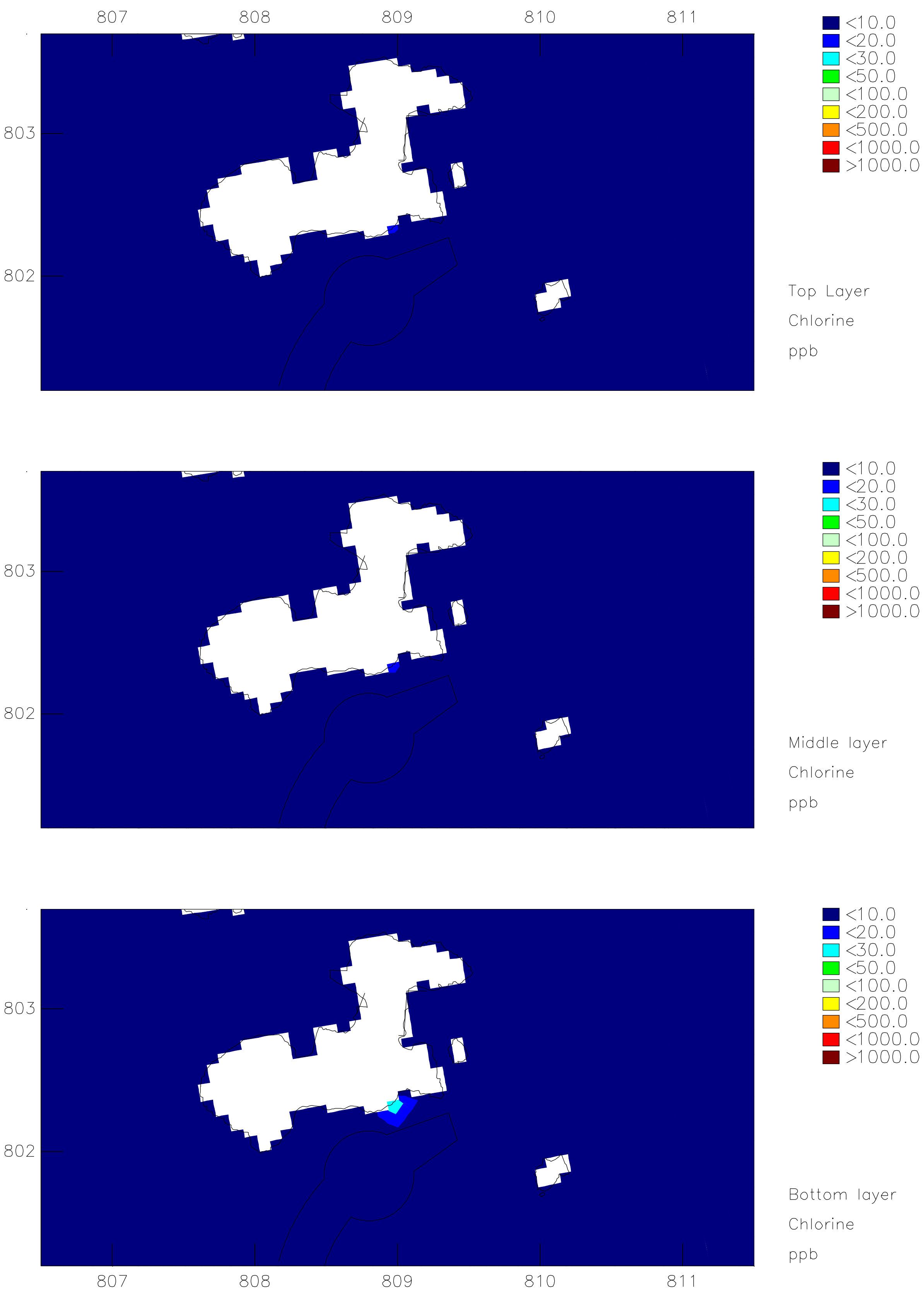
Wet Season

WL | Delft Hydraulics − ERM

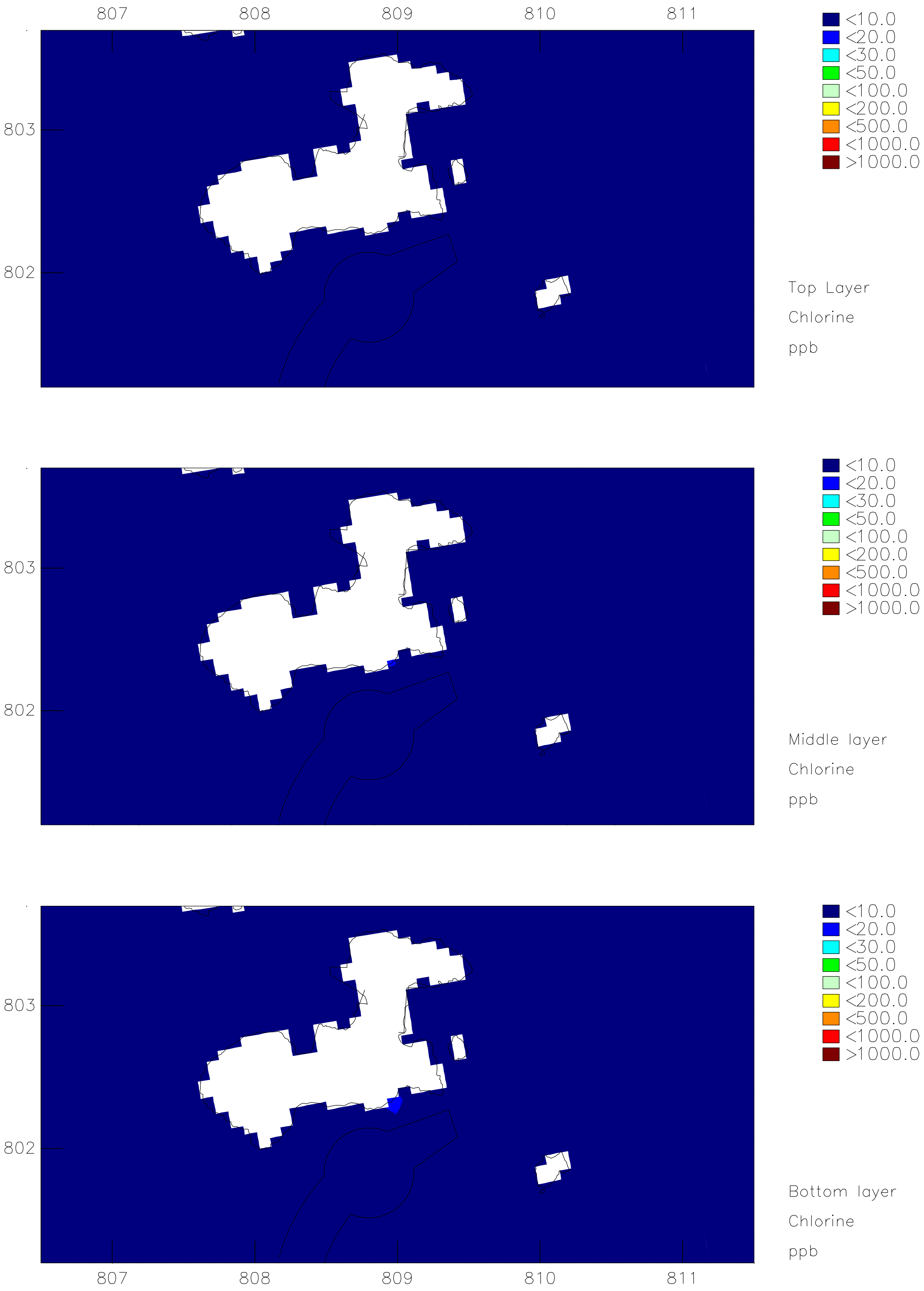
Fig SK_G02

Annex 6H

# Operational Phase Model Results - Total Residual Chlorine




| Total Residual Chlorine (ppb) maximum elevation<br>South Soko LNG emission – Maximum Flow<br>Top, Middle and Bottom layer | | |
|---|---|---|
| | Dry Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_H01 |

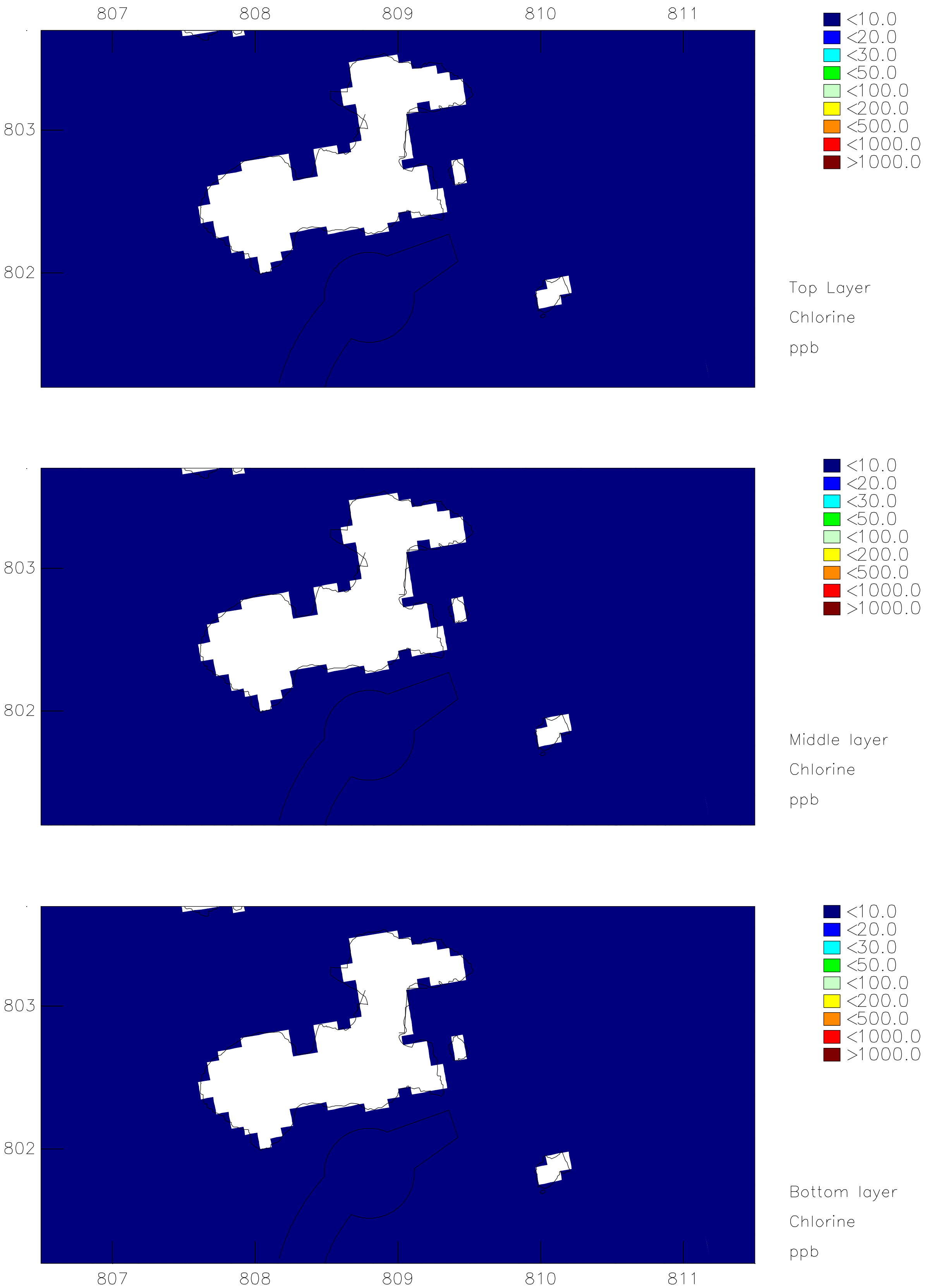



Total Residual Chlorine (ppb) mean elevation
South Soko LNG emission – Maximum Flow
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H02

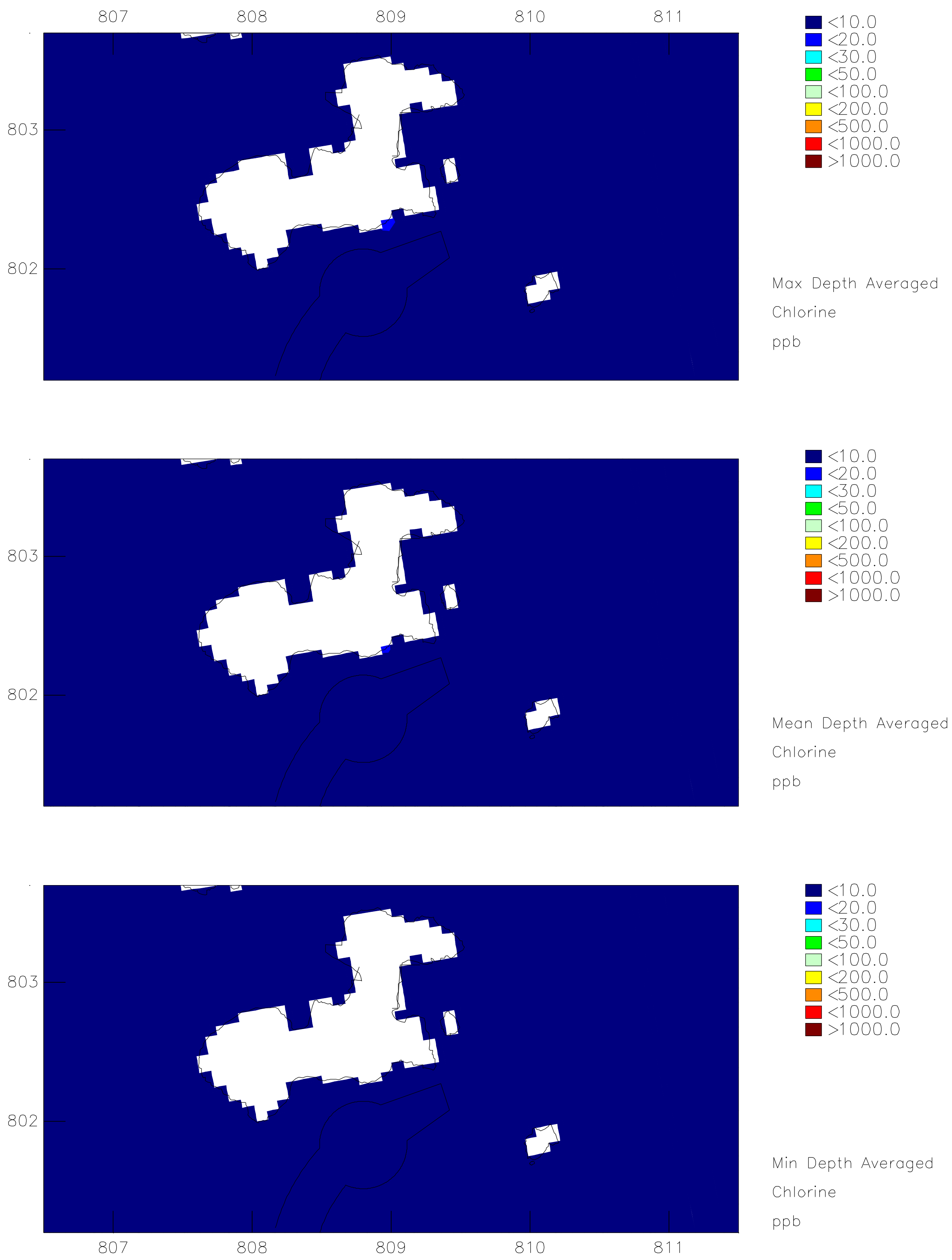



Total Residual Chlorine (ppb) minimum elevation
South Soko LNG emission – Maximum Flow
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H03

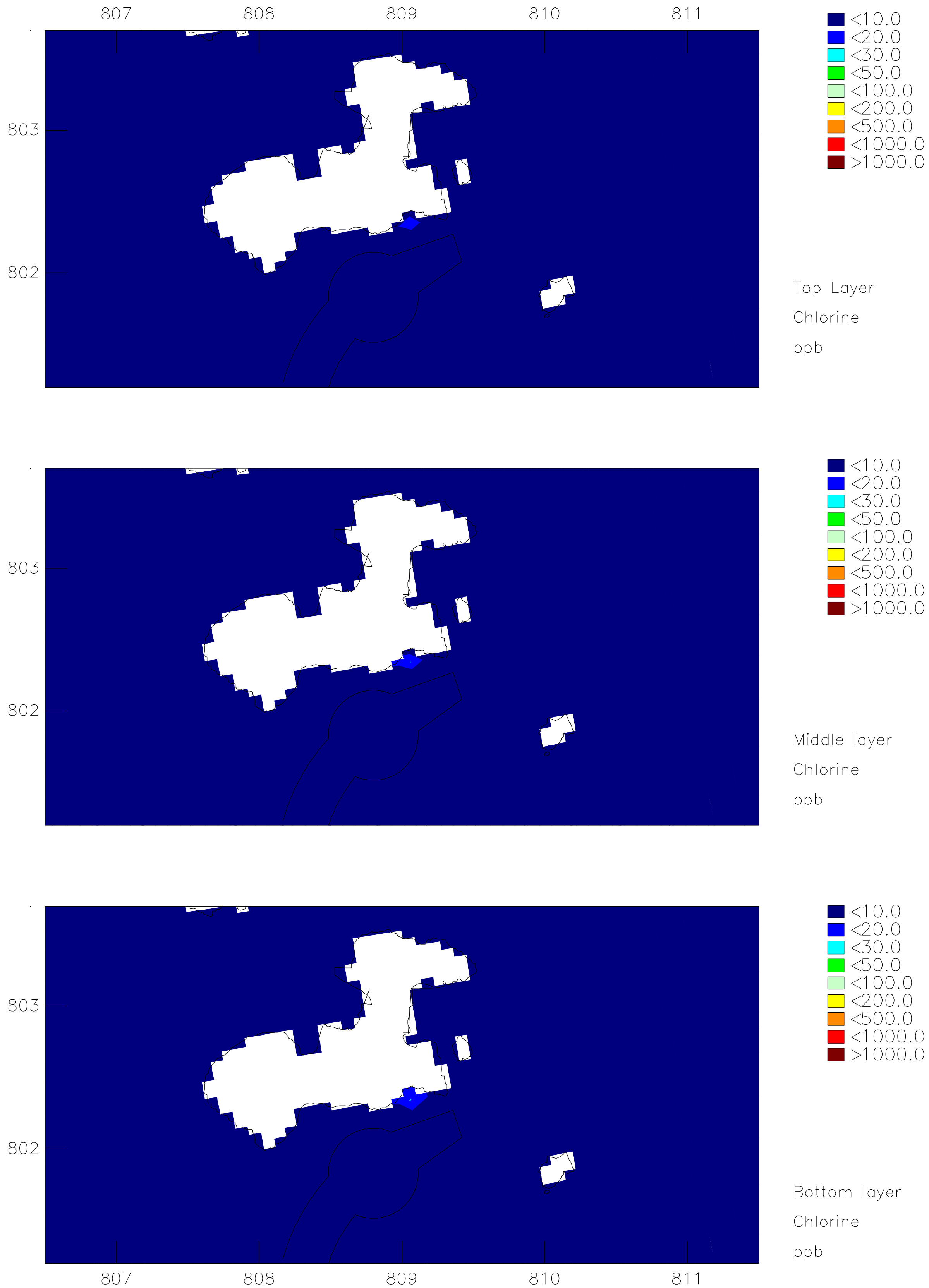



Total Residual Chlorine (ppb)
South Soko LNG emission – Maximum Flow
Maximum, Mean and Minimum depth averaged elevation

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H04

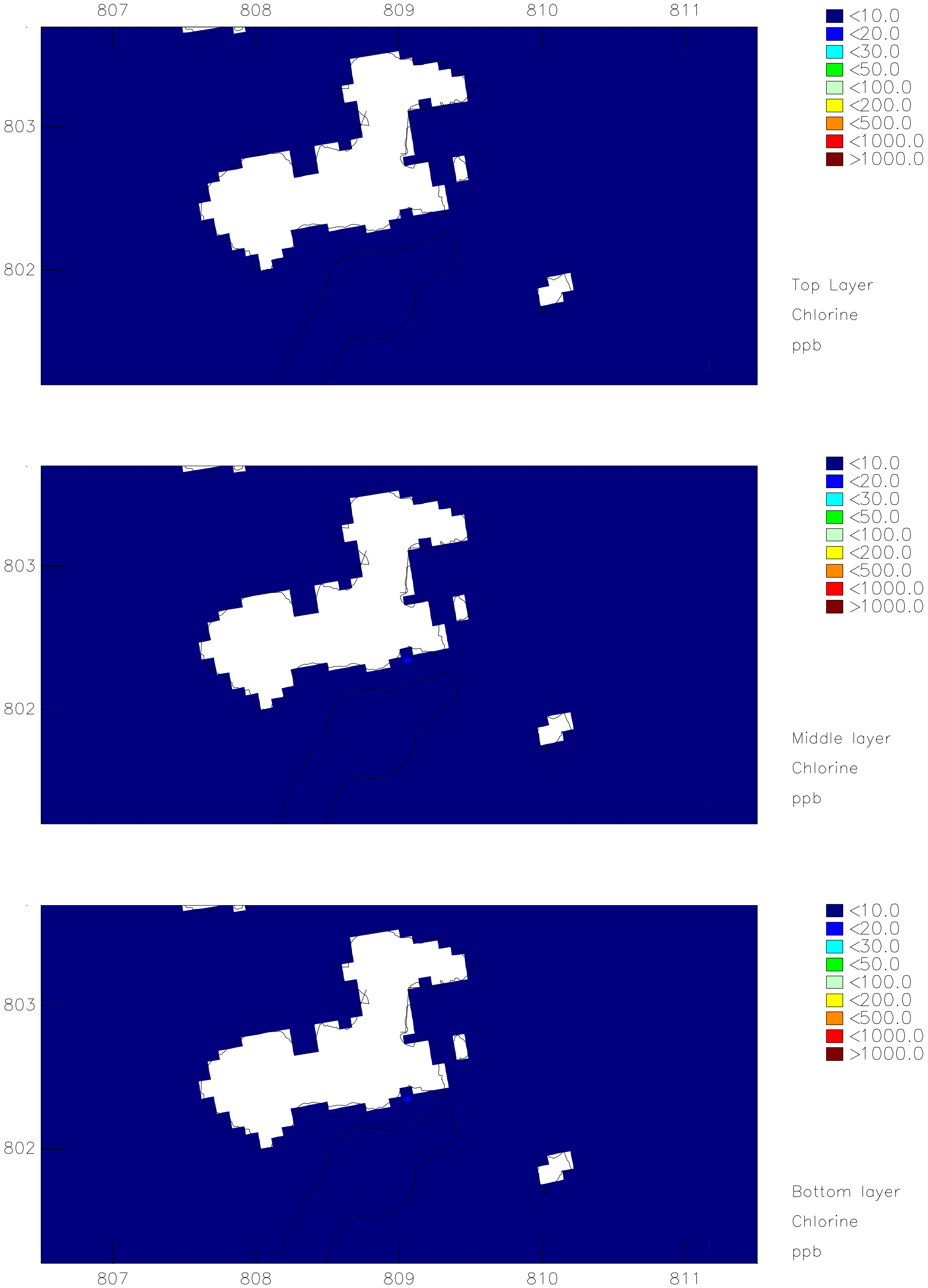



Total Residual Chlorine (ppb) maximum elevation
South Soko LNG emission – Maximum Flow
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H05

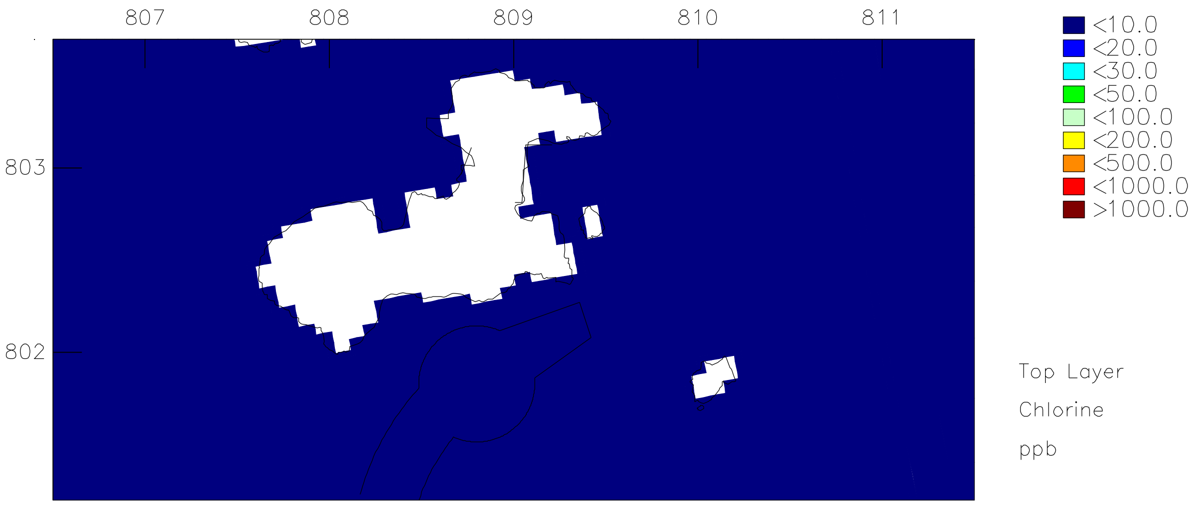


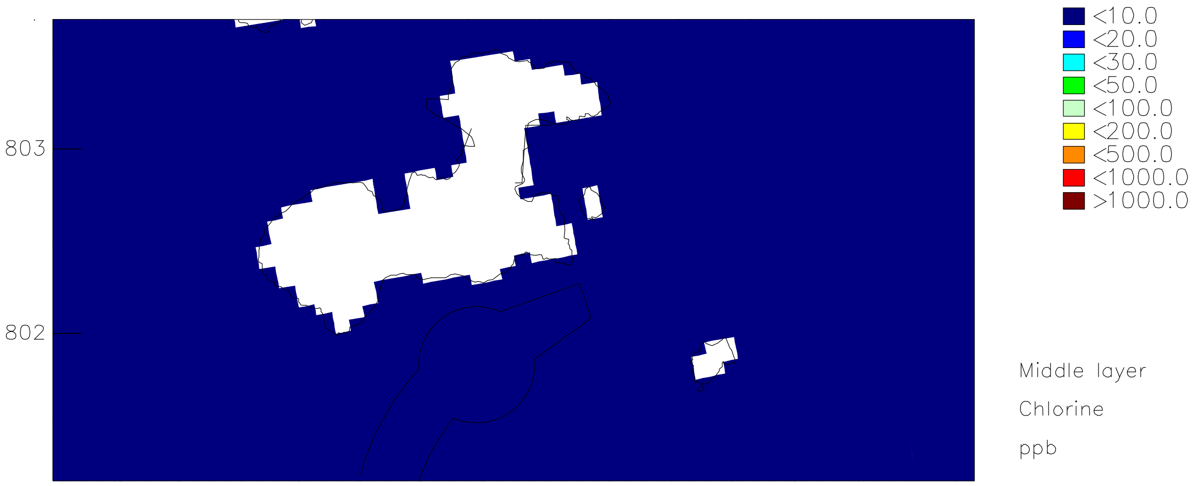

Total Residual Chlorine (ppb) mean elevation
South Soko LNG emission – Maximum Flow
Top, Middle and Bottom layer

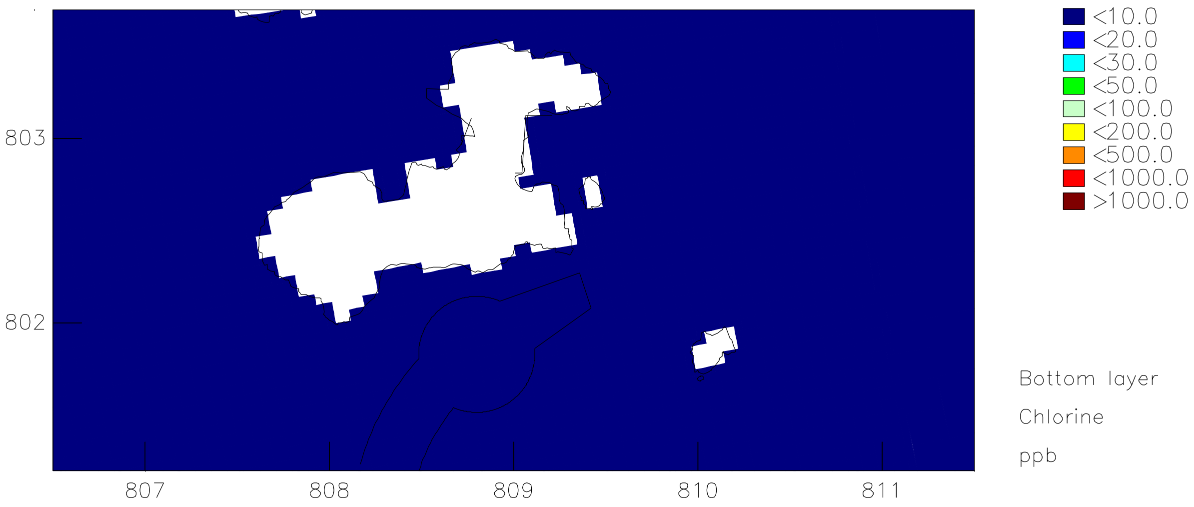
Wet Season

WL | Delft Hydraulics – ERM

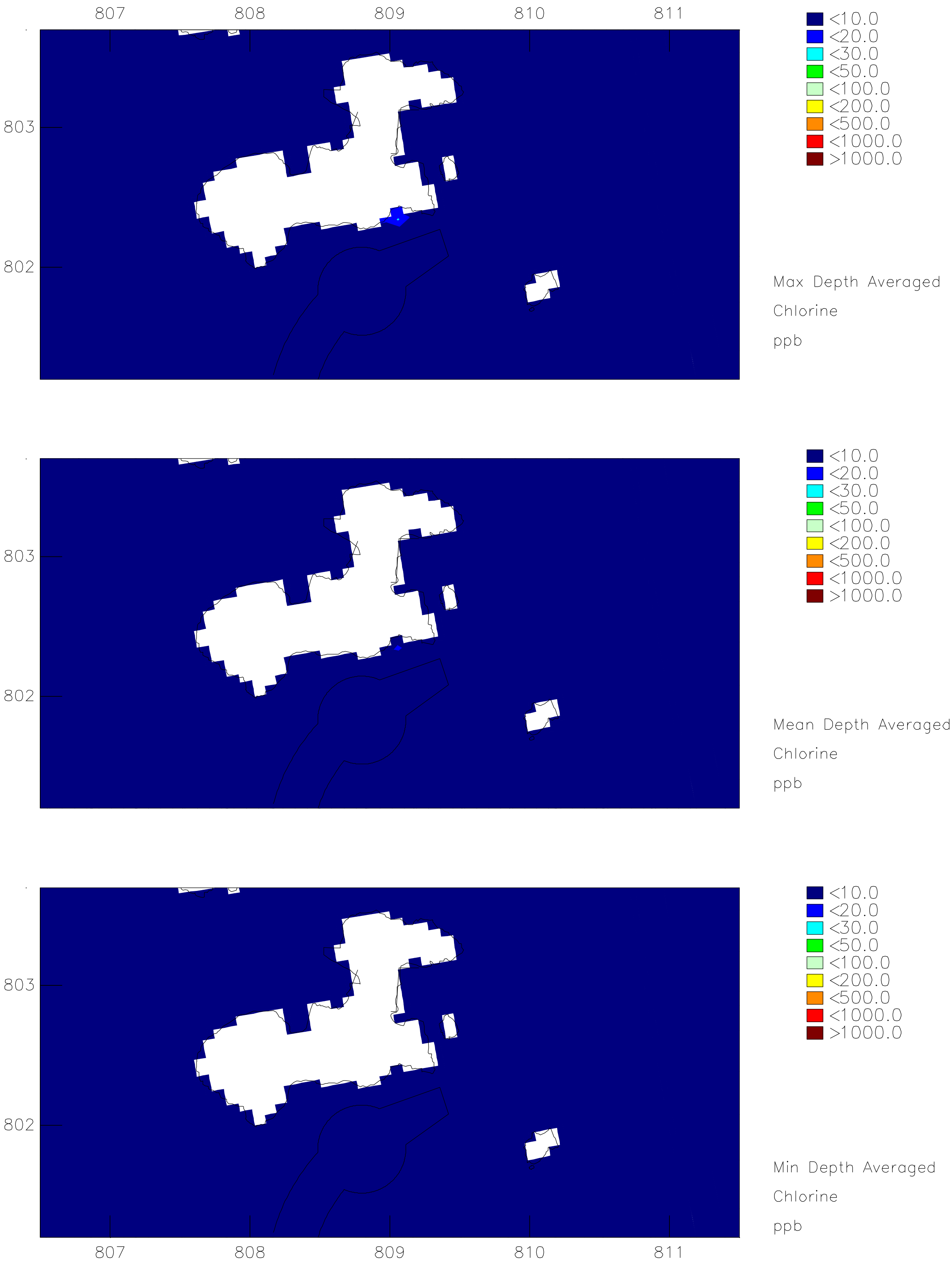
Figure SK_H06




| | |
|---|---|
| Total Residual Chlorine (ppb) minimum elevation<br>South Soko LNG emission – Maximum Flow<br>Top, Middle and Bottom layer | Wet Season |
| WL \| Delft Hydraulics – ERM | Figure SK_H07 |

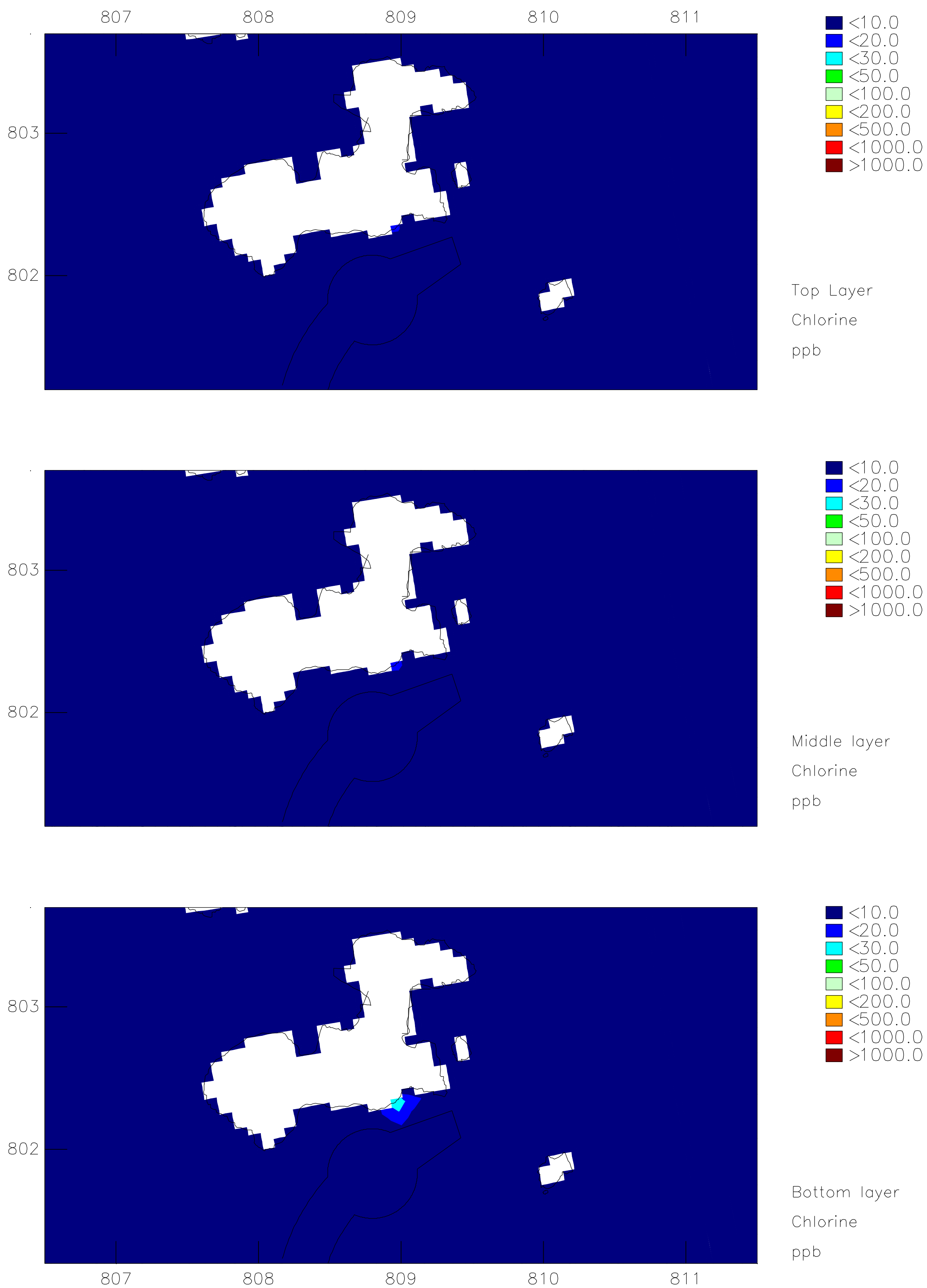



Total Residual Chlorine (ppb)
South Soko LNG emission – Maximum Flow
Maximum, Mean and Minimum depth averaged elevation

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H08

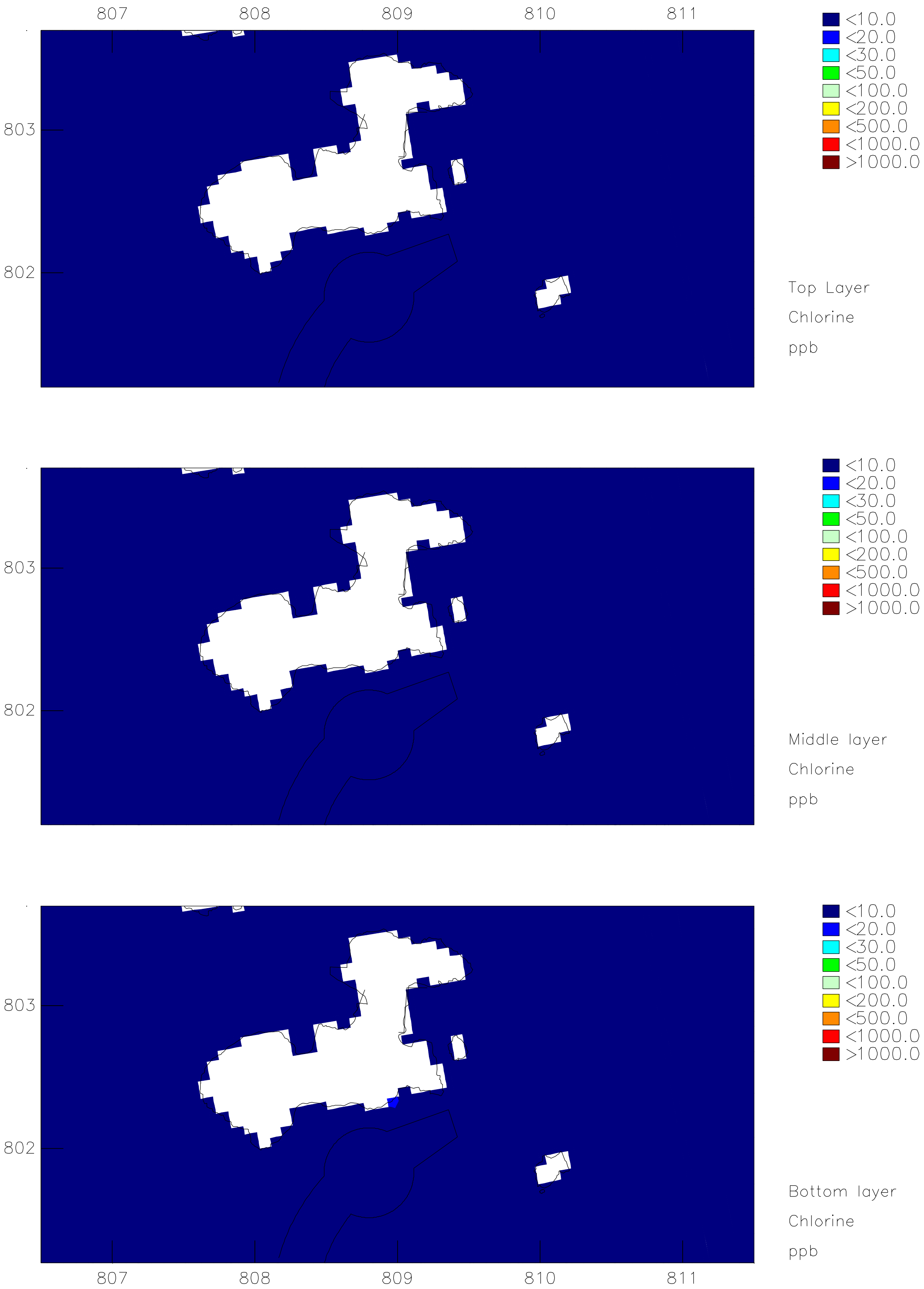



Total Residual Chlorine (ppb) maximum elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H09

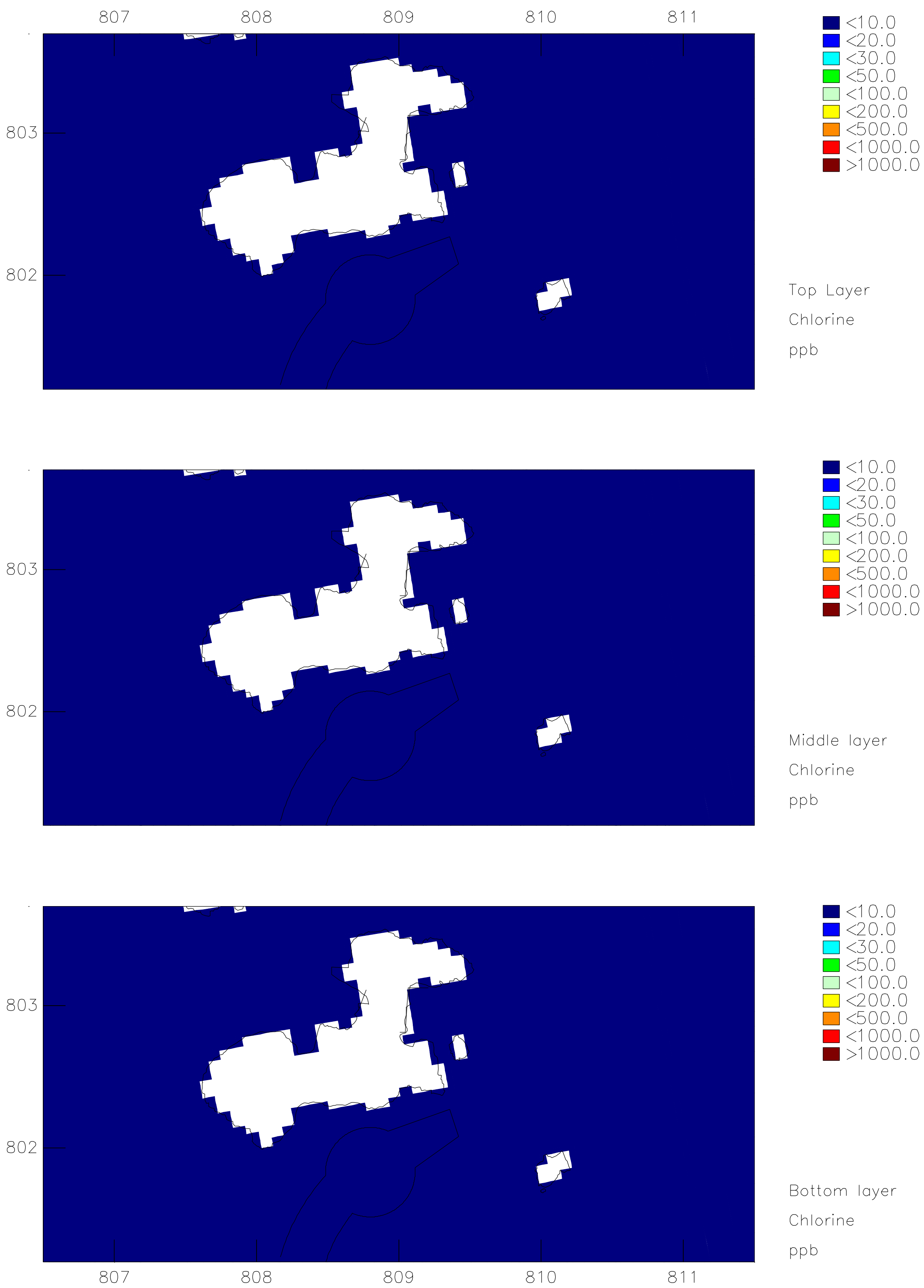



Total Residual Chlorine (ppb) mean elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H10

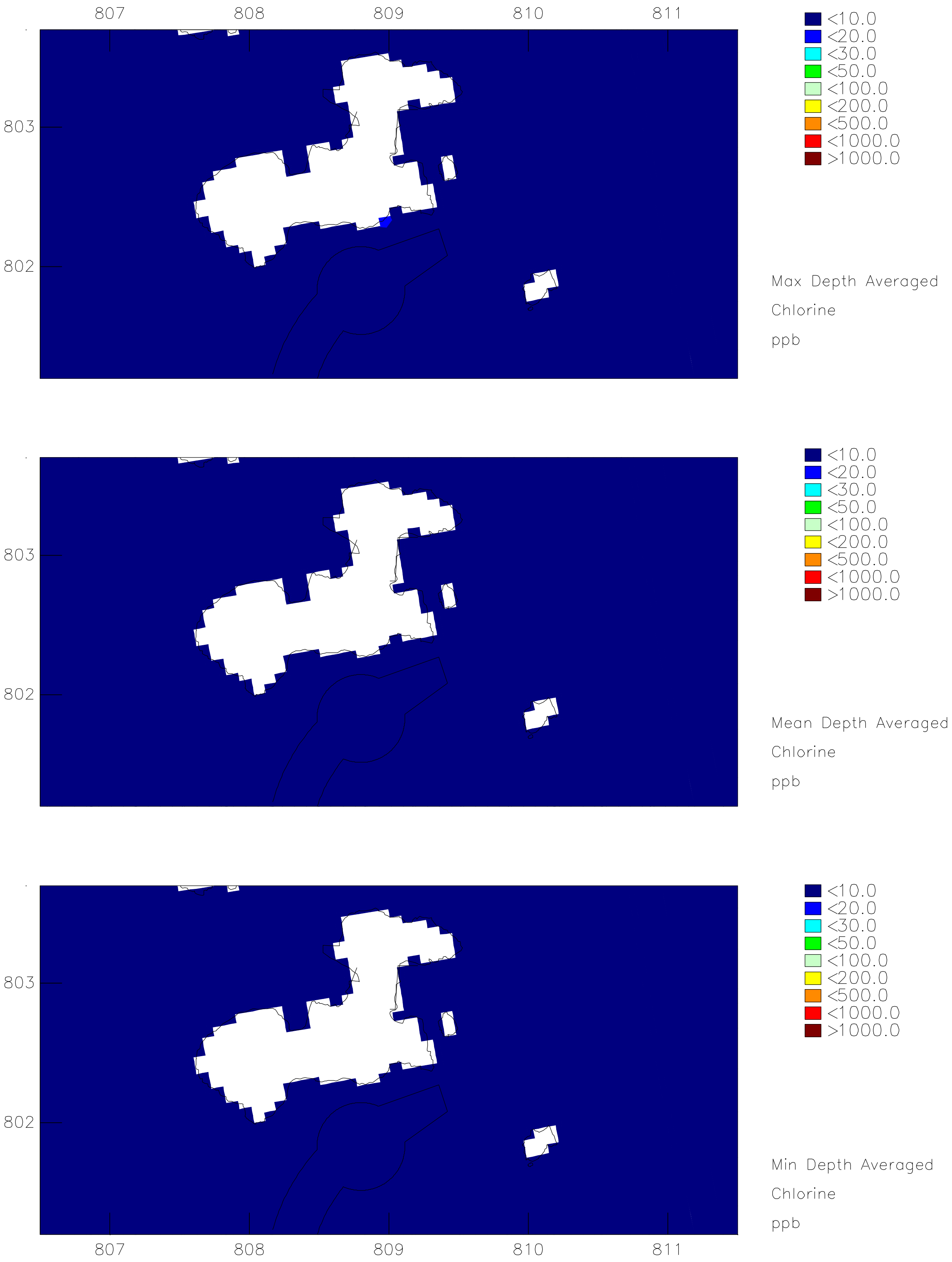



Total Residual Chlorine (ppb) minimum elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H11

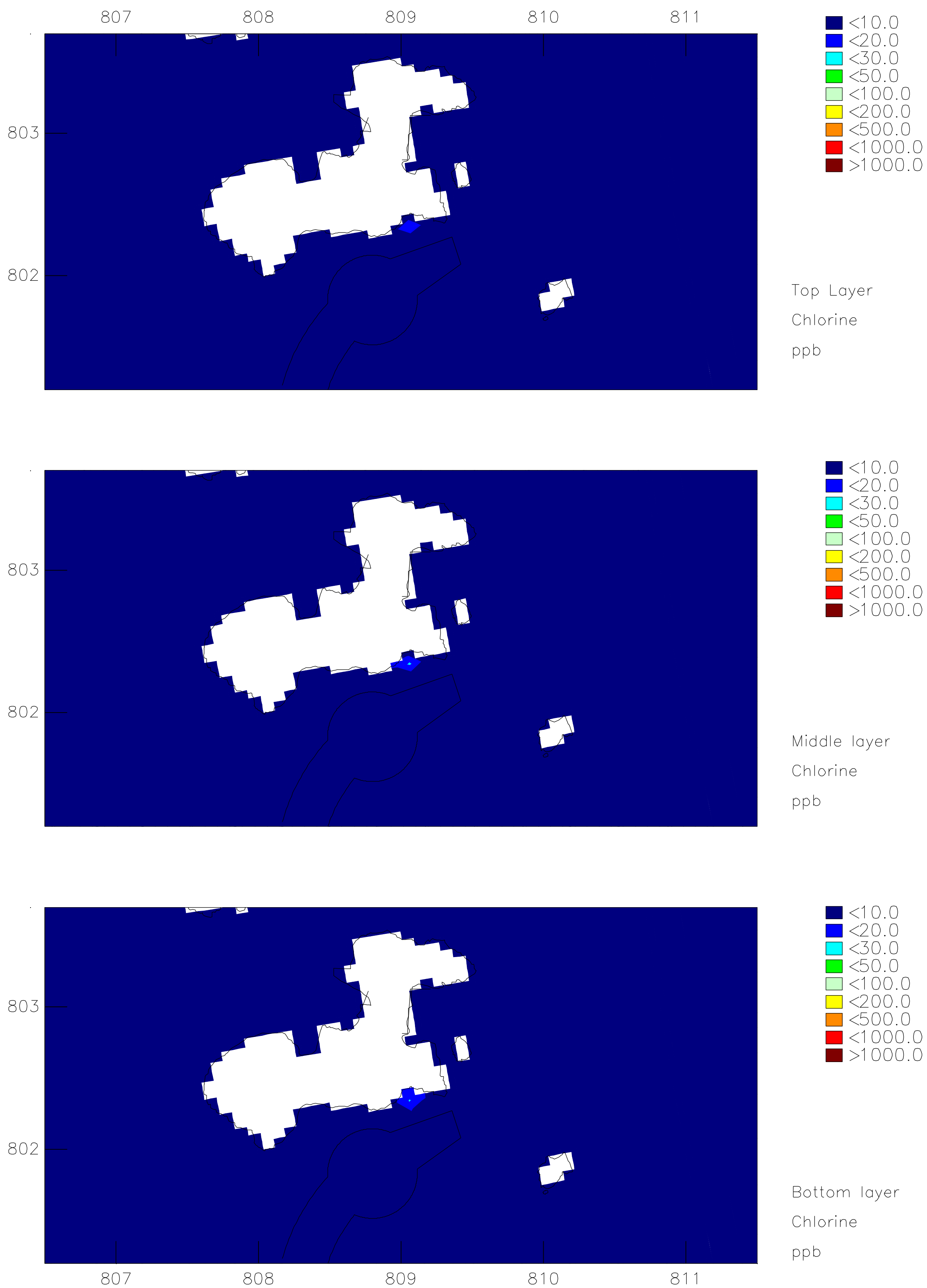



Total Residual Chlorine (ppb)
South Soko LNG emission – Seasonal Varied Flow
Maximum, Mean and Minimum depth averaged elevation

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_H12

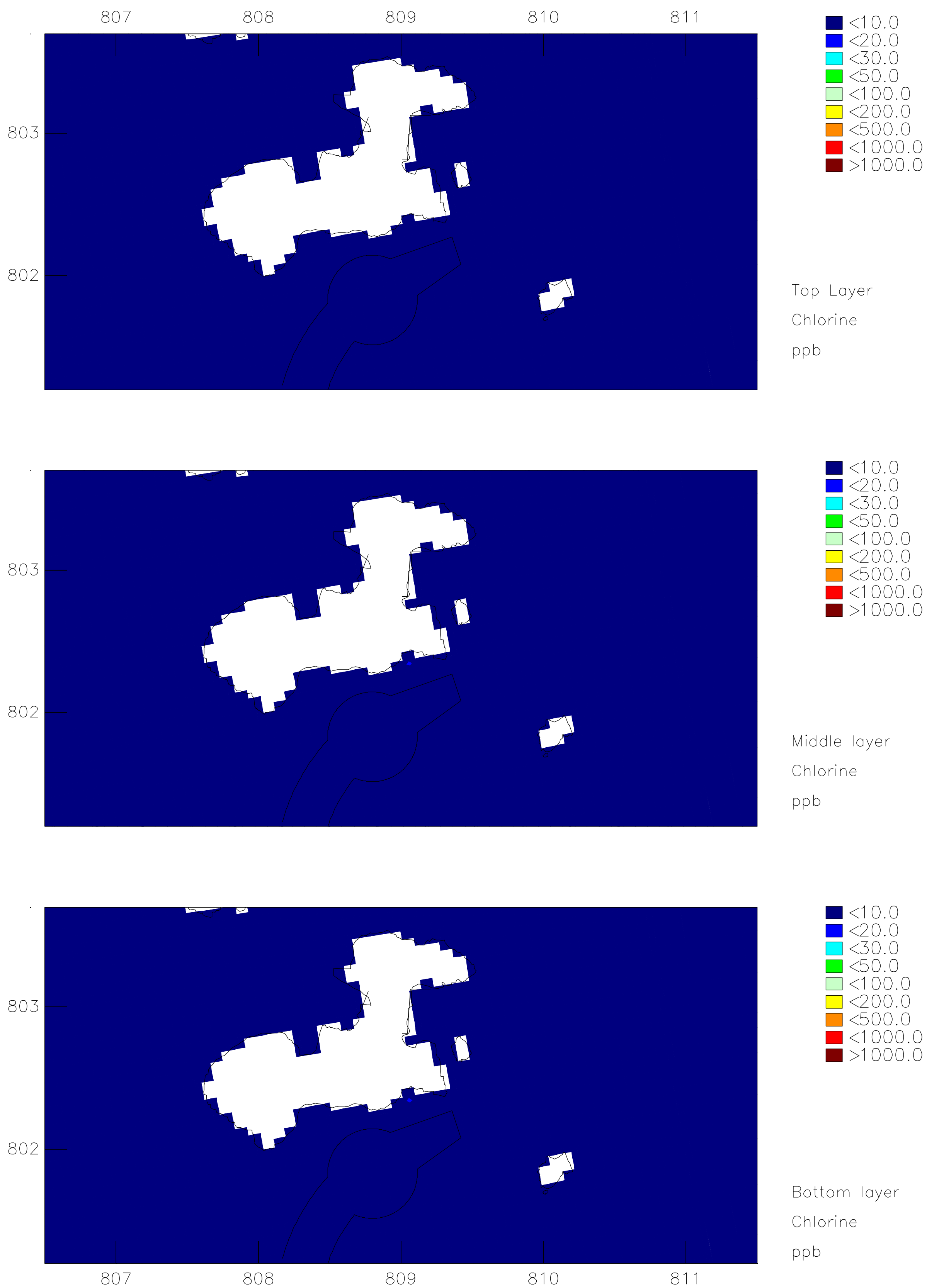



Total Residual Chlorine (ppb) maximum elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H13

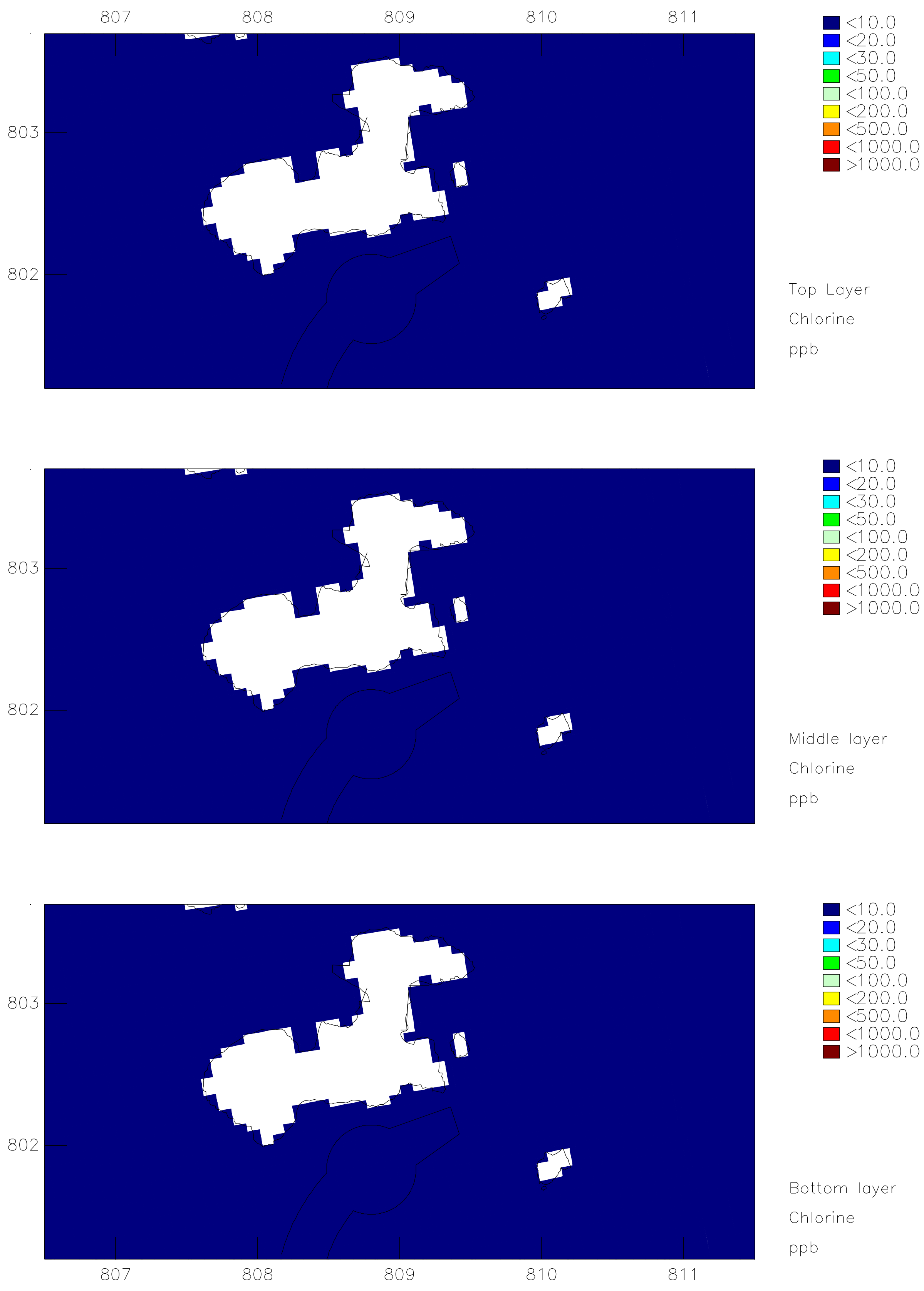



Total Residual Chlorine (ppb) mean elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H14

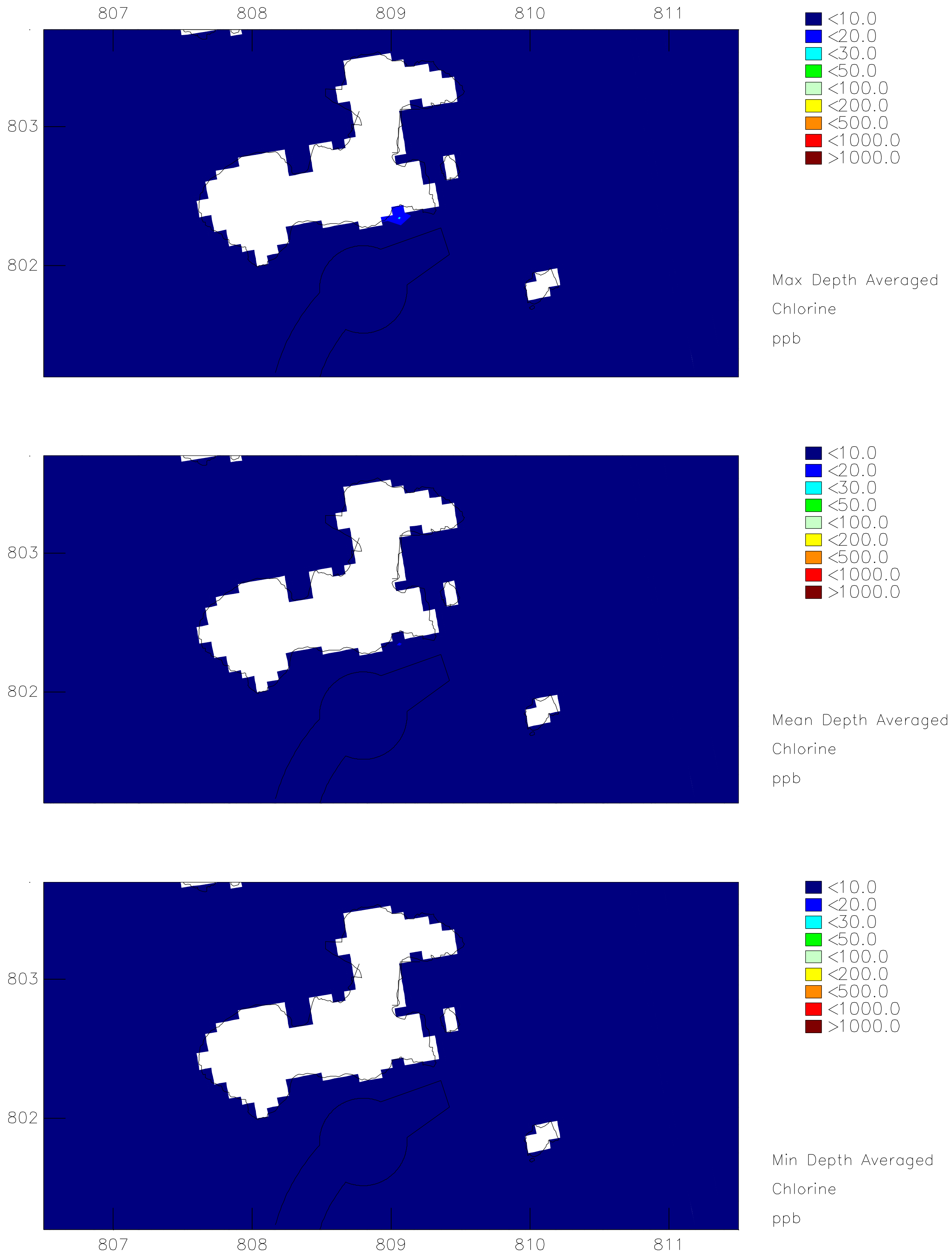



Total Residual Chlorine (ppb) minimum elevation
South Soko LNG emission – Seasonal Varied Flow
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H15




Total Residual Chlorine (ppb)
South Soko LNG emission – Seasonal Varied Flow
Maximum, Mean and Minimum depth averaged elevation

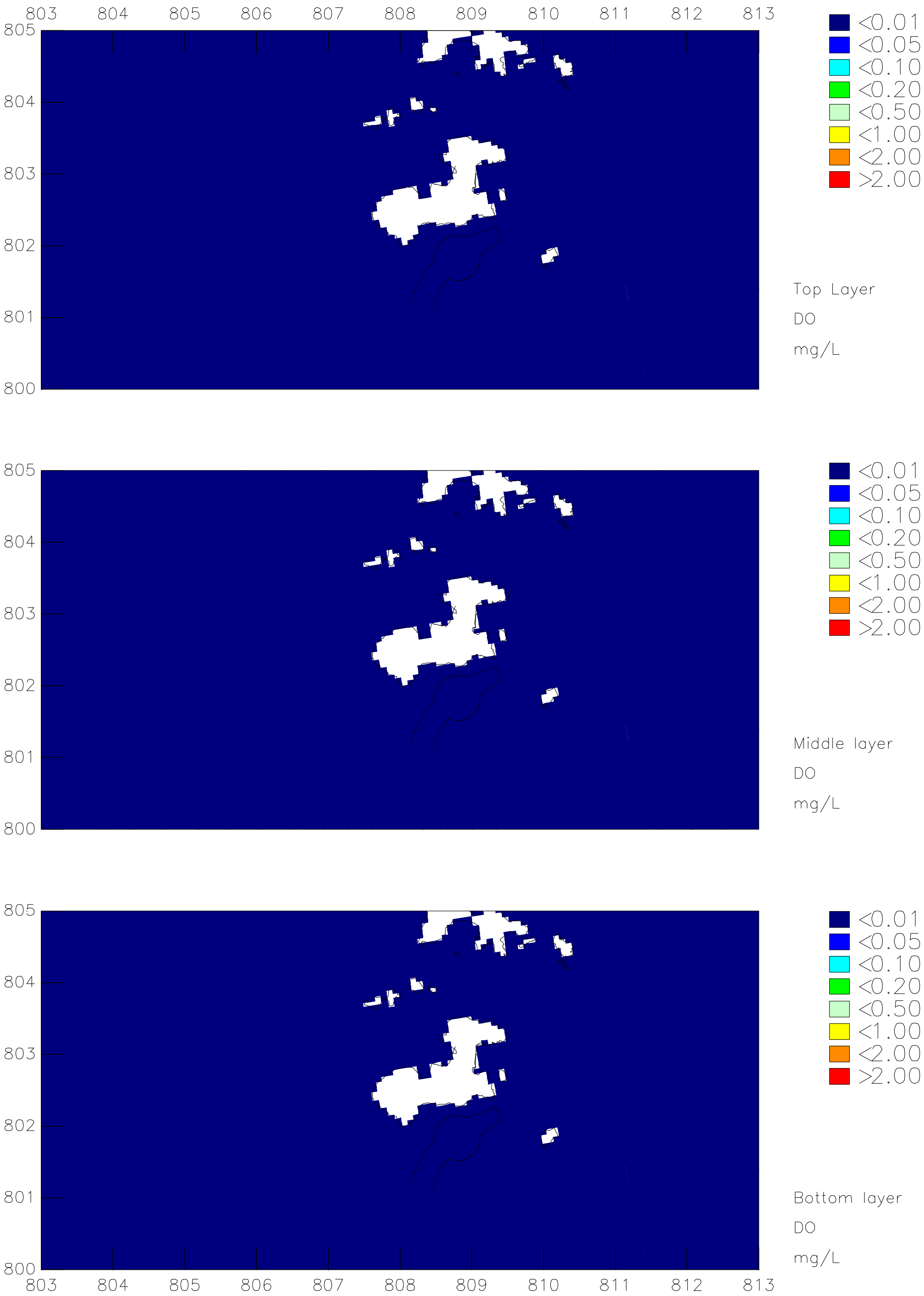
Wet Season

WL | Delft Hydraulics – ERM

Figure SK_H16

Annex 6I

# Operational Phase Model Results - Wastewater Discharges

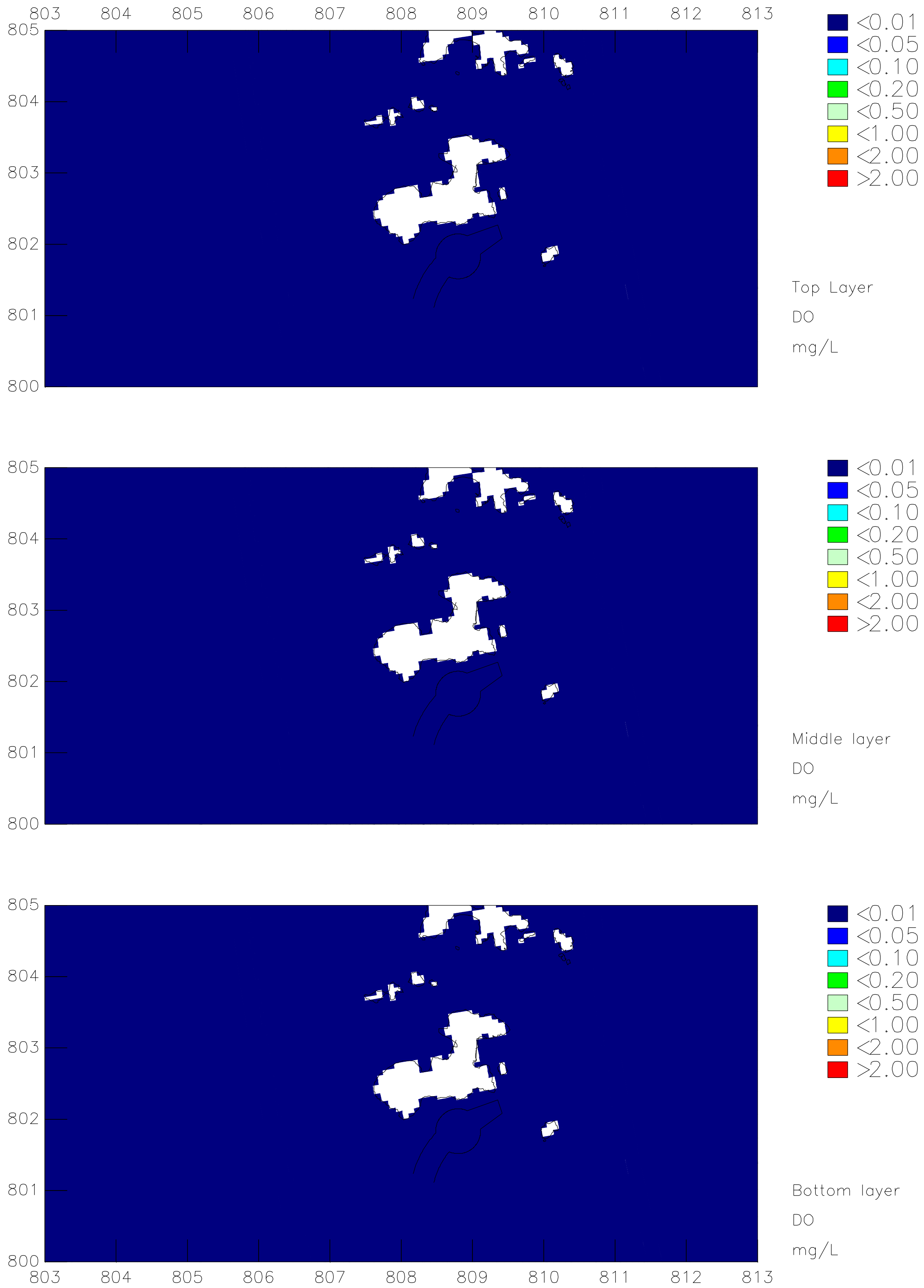



DO (mg/L) maximum decrease
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-01

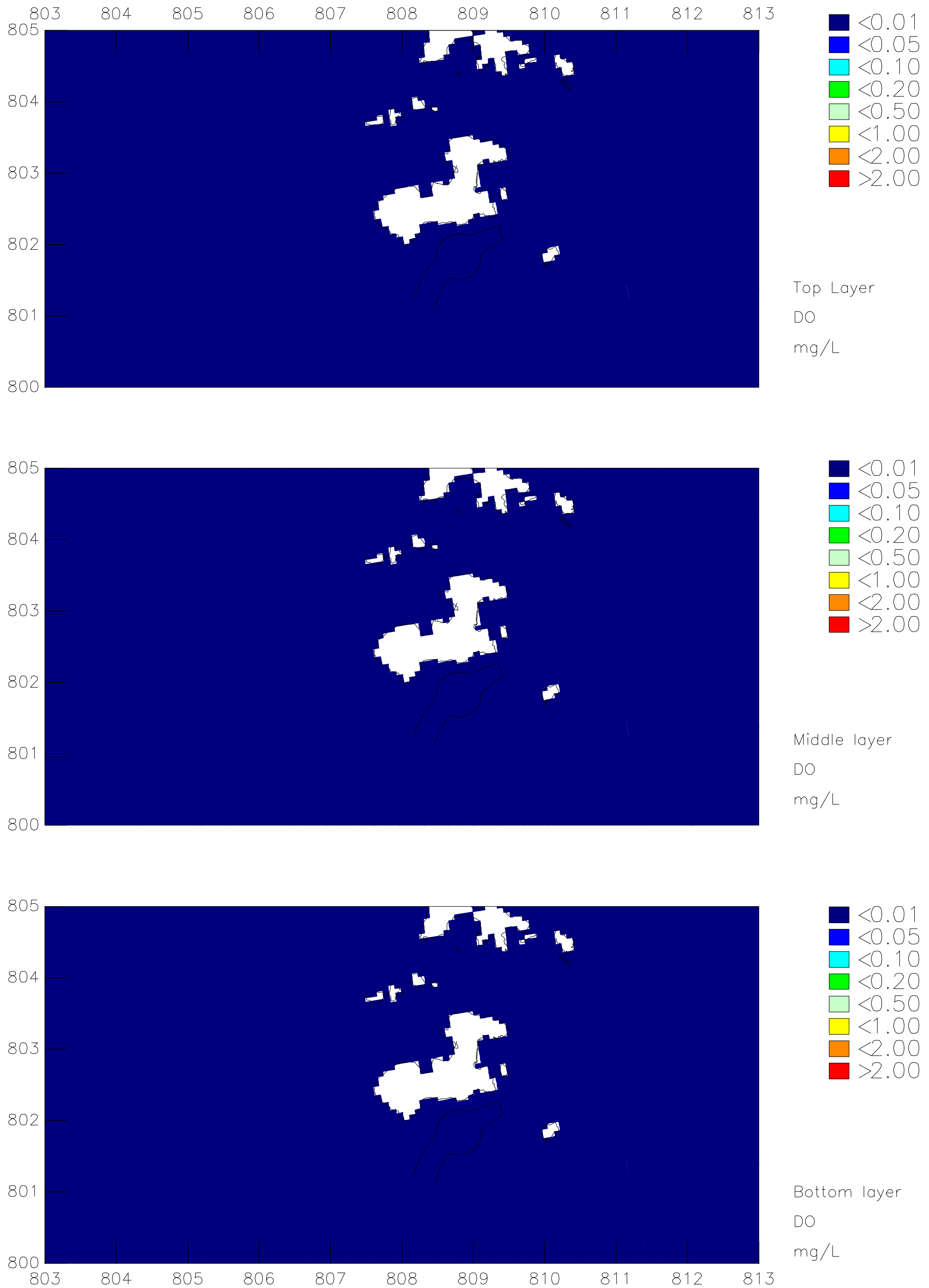



DO (mg/L) mean decrease
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-02

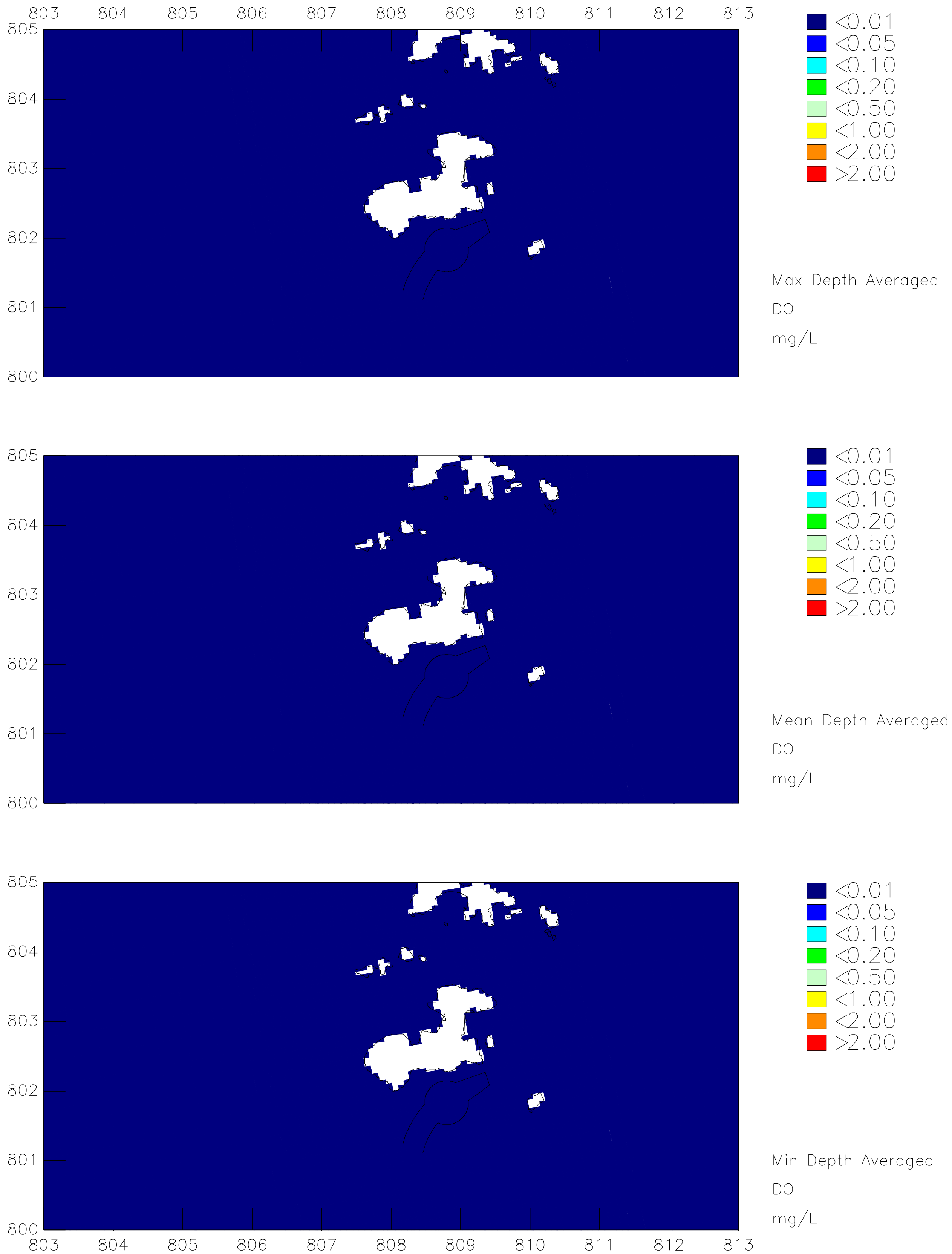



DO (mg/L) minimum decrease
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-03




DO (mg/L)

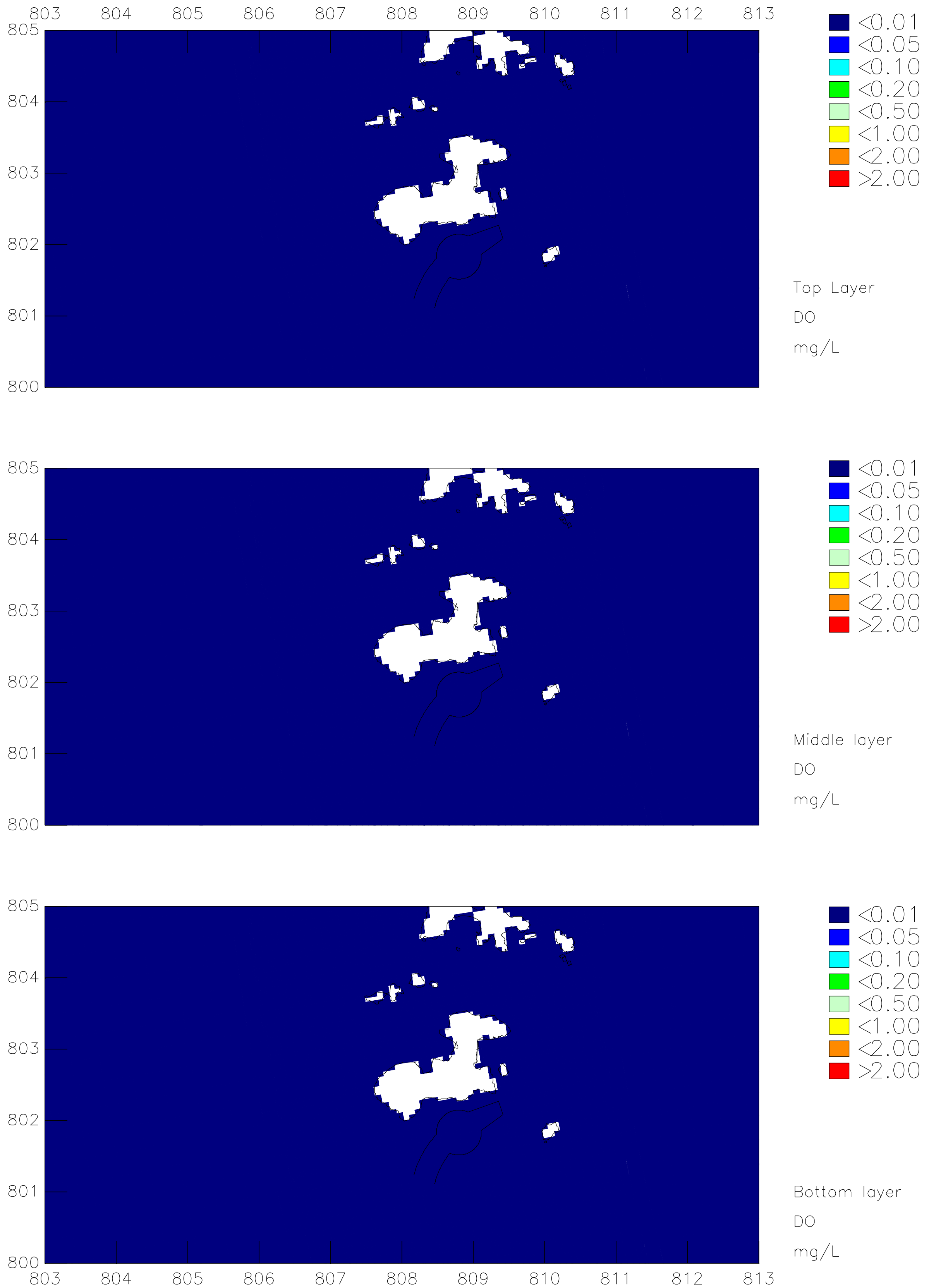
South Soko Sewage emission – Operational

Maximum, Mean and Minimum depth averaged decrease

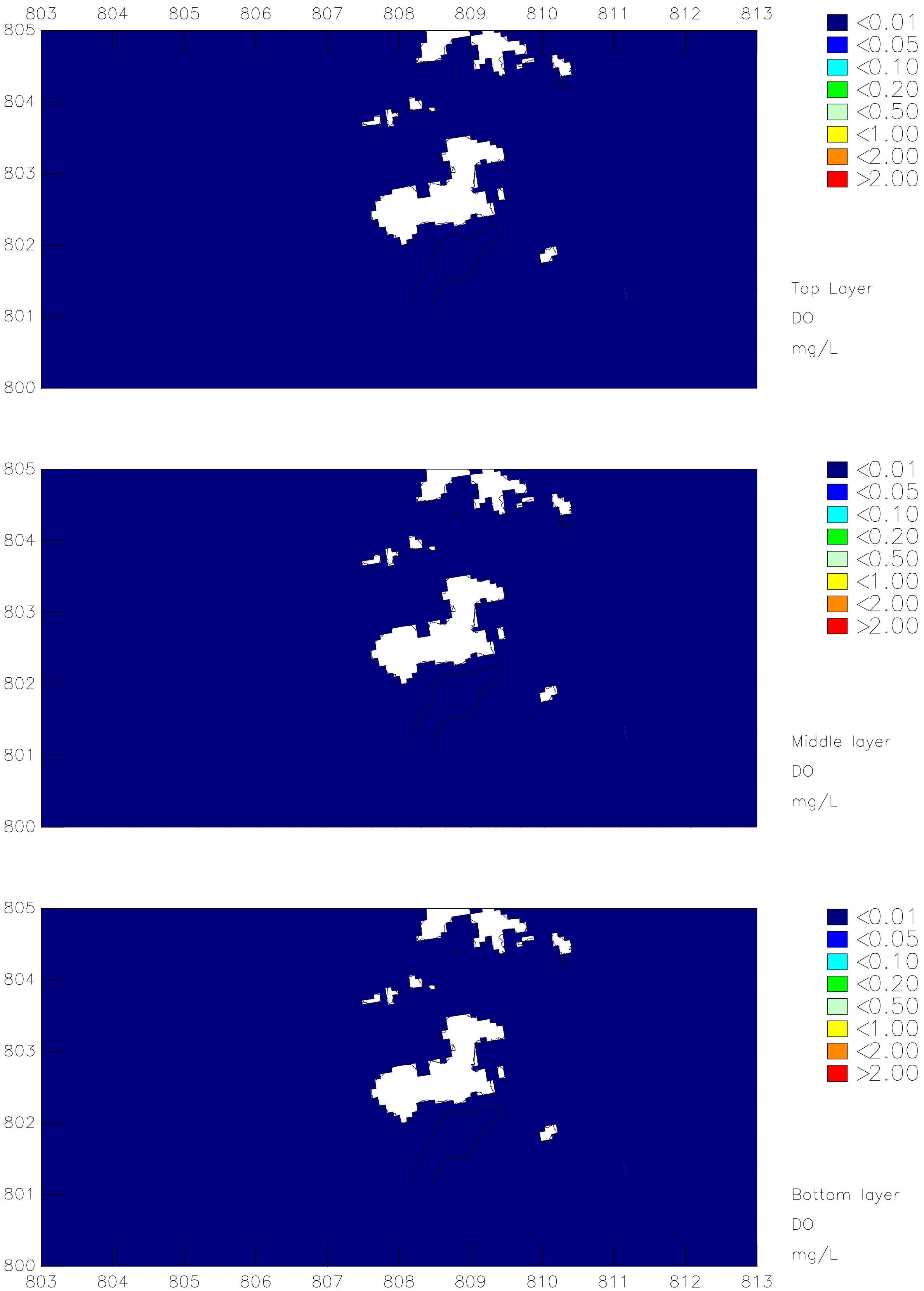
Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-04




| | | |
|---|---|---|
| DO (mg/L) maximum decrease<br>South Soko Sewage emission – Operational<br>Top, Middle and Bottom layer | Wet Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-05 |

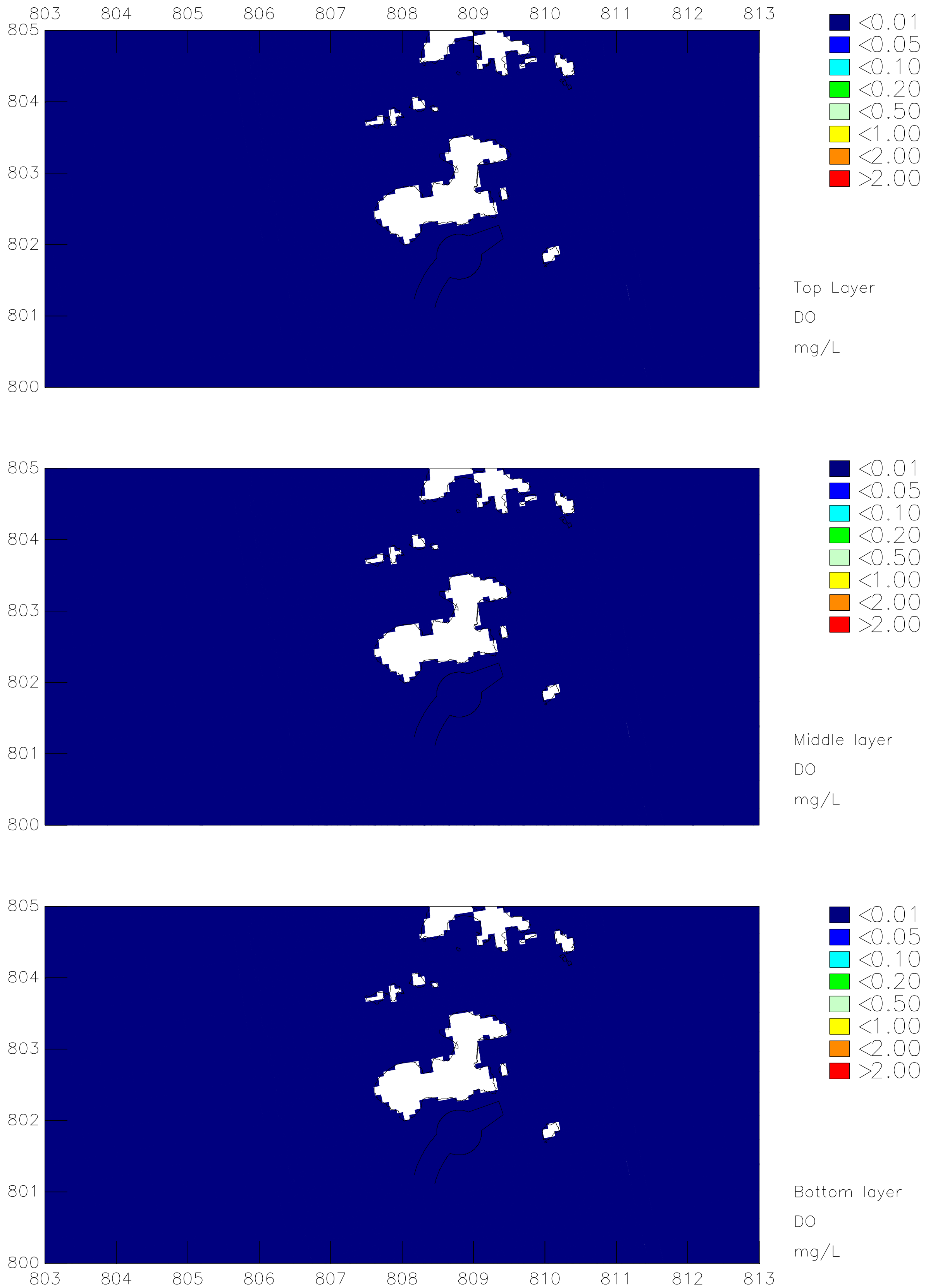



DO (mg/L) mean decrease
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-06

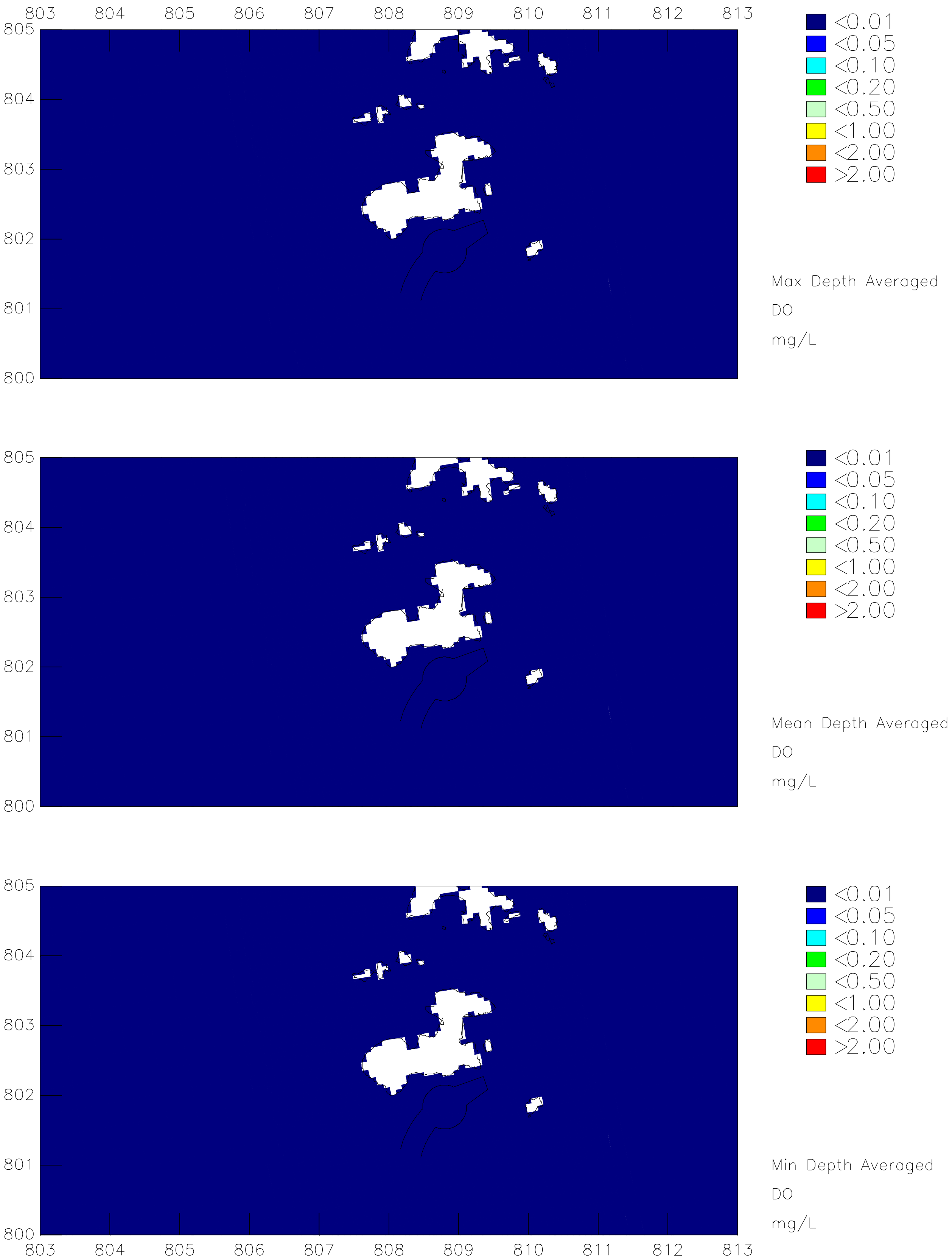



DO (mg/L) minimum decrease
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-07

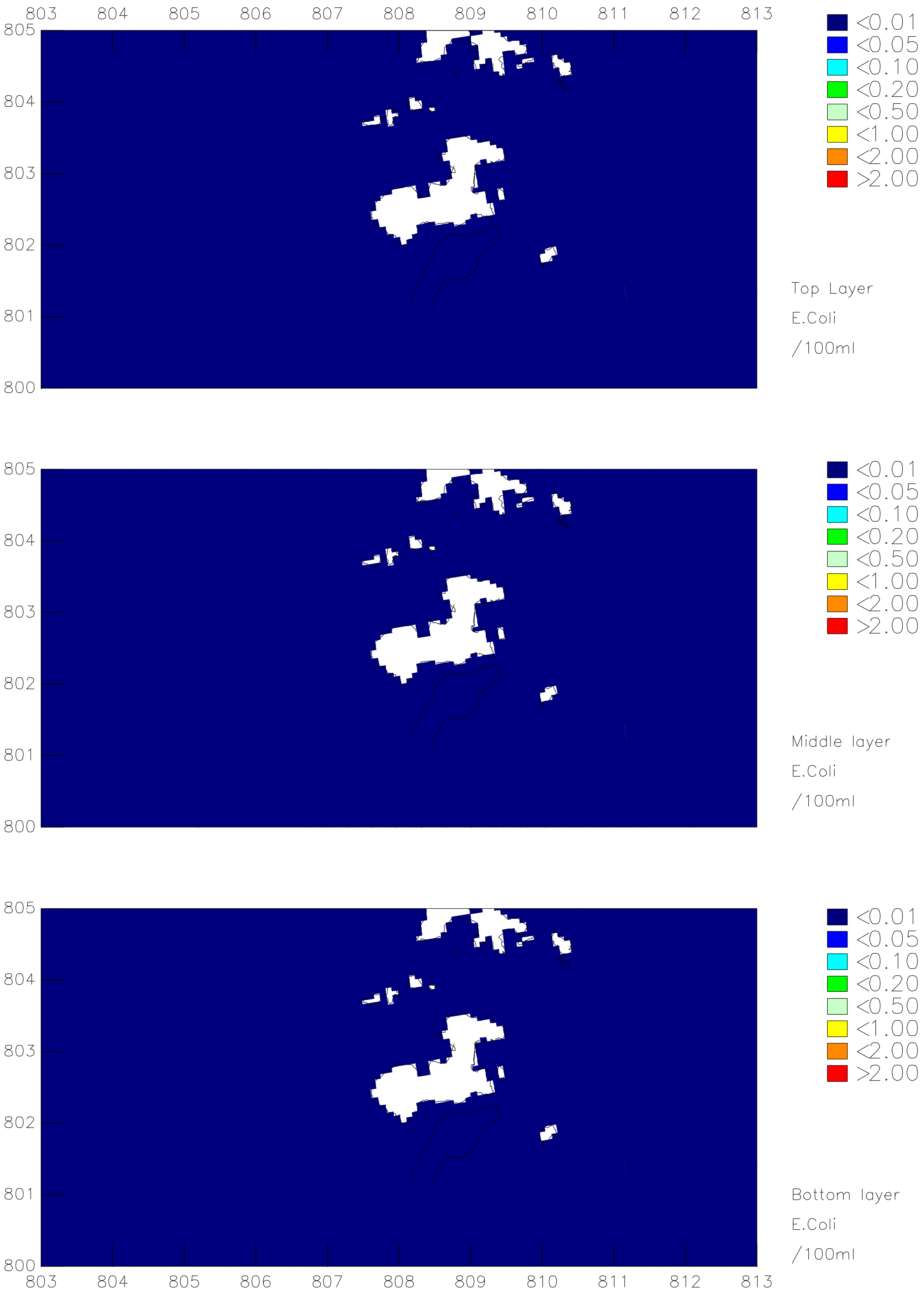



DO (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged decrease

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-08

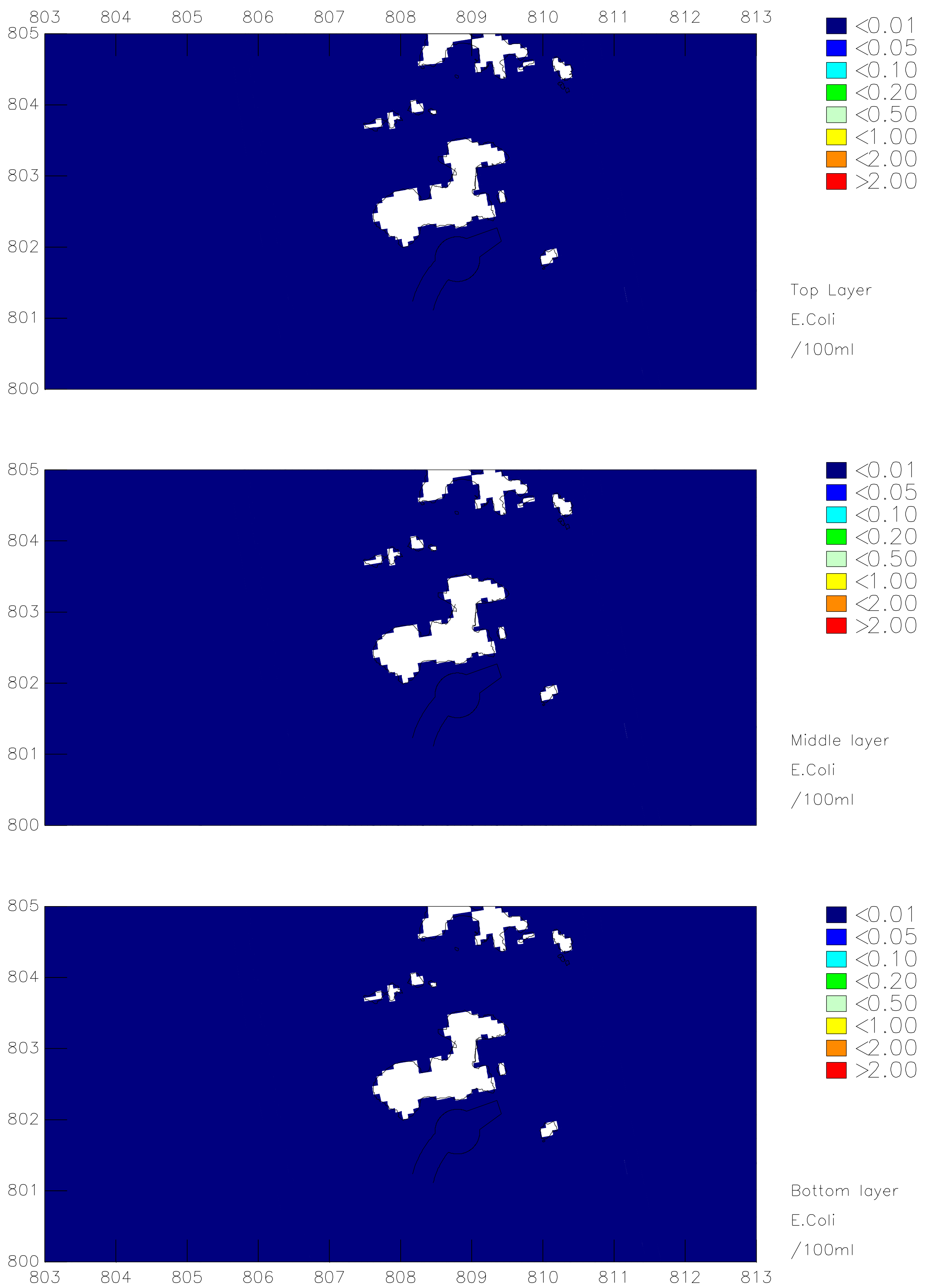



E.Coli (/100ml) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-09

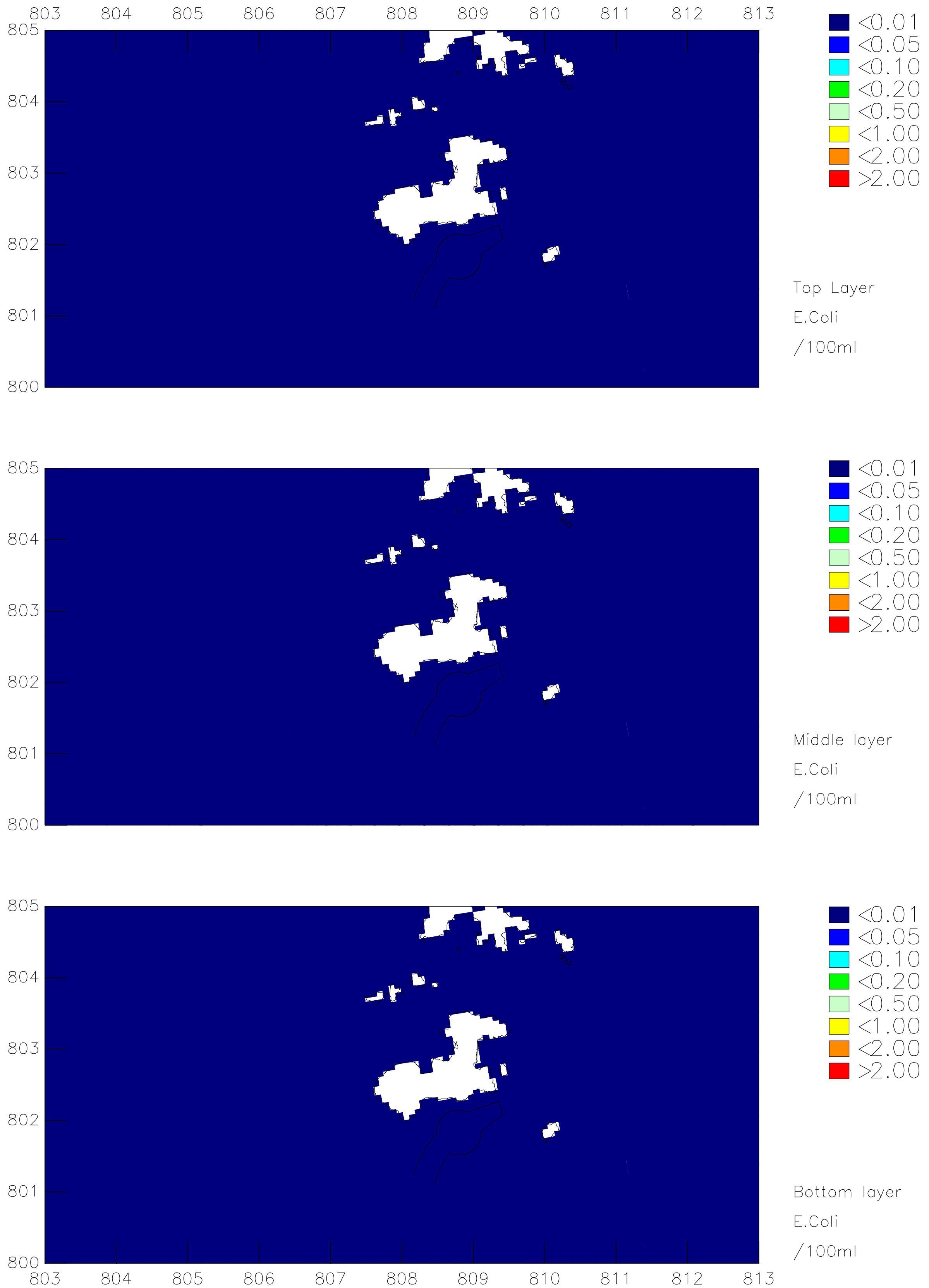



E.Coli (/100ml) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-10

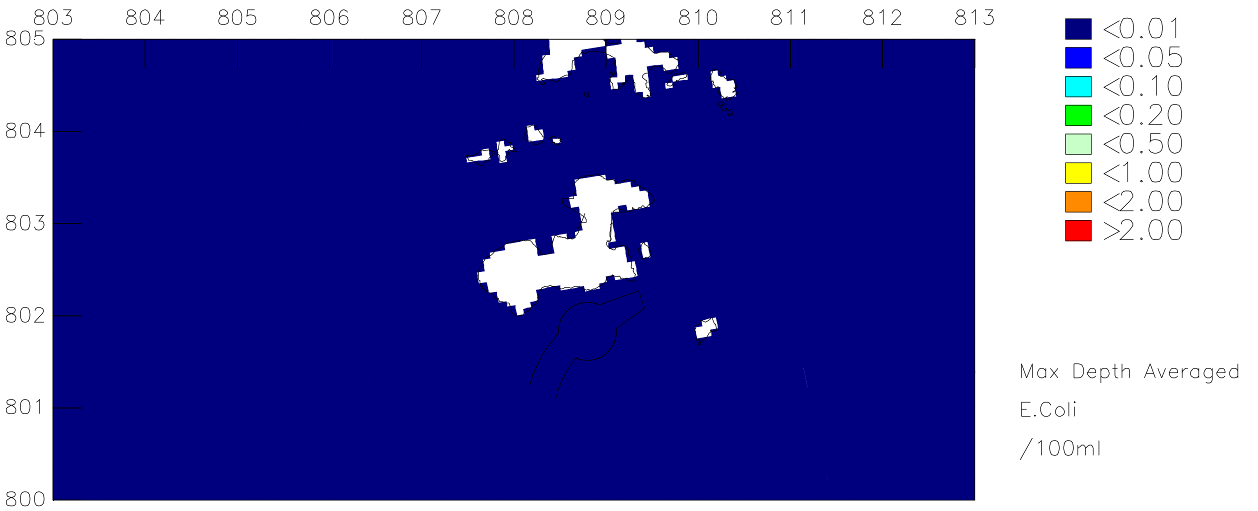


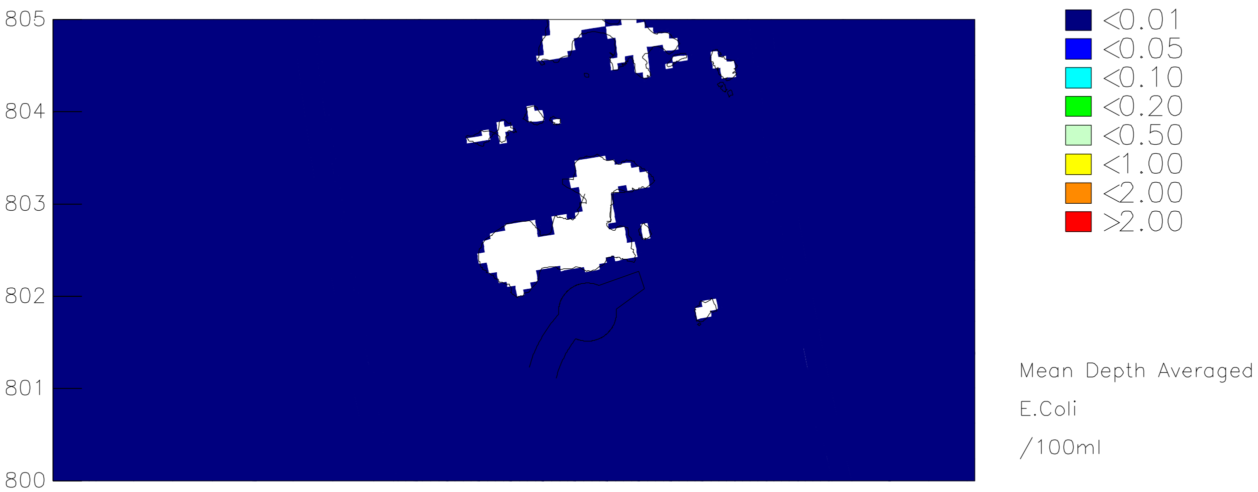

E.Coli (/100ml) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

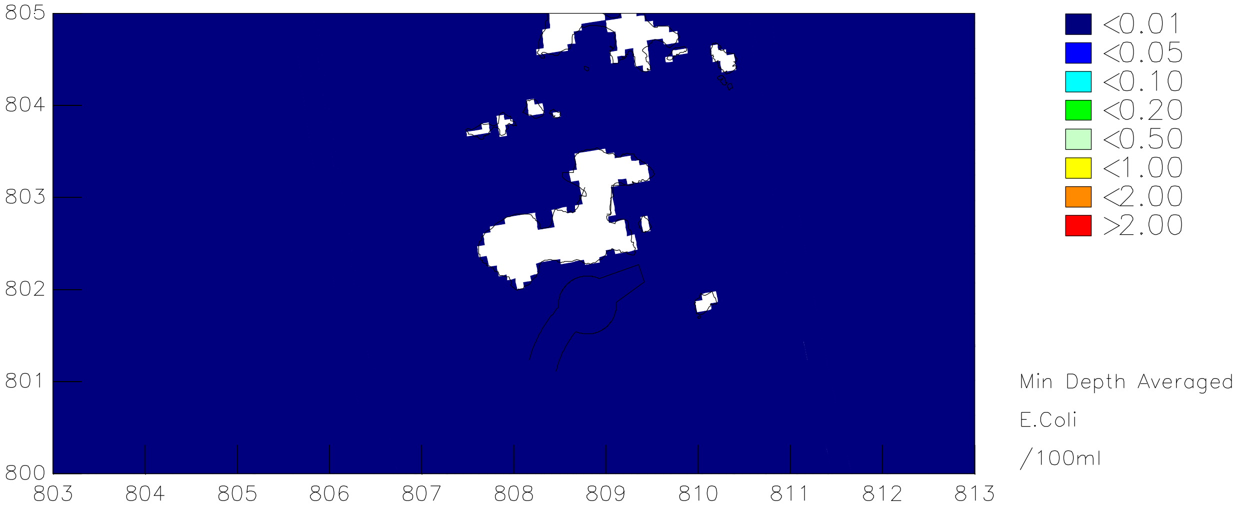
Dry Season

WL | Delft Hydraulics – ERM

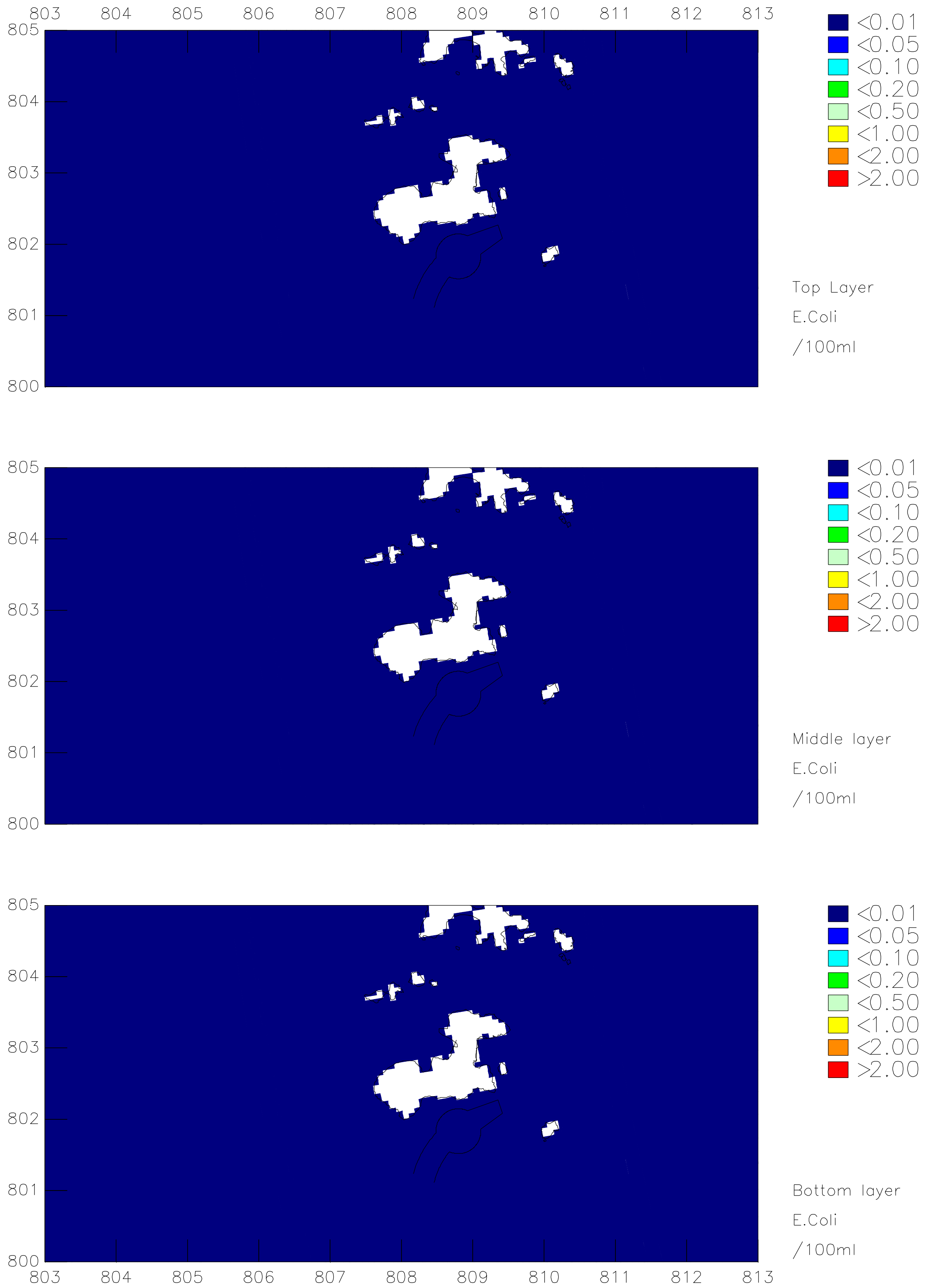
Figure SK_I-11




| | |
|---|---|
| E.Coli (/100ml)<br>South Soko Sewage emission – Operational<br>Maximum, Mean and Minimum depth averaged increase | Dry Season |
| WL \| Delft Hydraulics – ERM | Figure SK_I-12 |

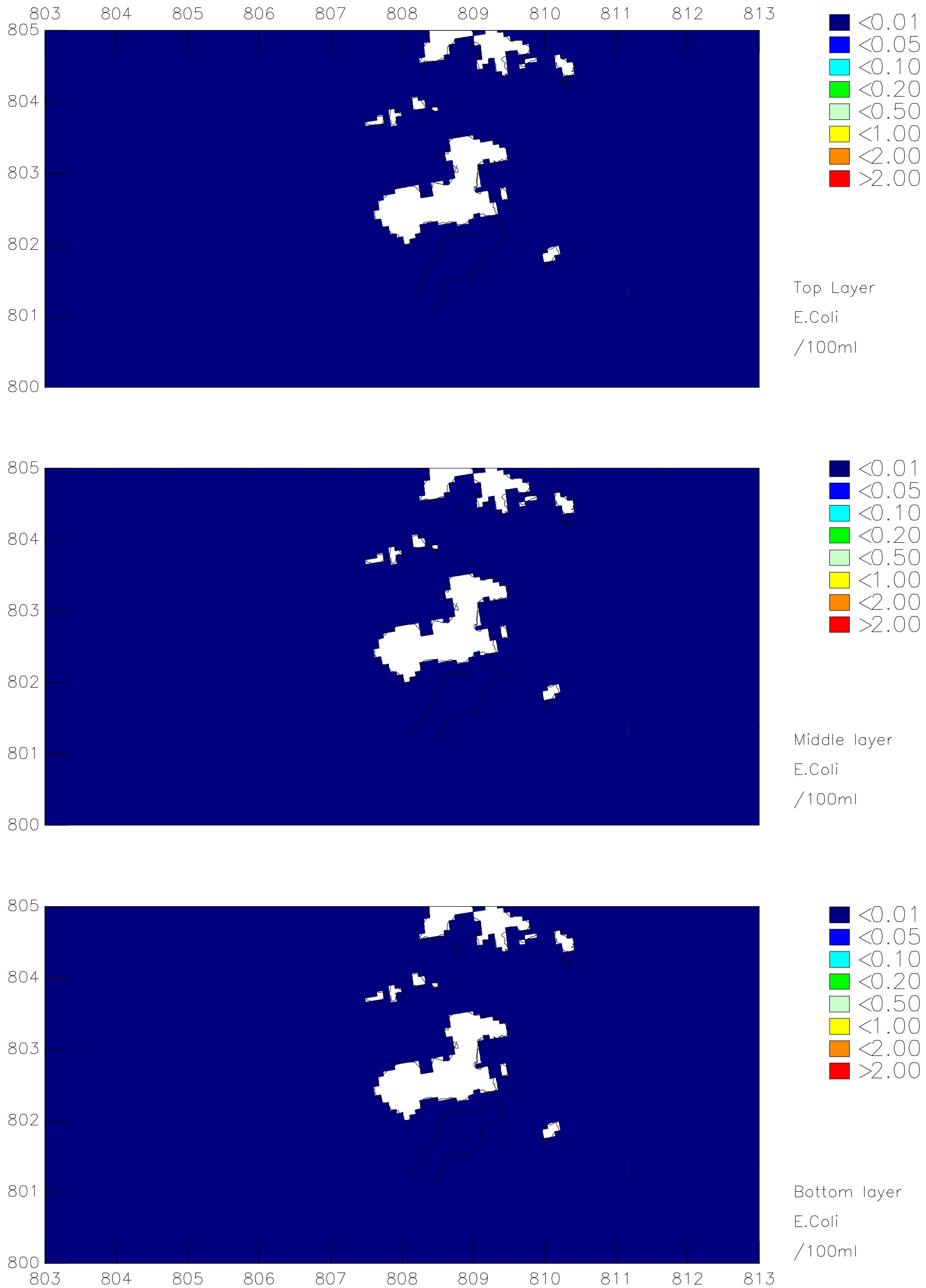



E.Coli (/100ml) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-13

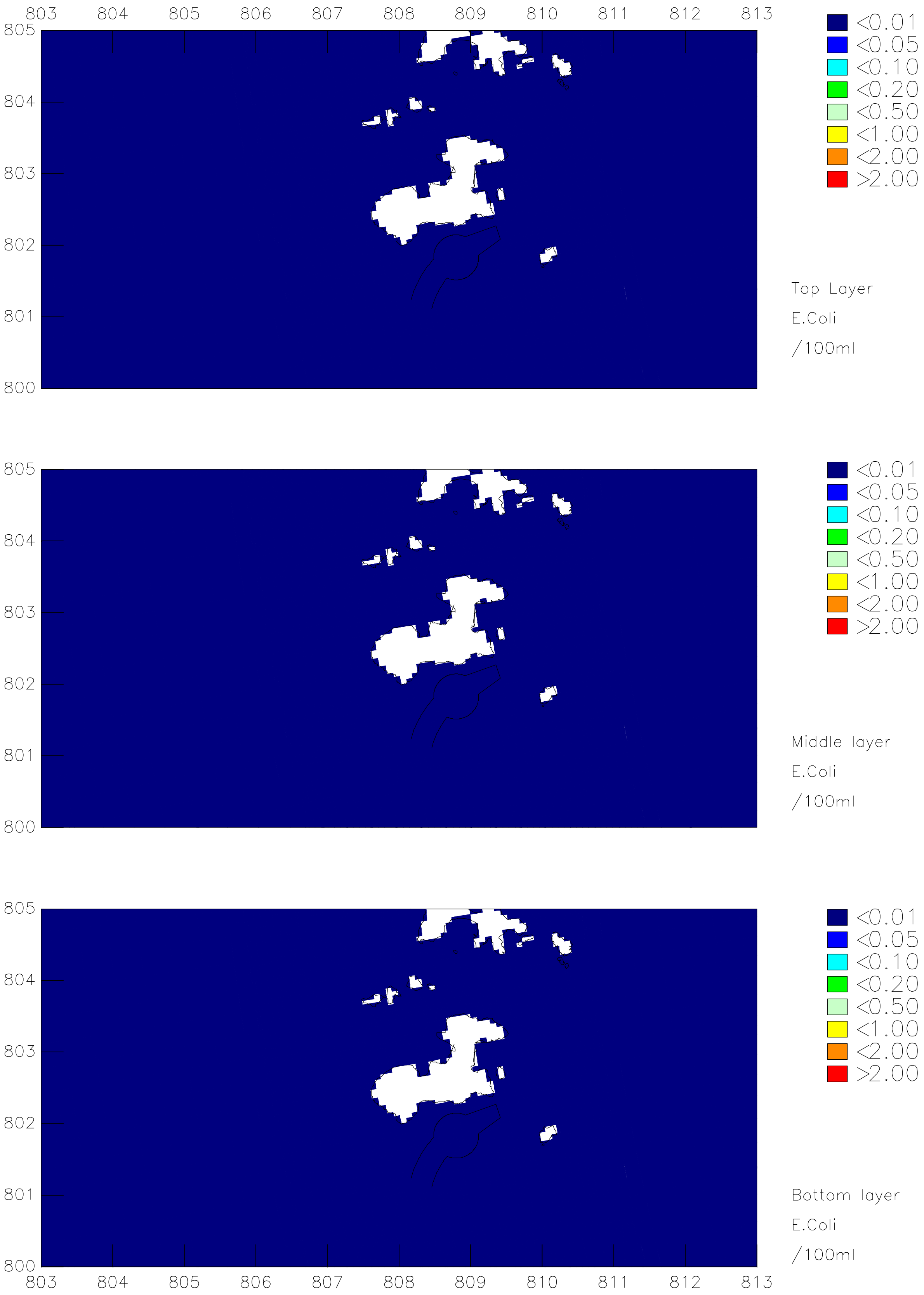



E.Coli (/100ml) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-14

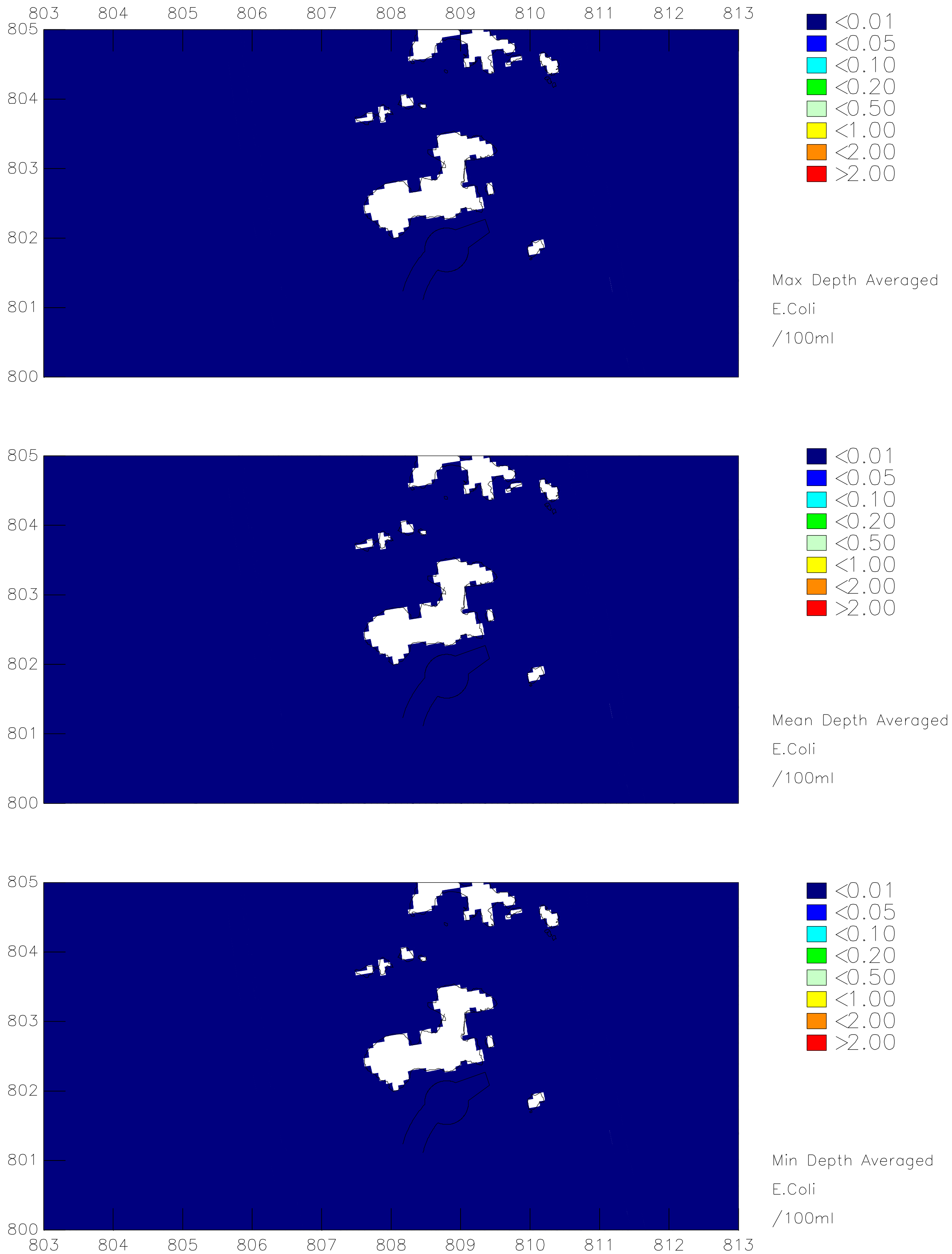



E.Coli (/100ml) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-15




E.Coli (/100ml)

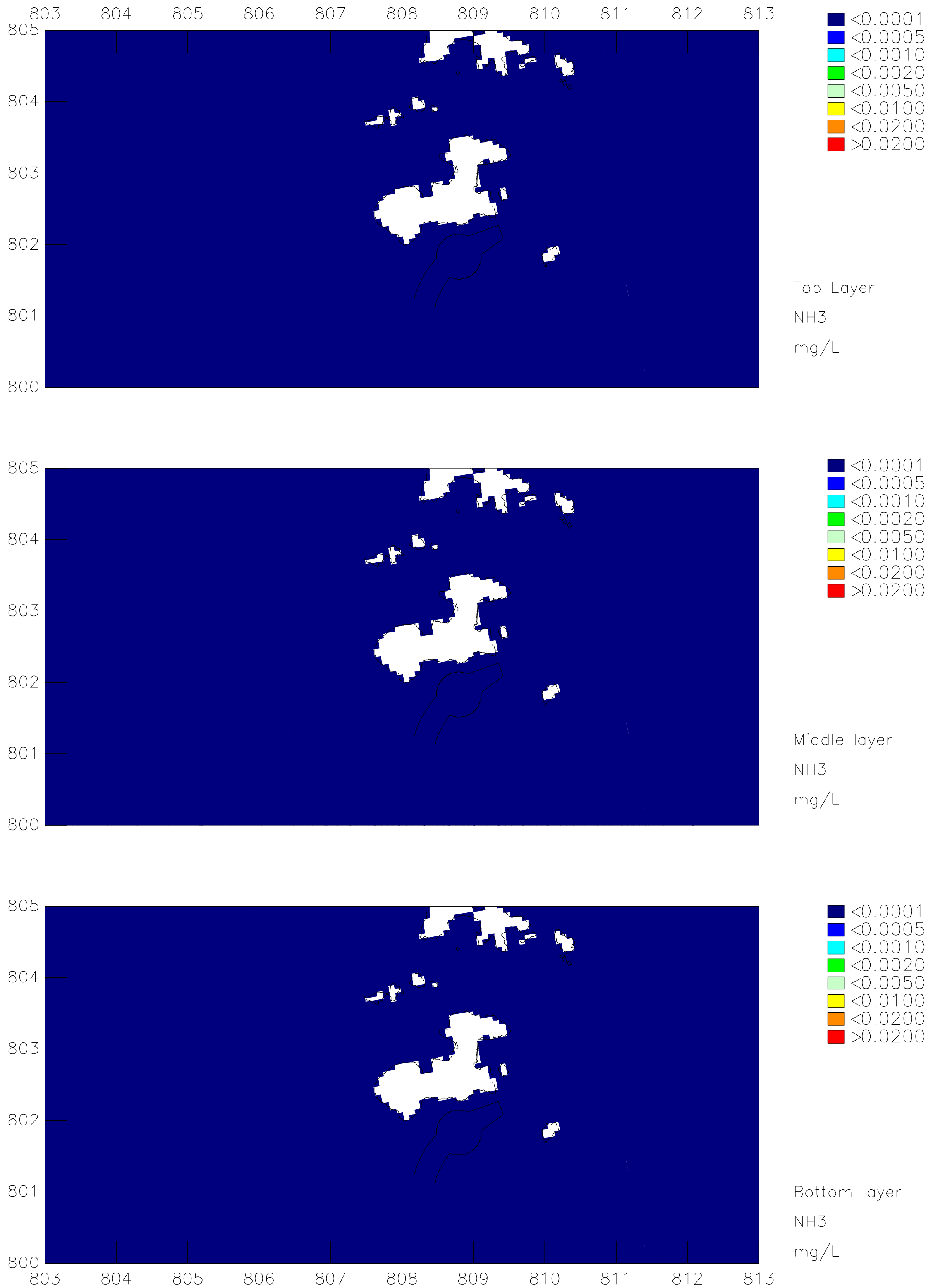
South Soko Sewage emission – Operational

Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-16

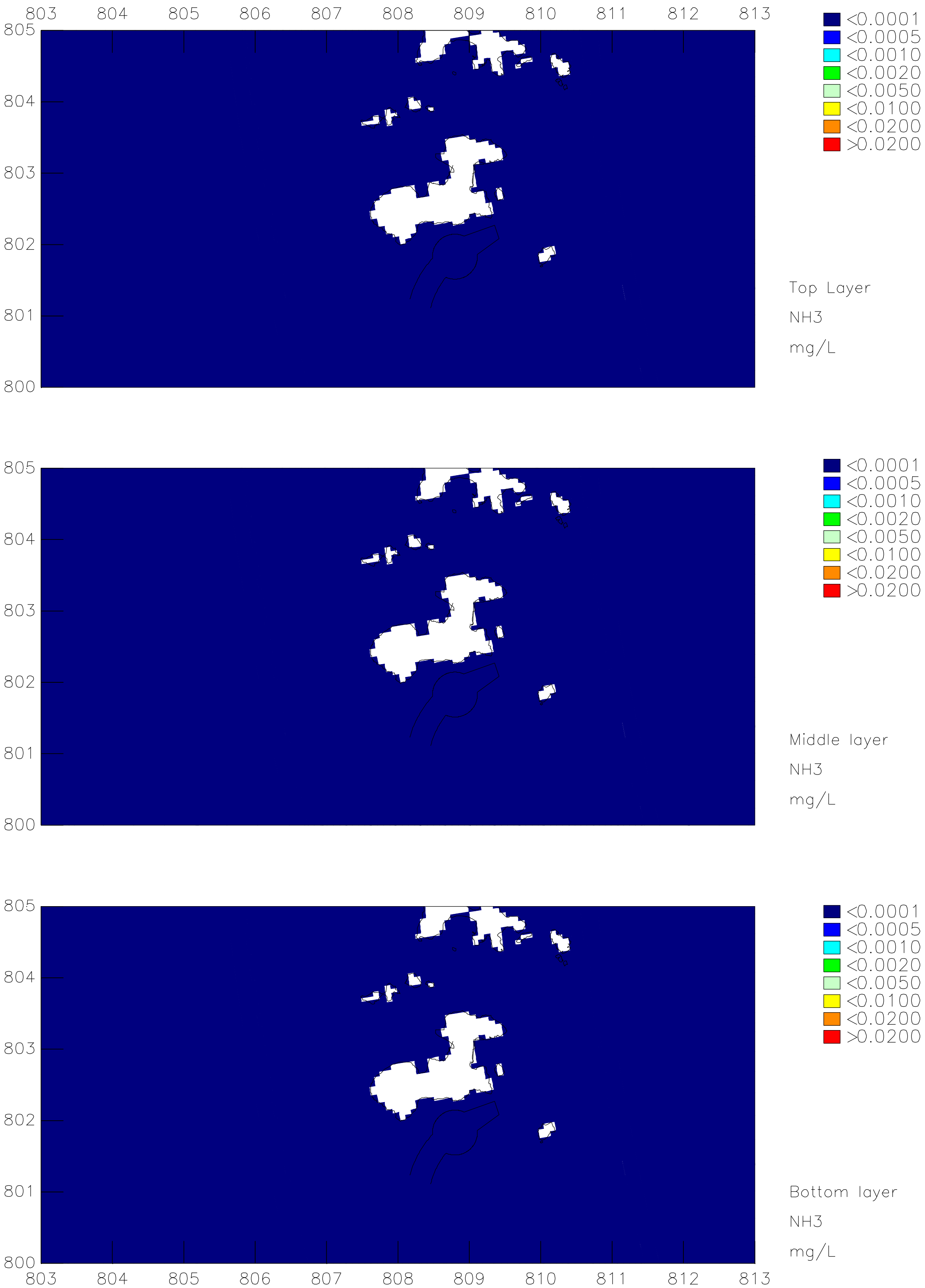



NH3 (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-17

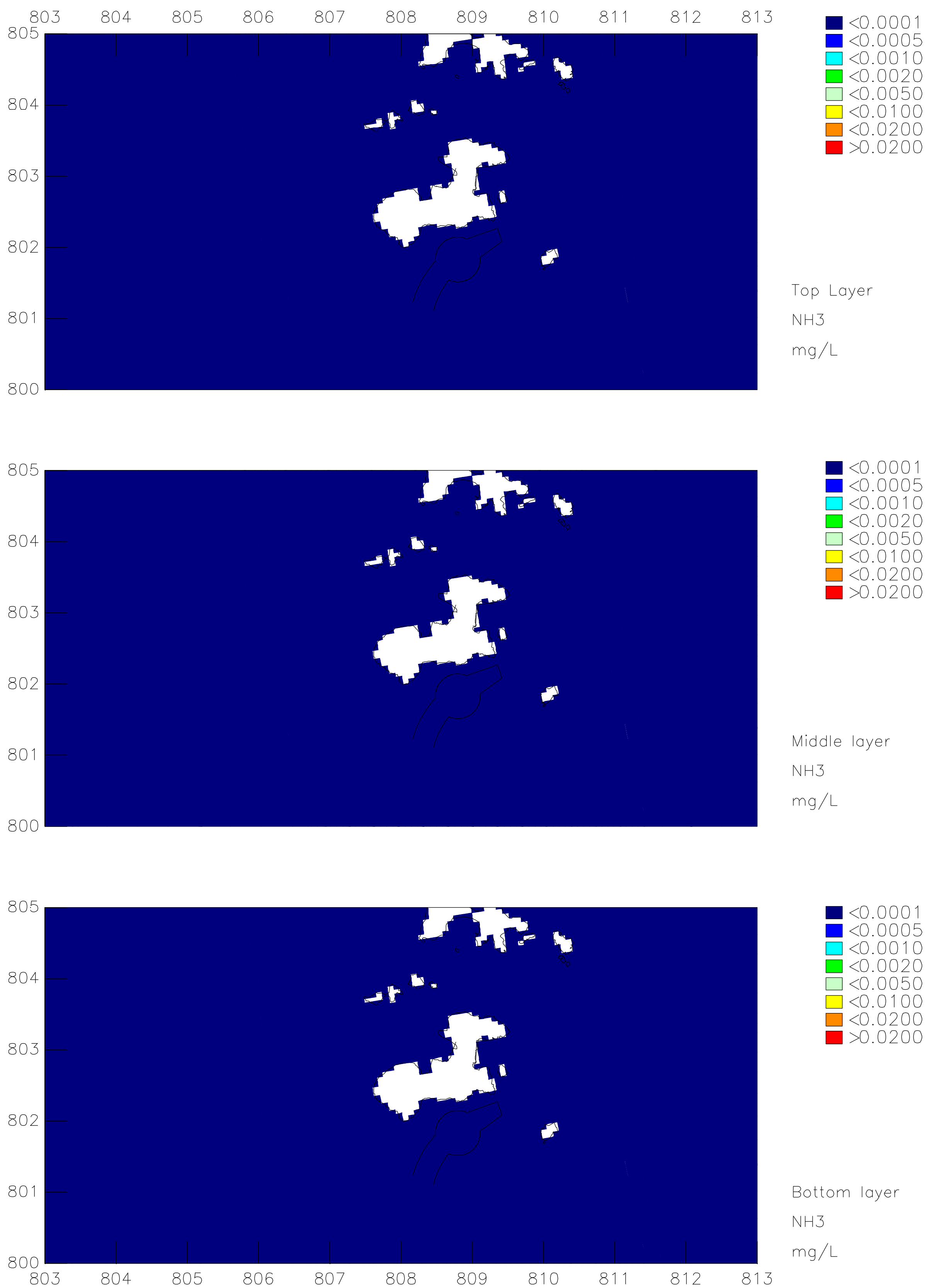



NH3 (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-18

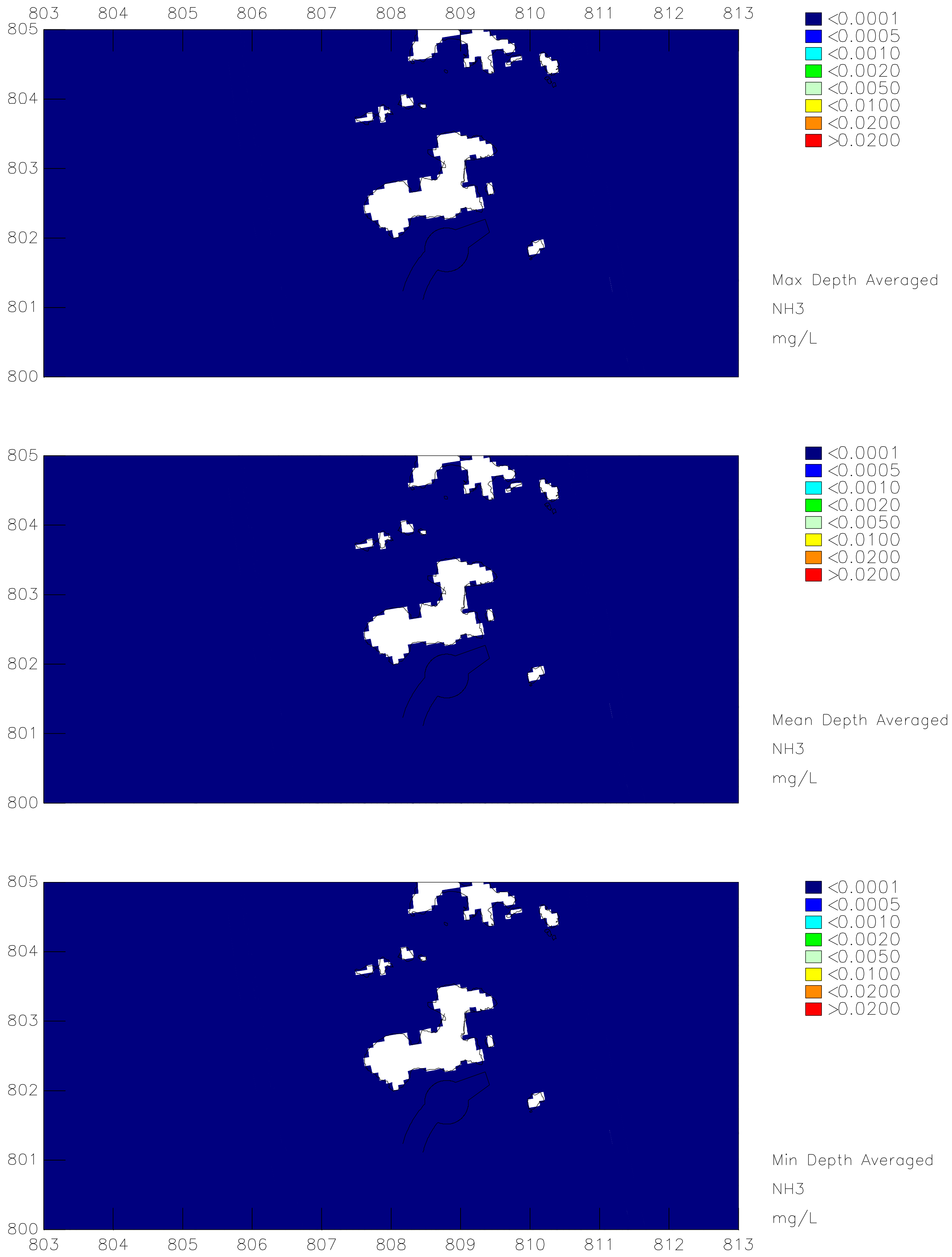



NH3 (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-19

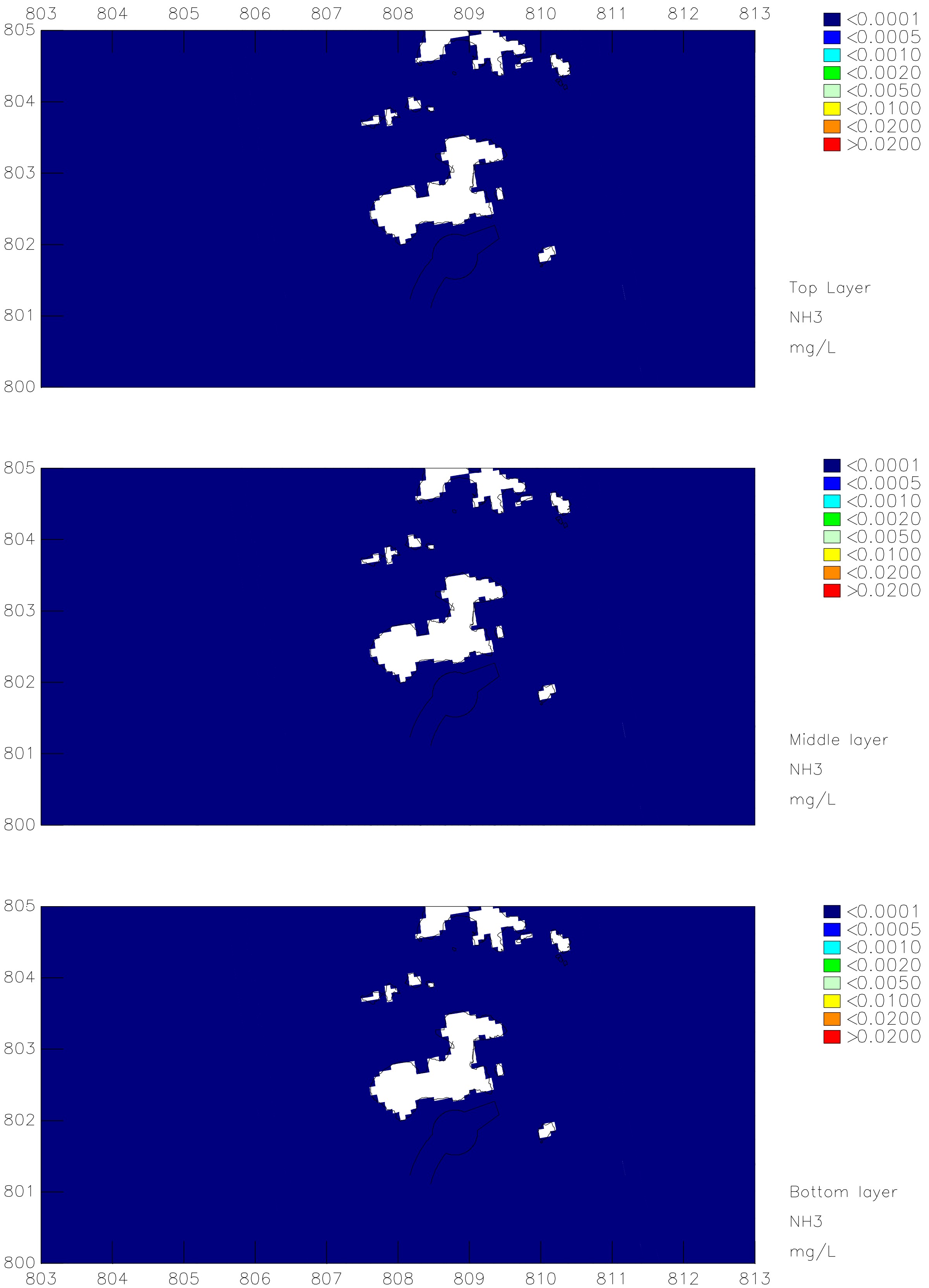



NH3 (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged increase

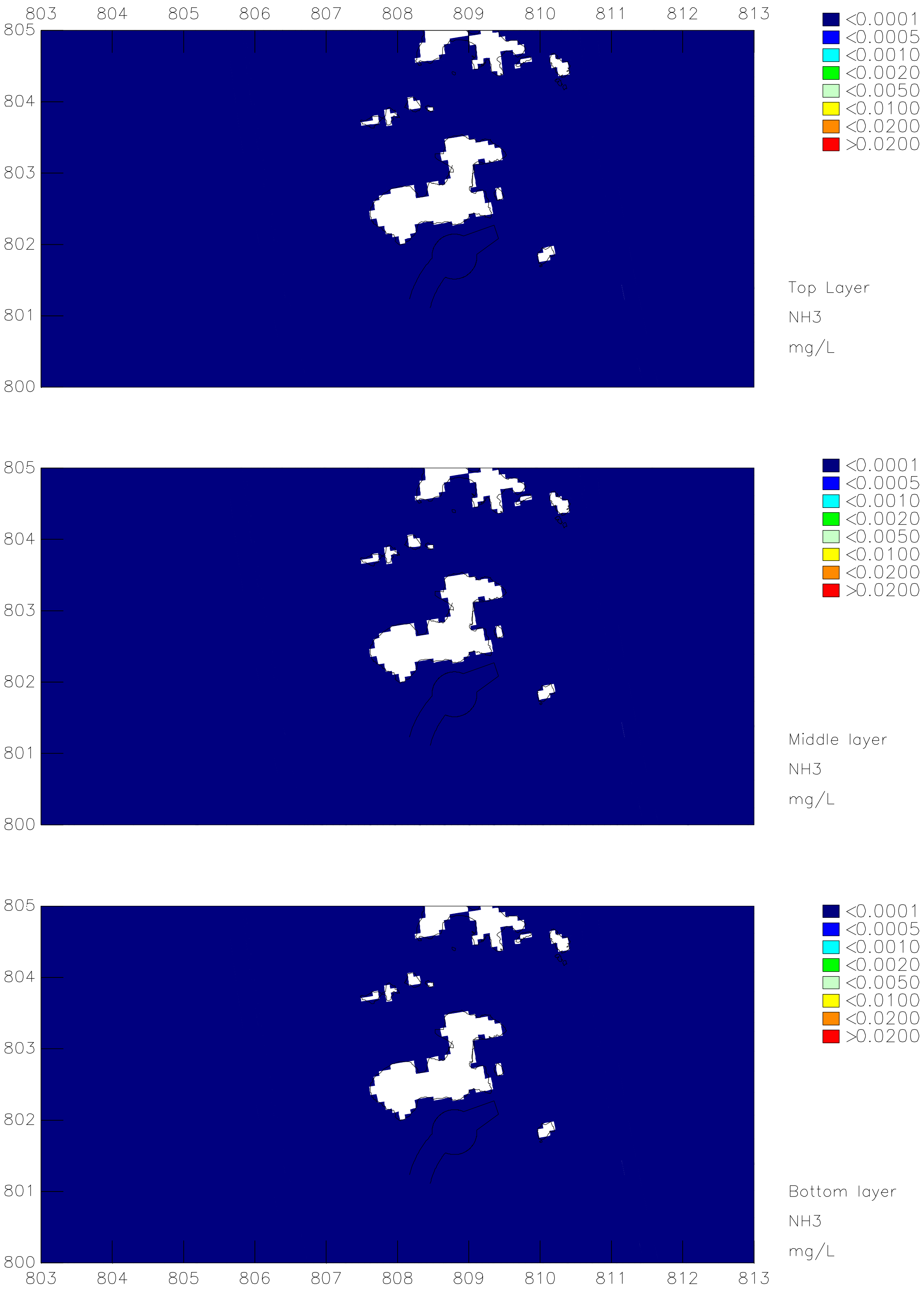
Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-20




| | | |
|---|---|---|
| NH3 (mg/L) maximum increase<br>South Soko Sewage emission – Operational<br>Top, Middle and Bottom layer | | |
| | Wet Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-21 |

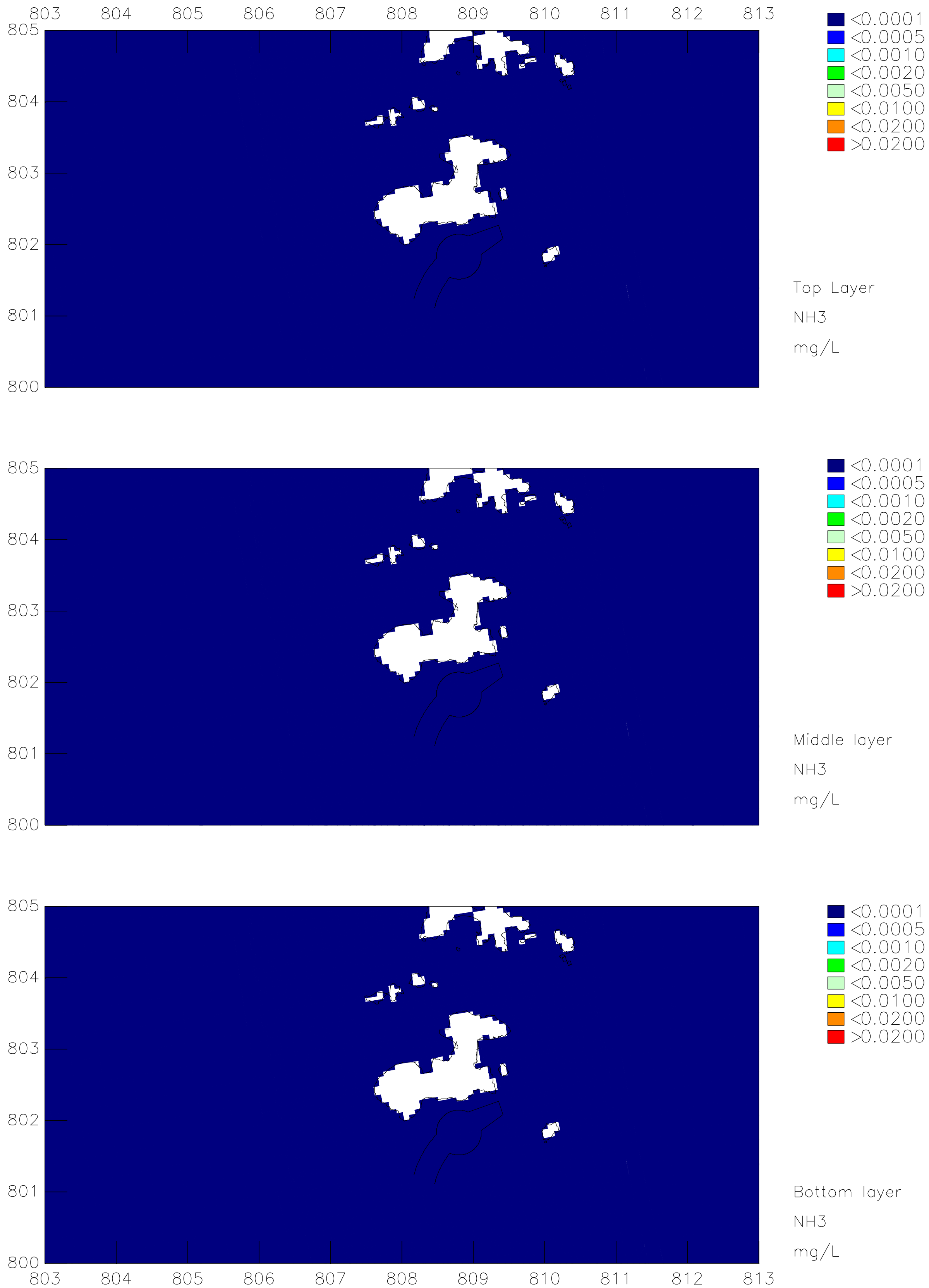



NH3 (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-22

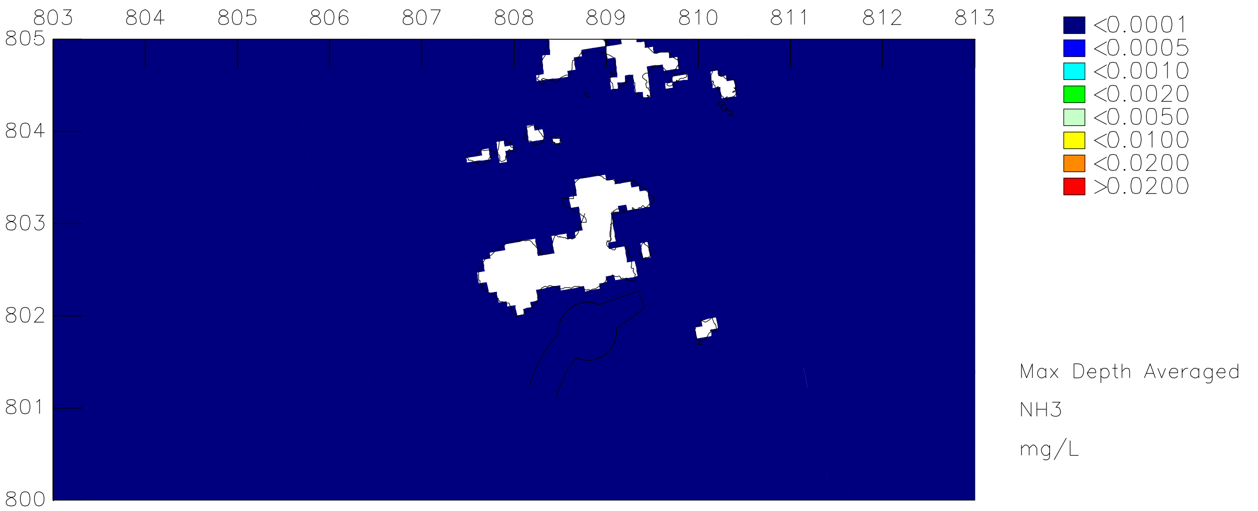


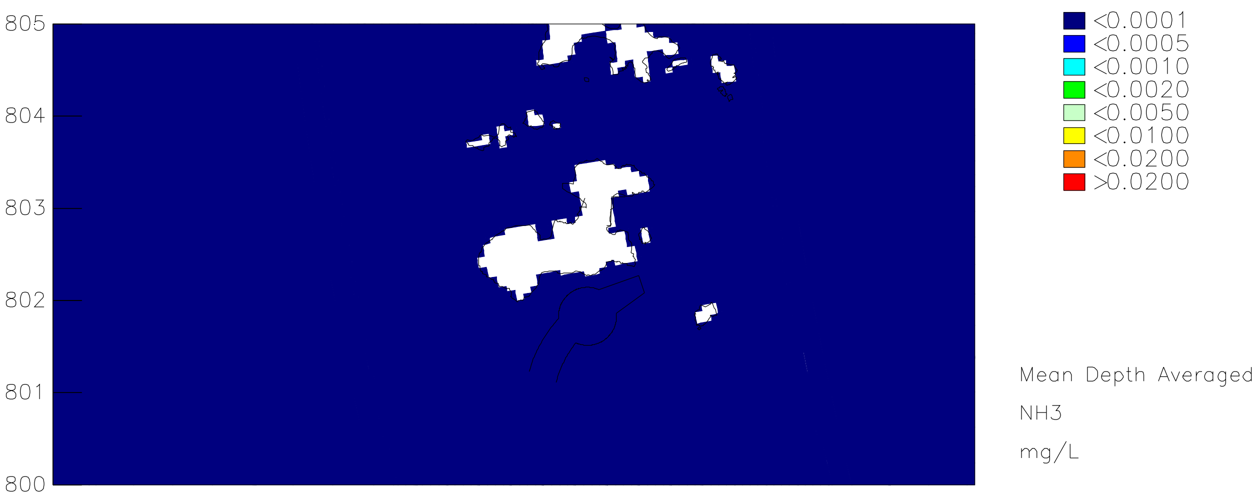

NH3 (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

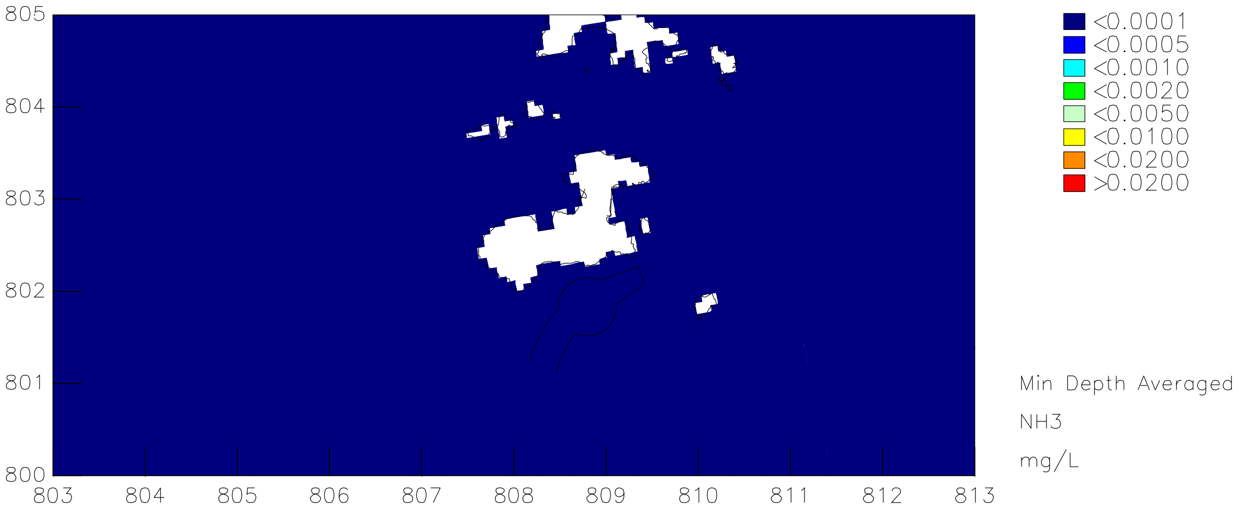
Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-23



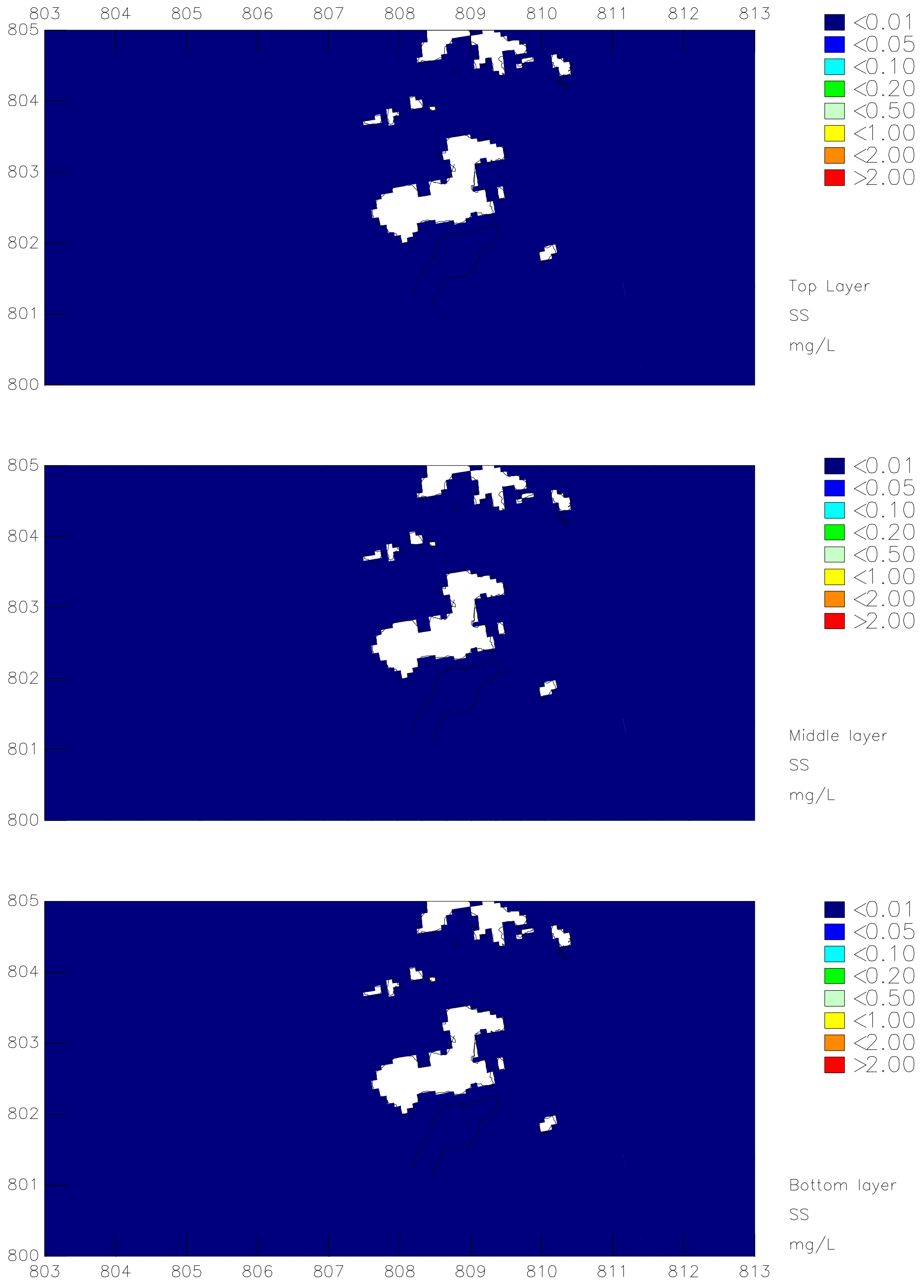




NH3 (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-24

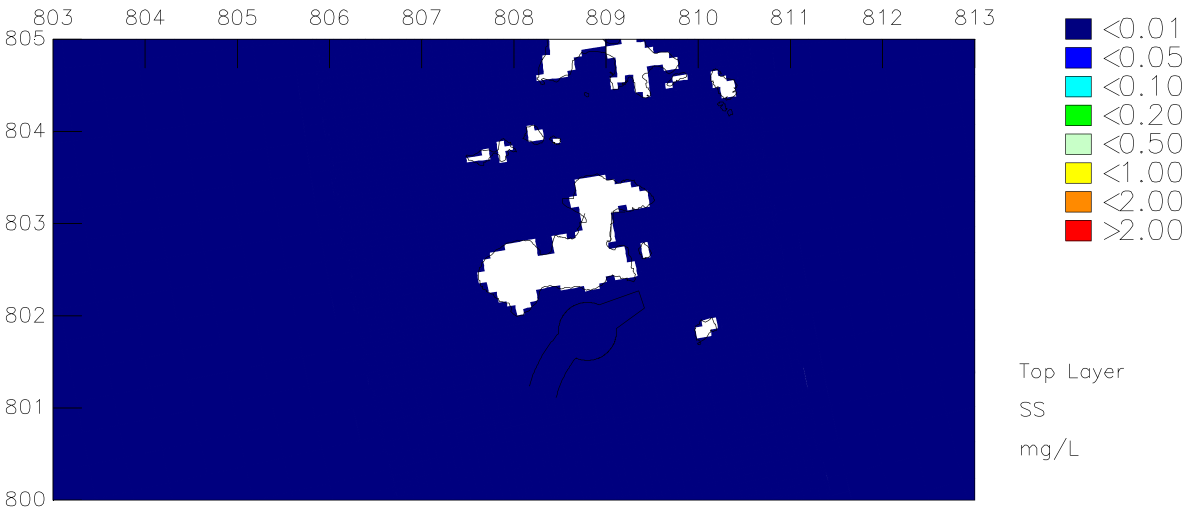


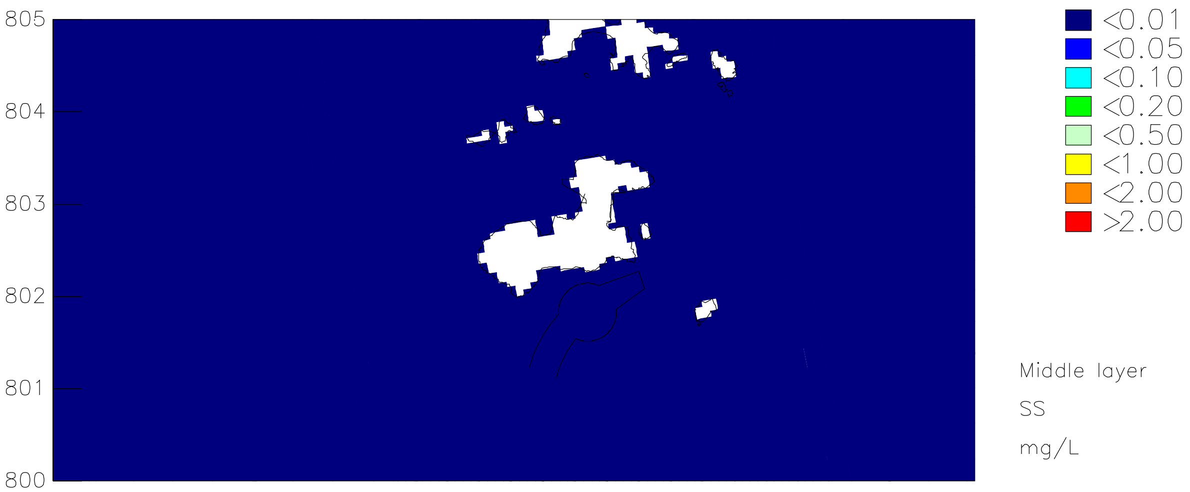

SS (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

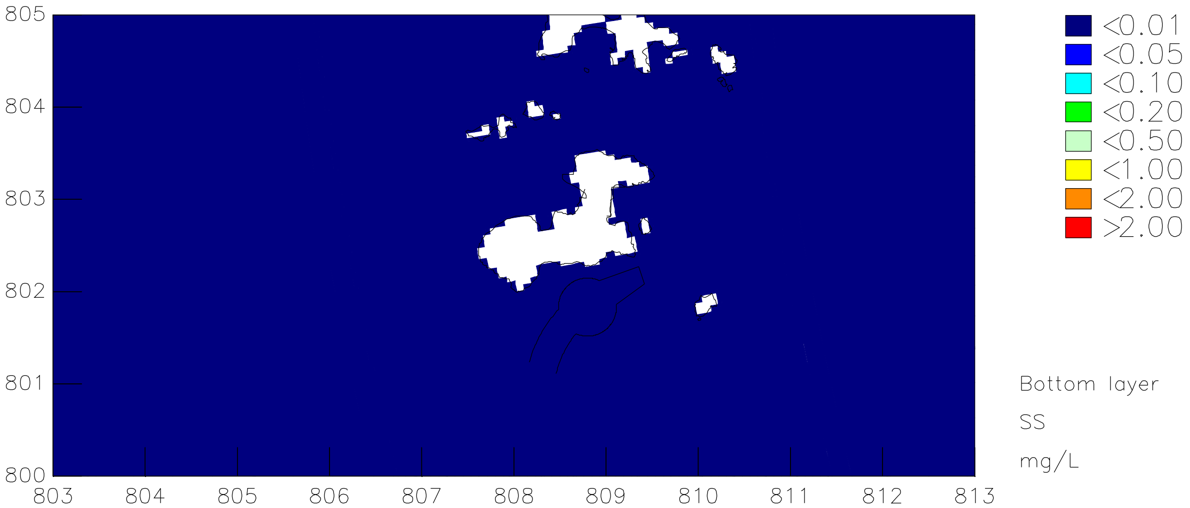
Dry Season

WL | Delft Hydraulics – ERM

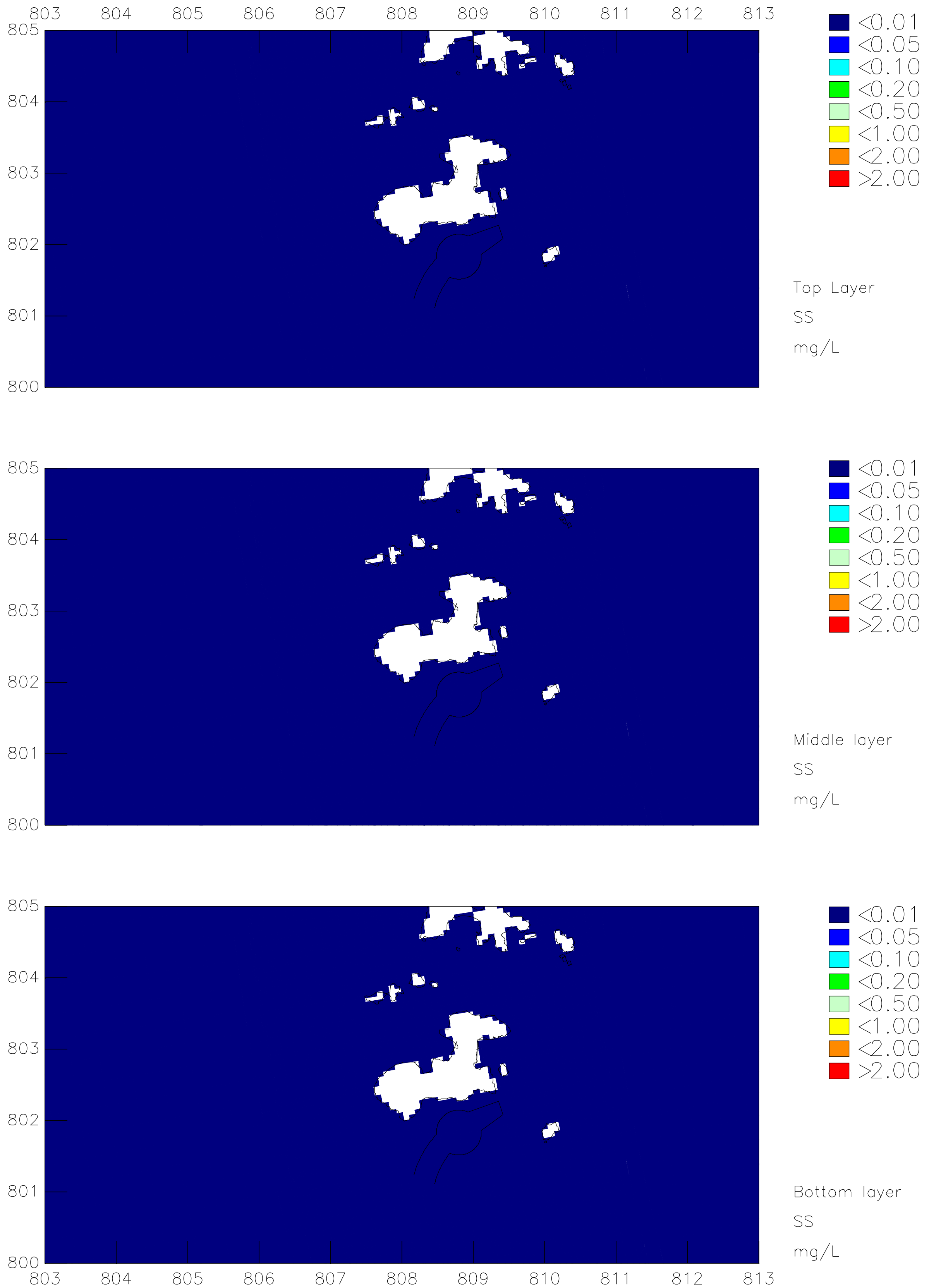
Figure SK_I-25




| | |
|---|---|
| SS (mg/L) mean increase<br>South Soko Sewage emission – Operational<br>Top, Middle and Bottom layer | Dry Season |
| WL \| Delft Hydraulics – ERM | Figure SK_I-26 |

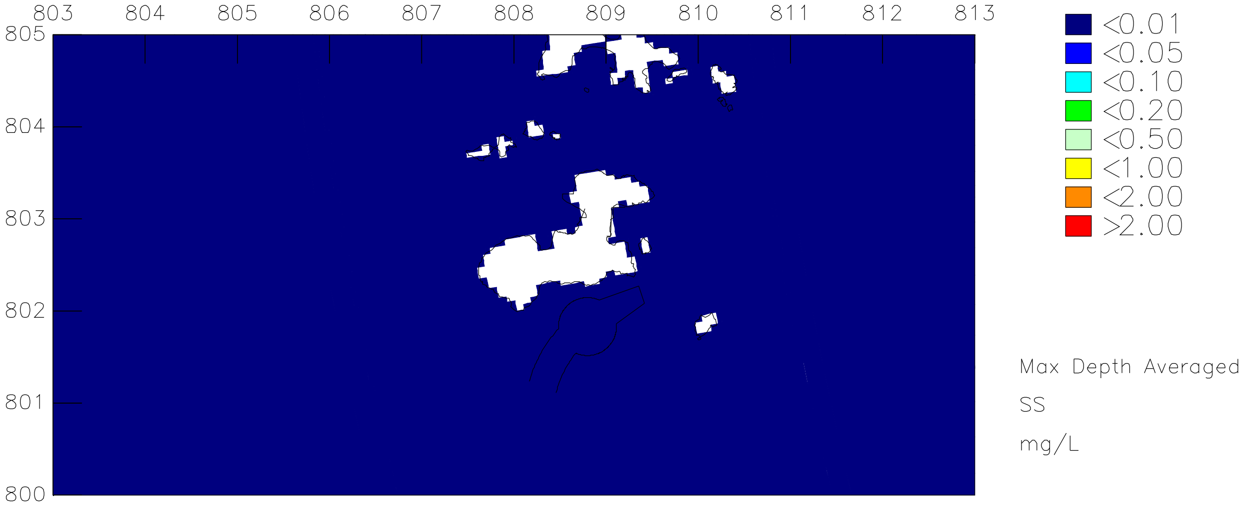


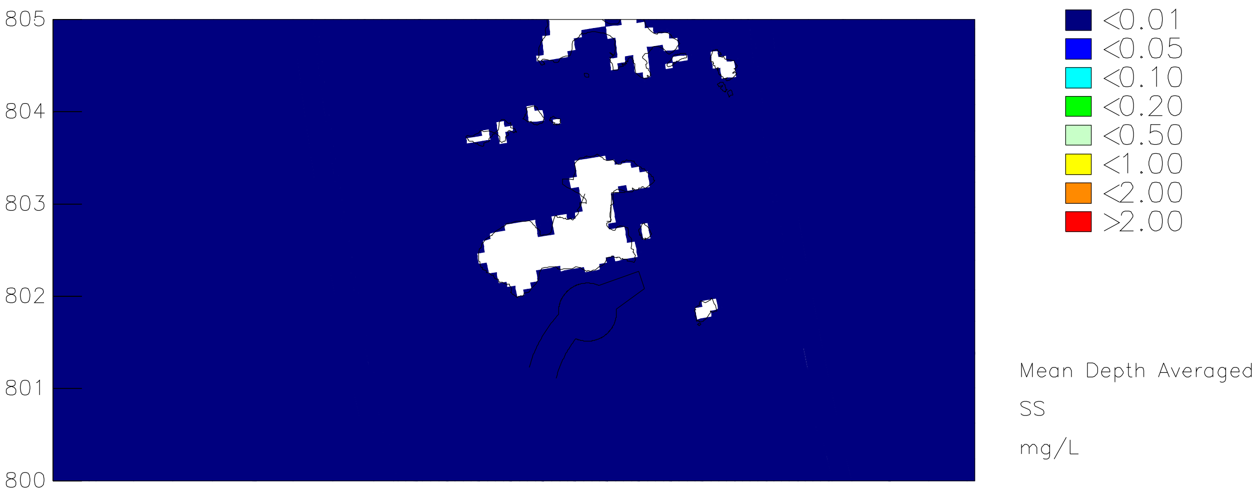

SS (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

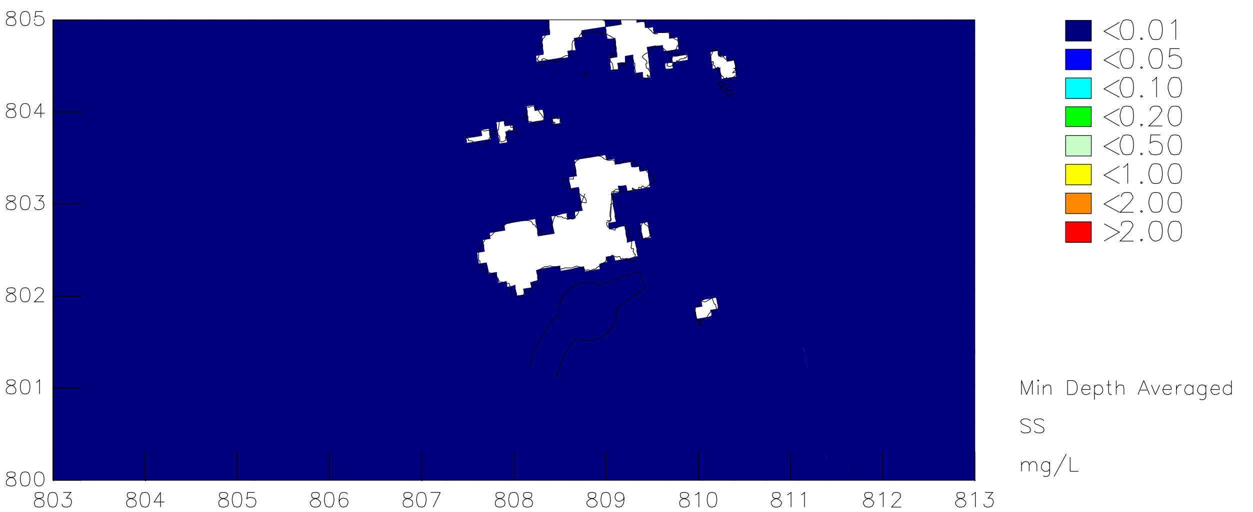
Dry Season

WL | Delft Hydraulics – ERM

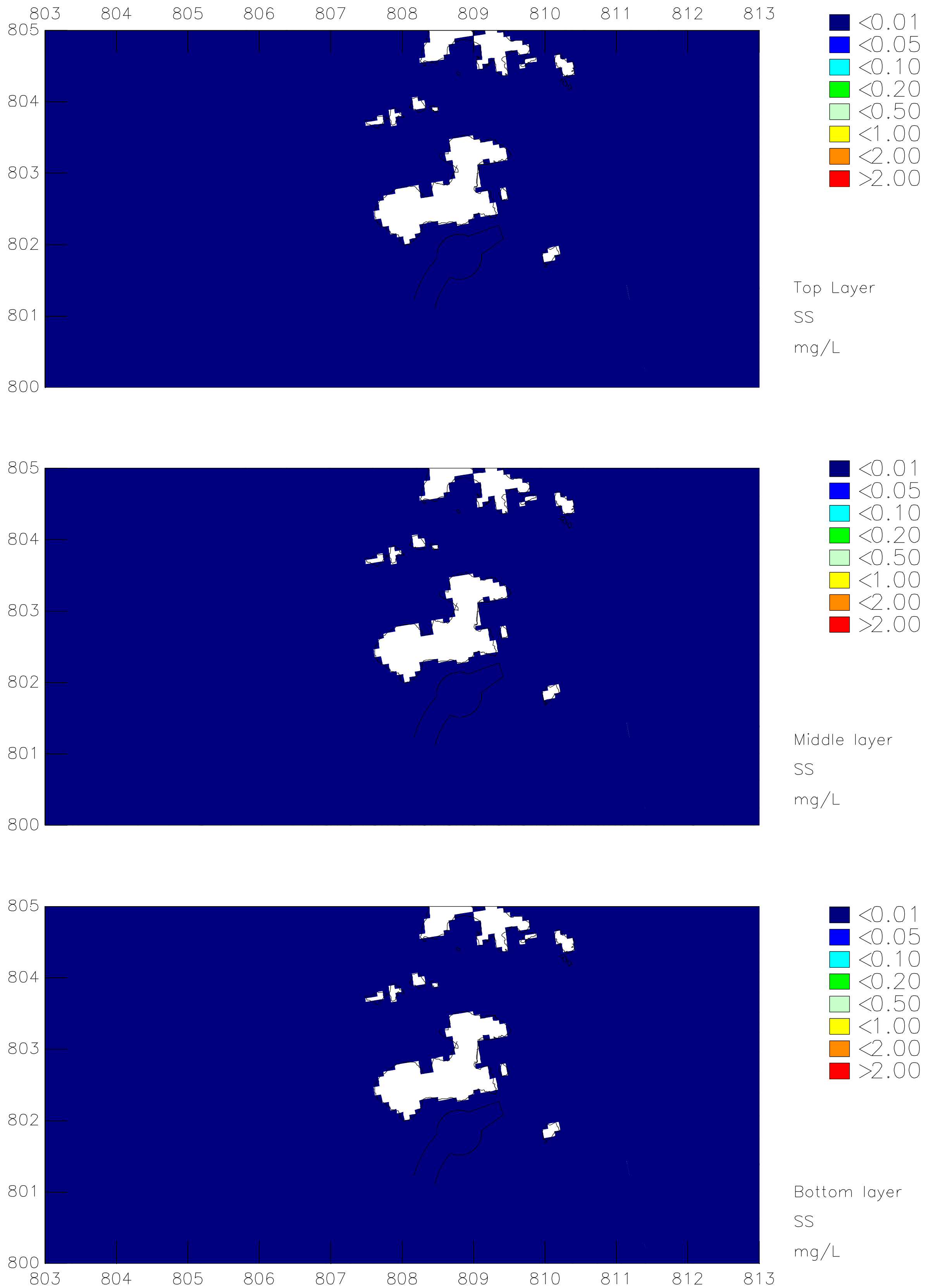
Figure SK_I-27




| | | |
|---|---|---|
| SS (mg/L)<br>South Soko Sewage emission – Operational<br>Maximum, Mean and Minimum depth averaged increase | Dry Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-28 |

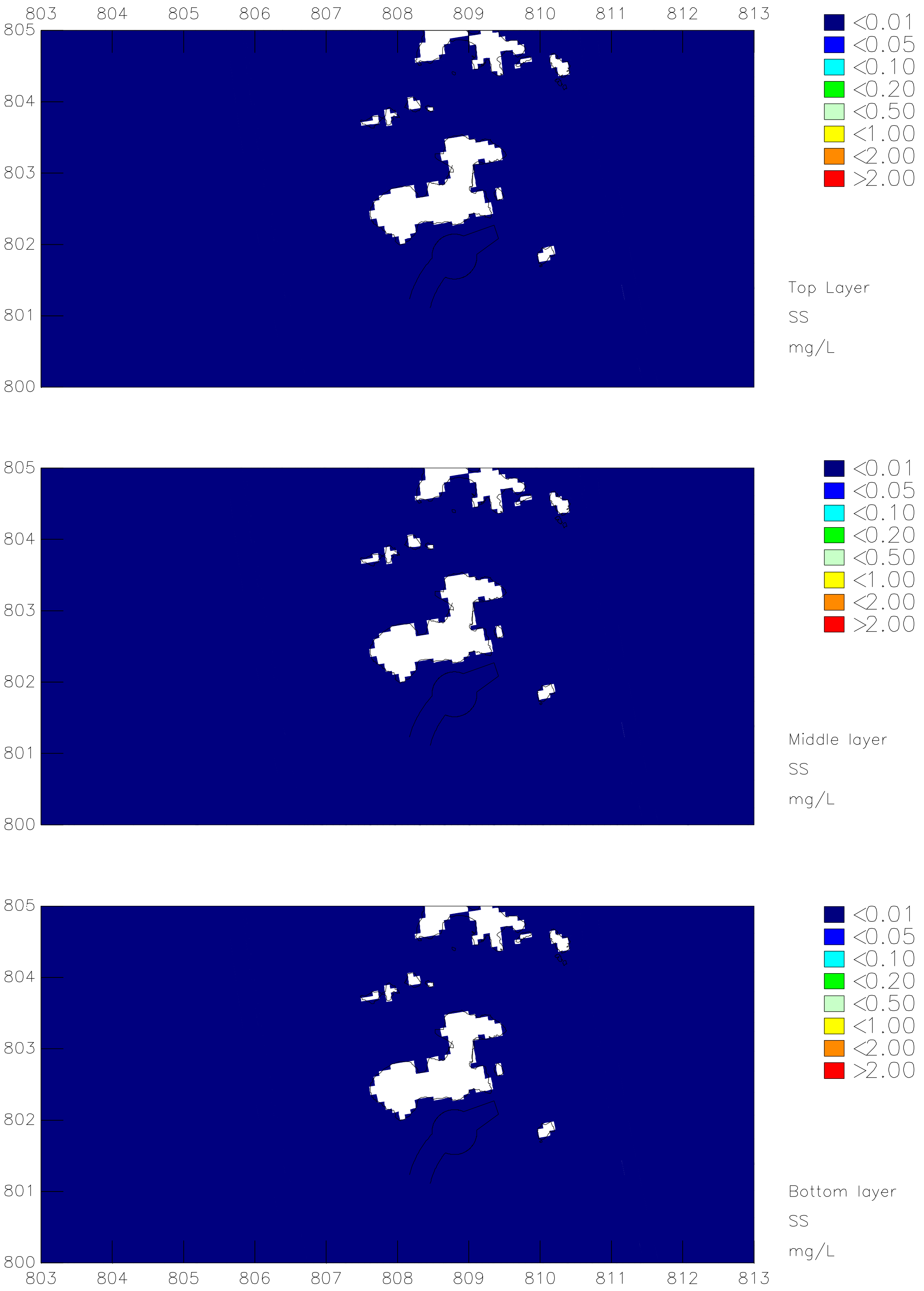



SS (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-29

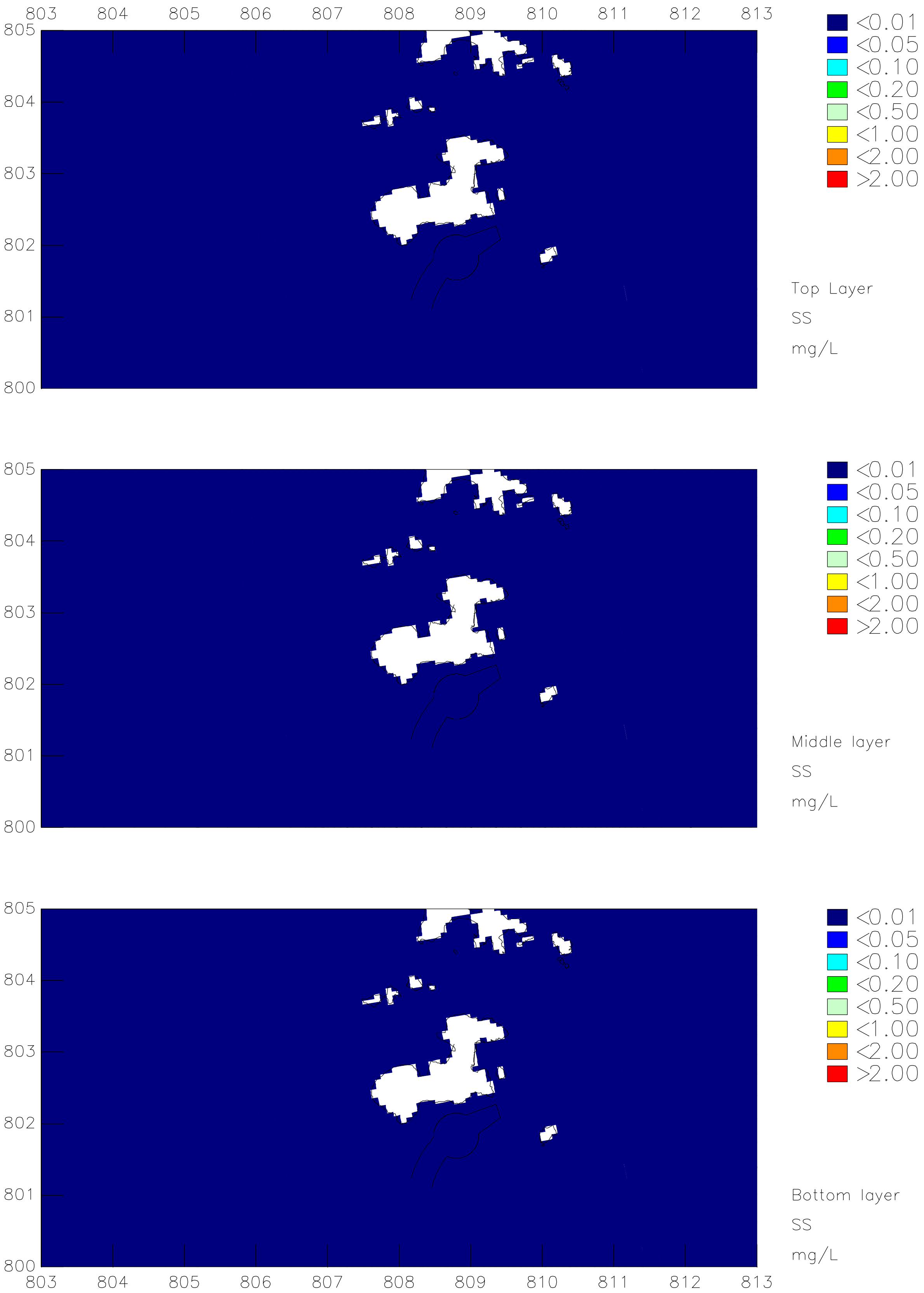



SS (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-30

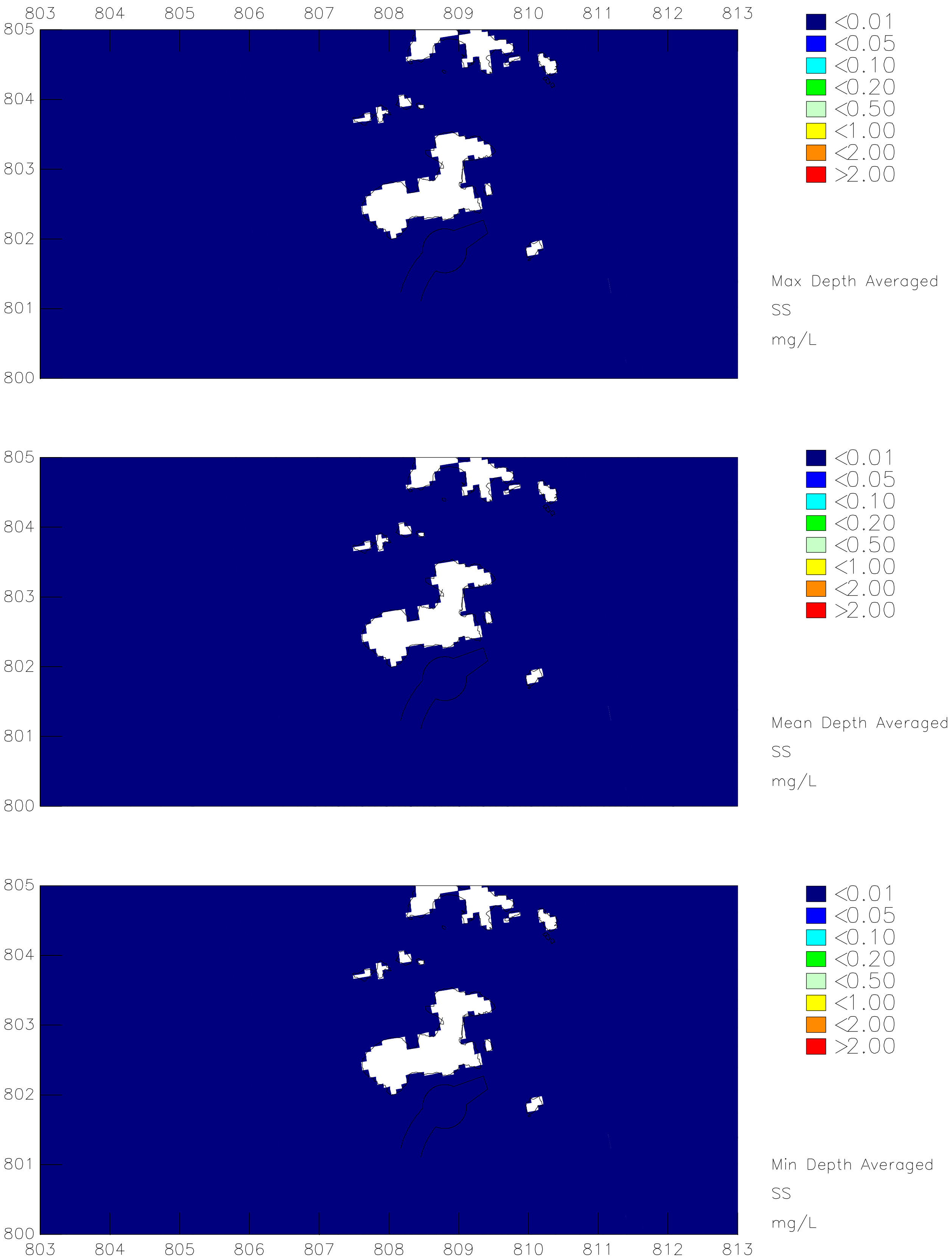



SS (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

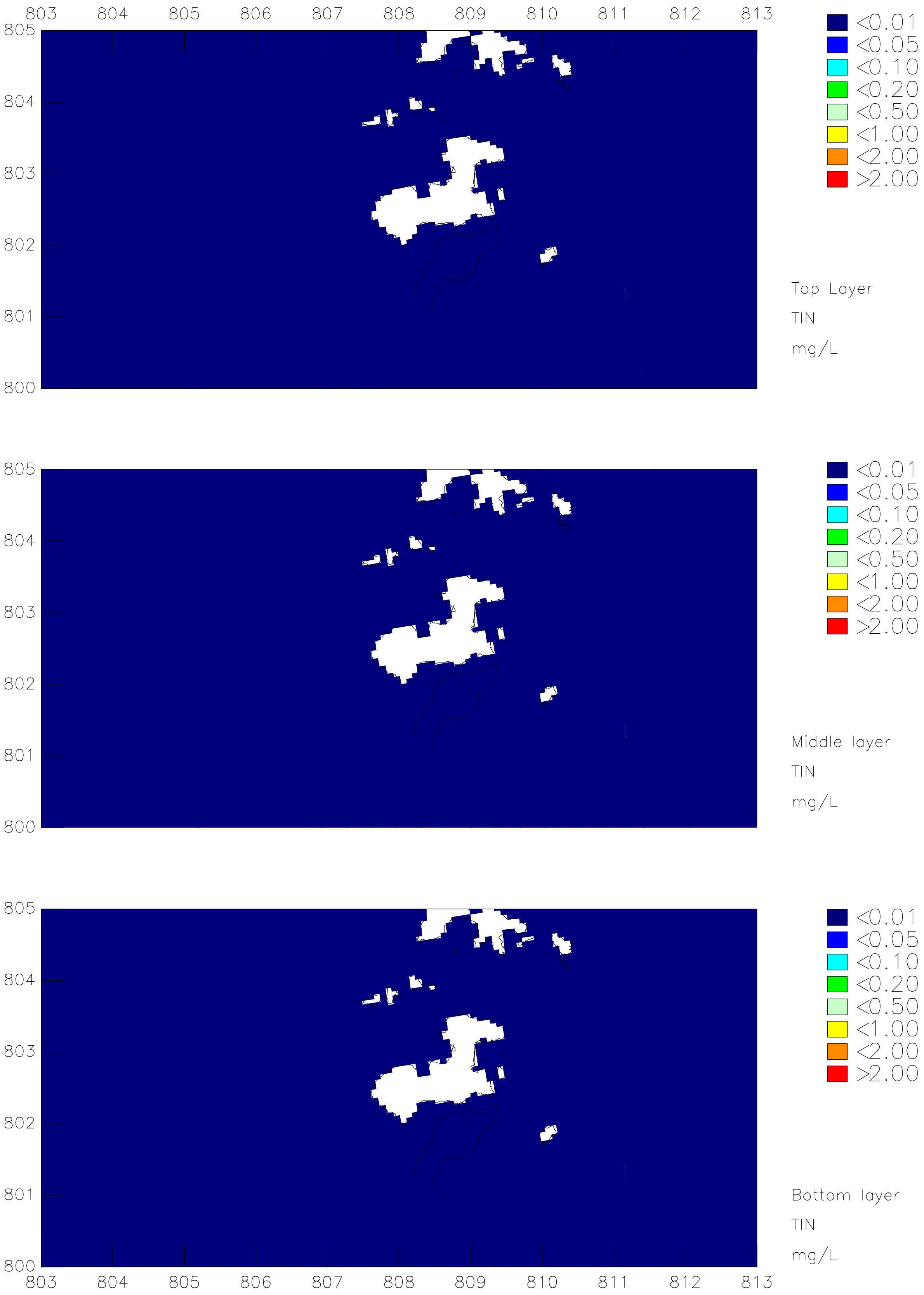
Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-31




| | | |
|---|---|---|
| SS (mg/L)<br>South Soko Sewage emission – Operational<br>Maximum, Mean and Minimum depth averaged increase | | |
| | Wet Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-32 |

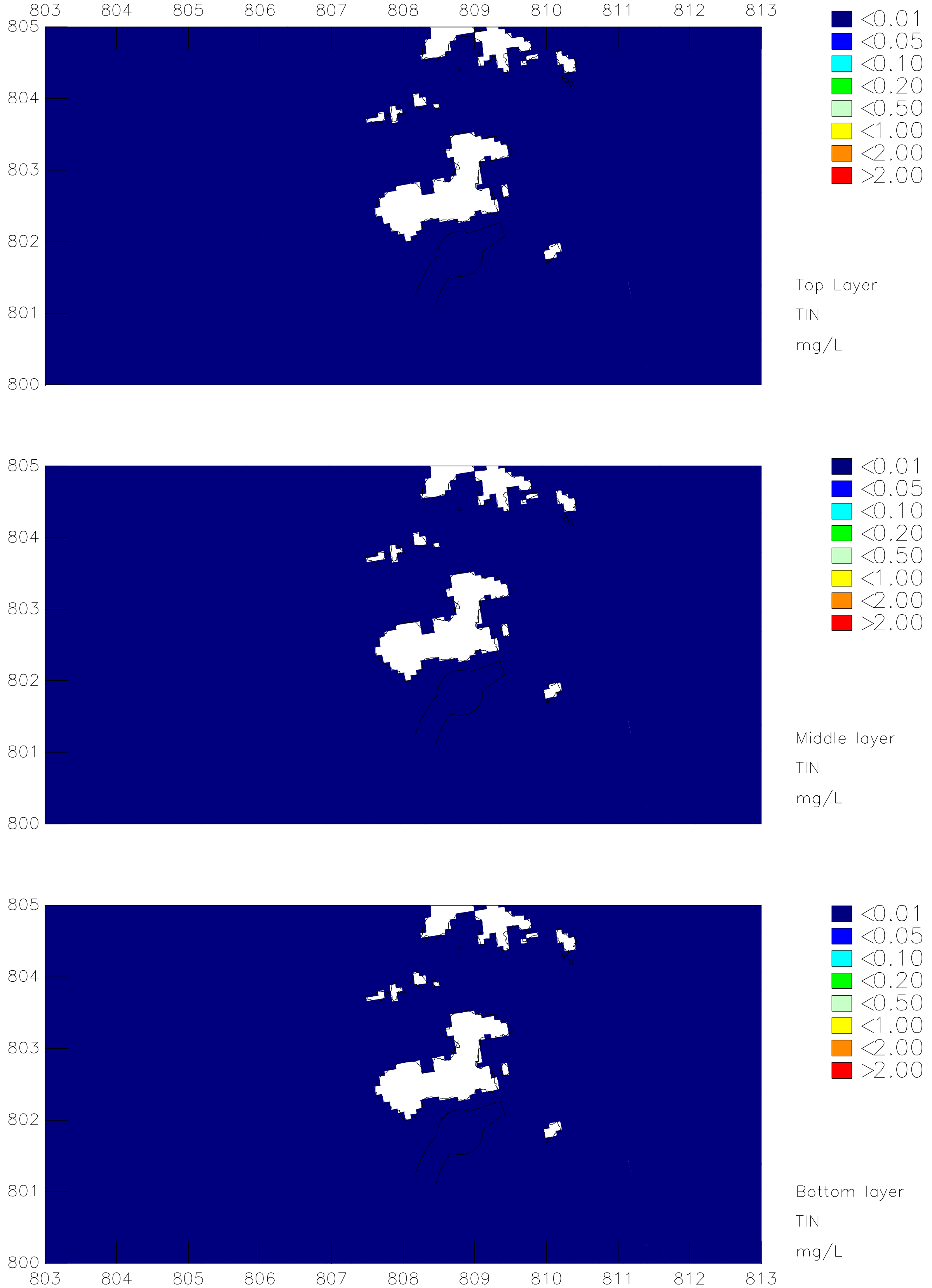



TIN (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-33

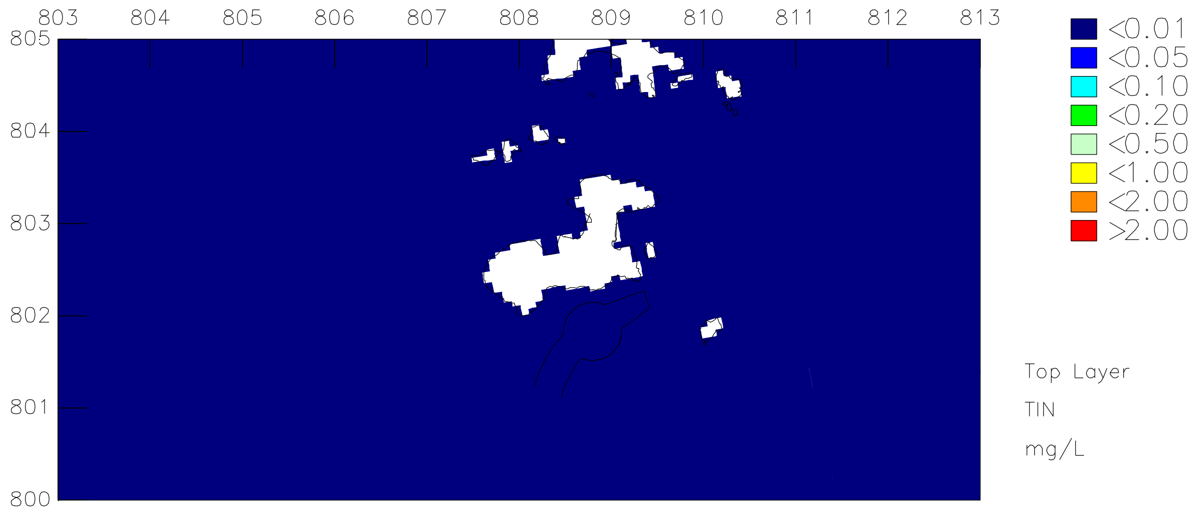


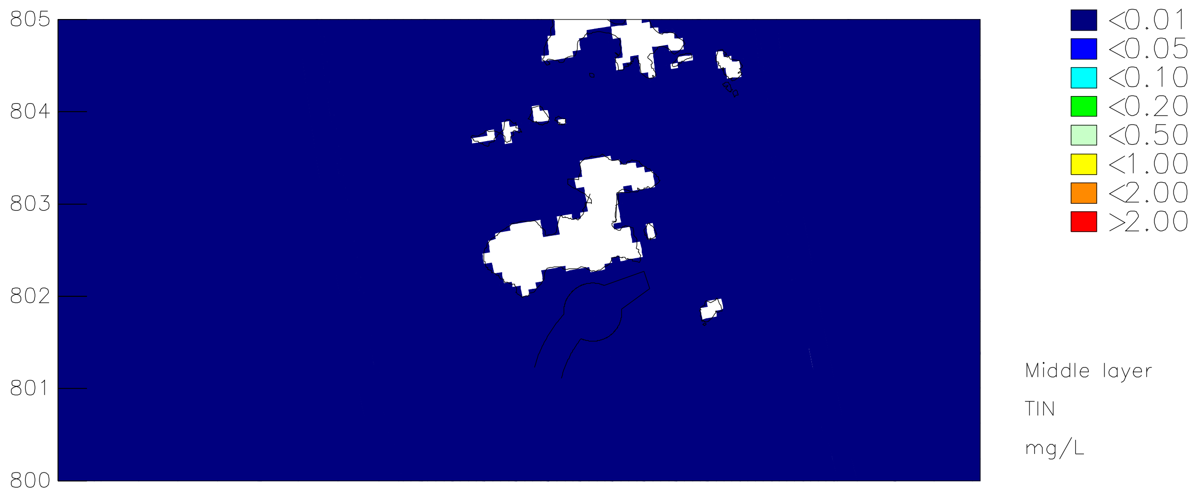

TIN (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

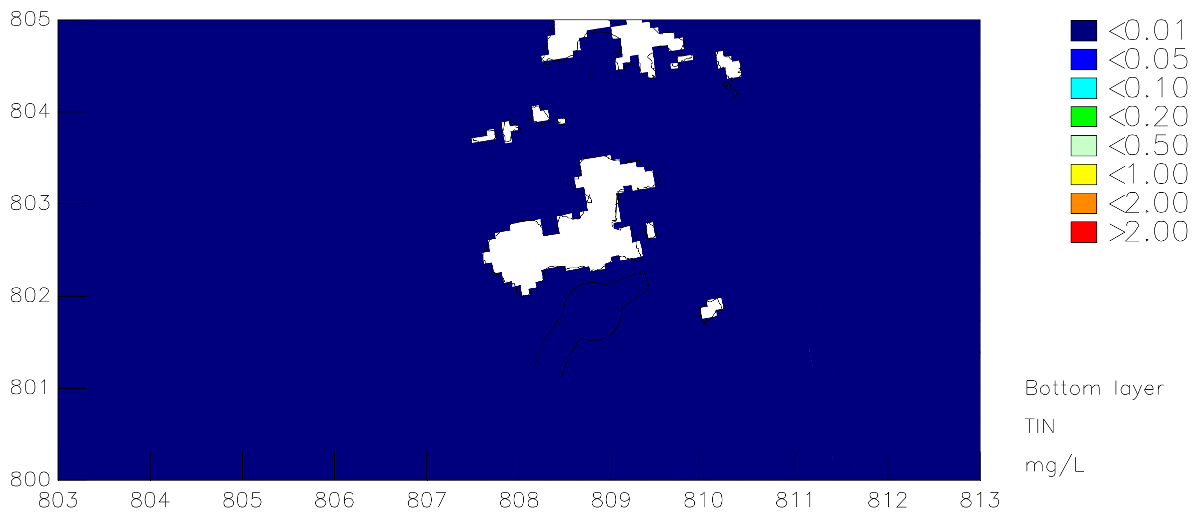
Dry Season

WL | Delft Hydraulics – ERM

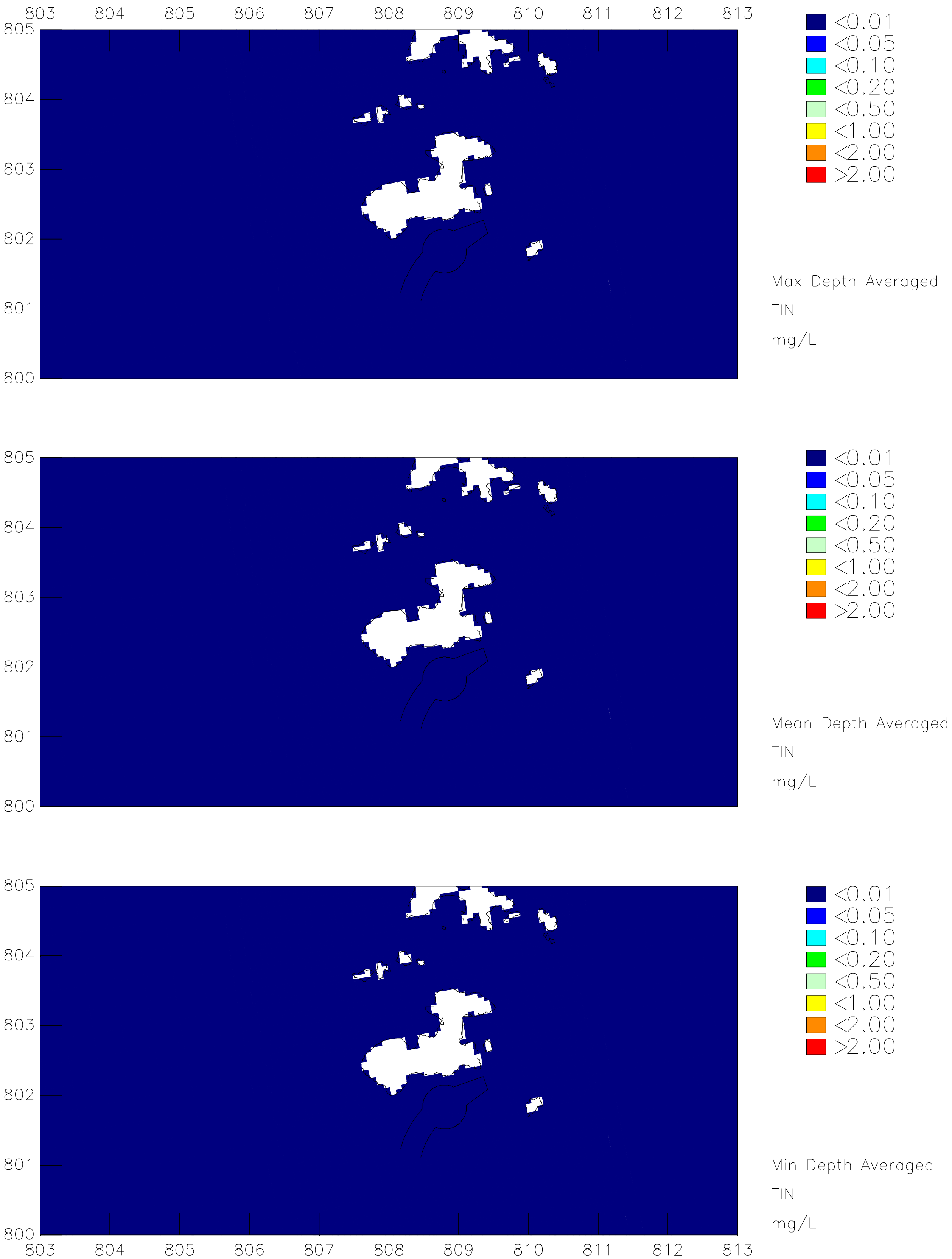
Figure SK_I-34




| | | |
|---|---|---|
| TIN (mg/L) minimum increase<br>South Soko Sewage emission – Operational<br>Top, Middle and Bottom layer | | |
| | Dry Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-35 |

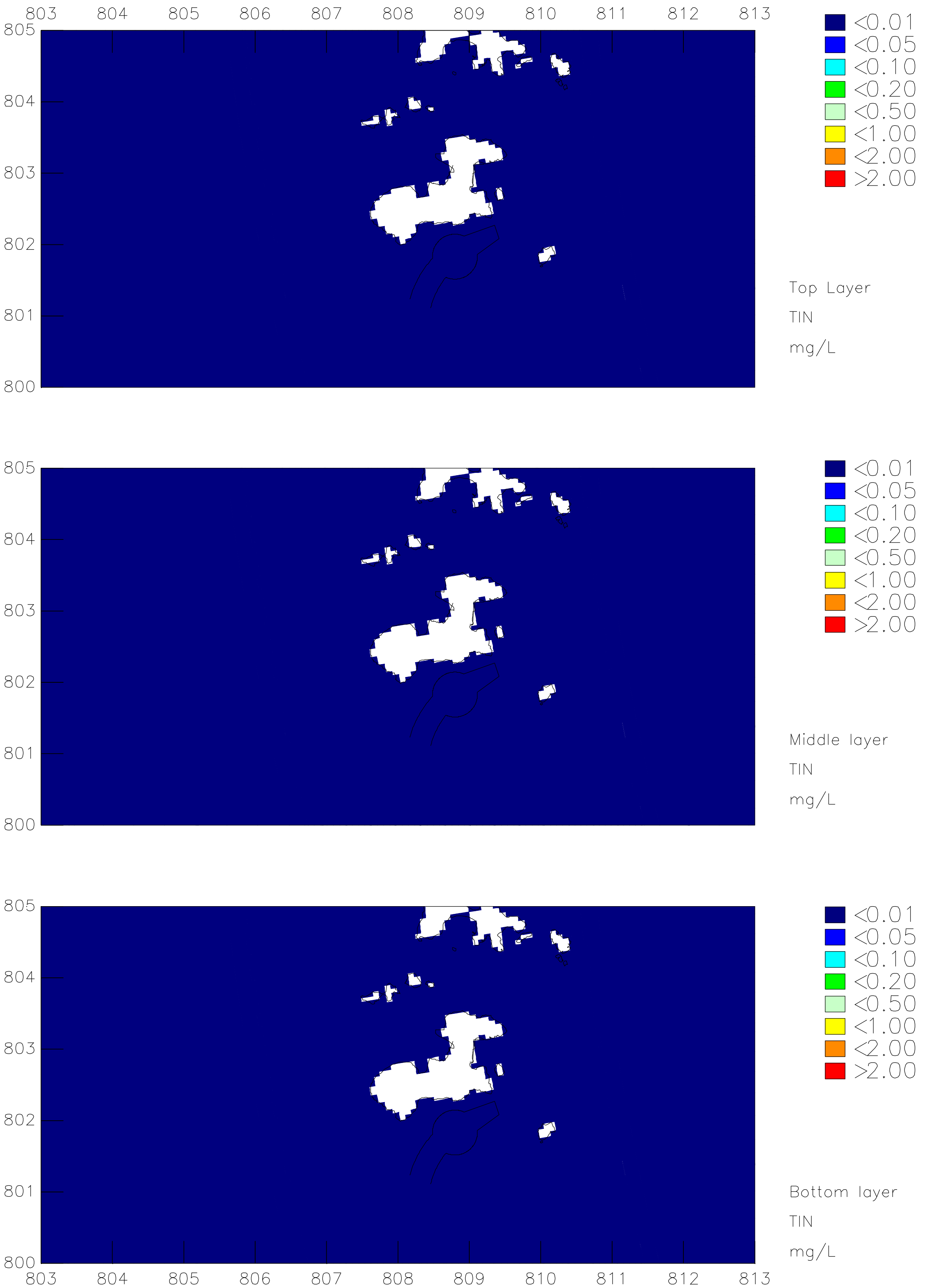



TIN (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-36

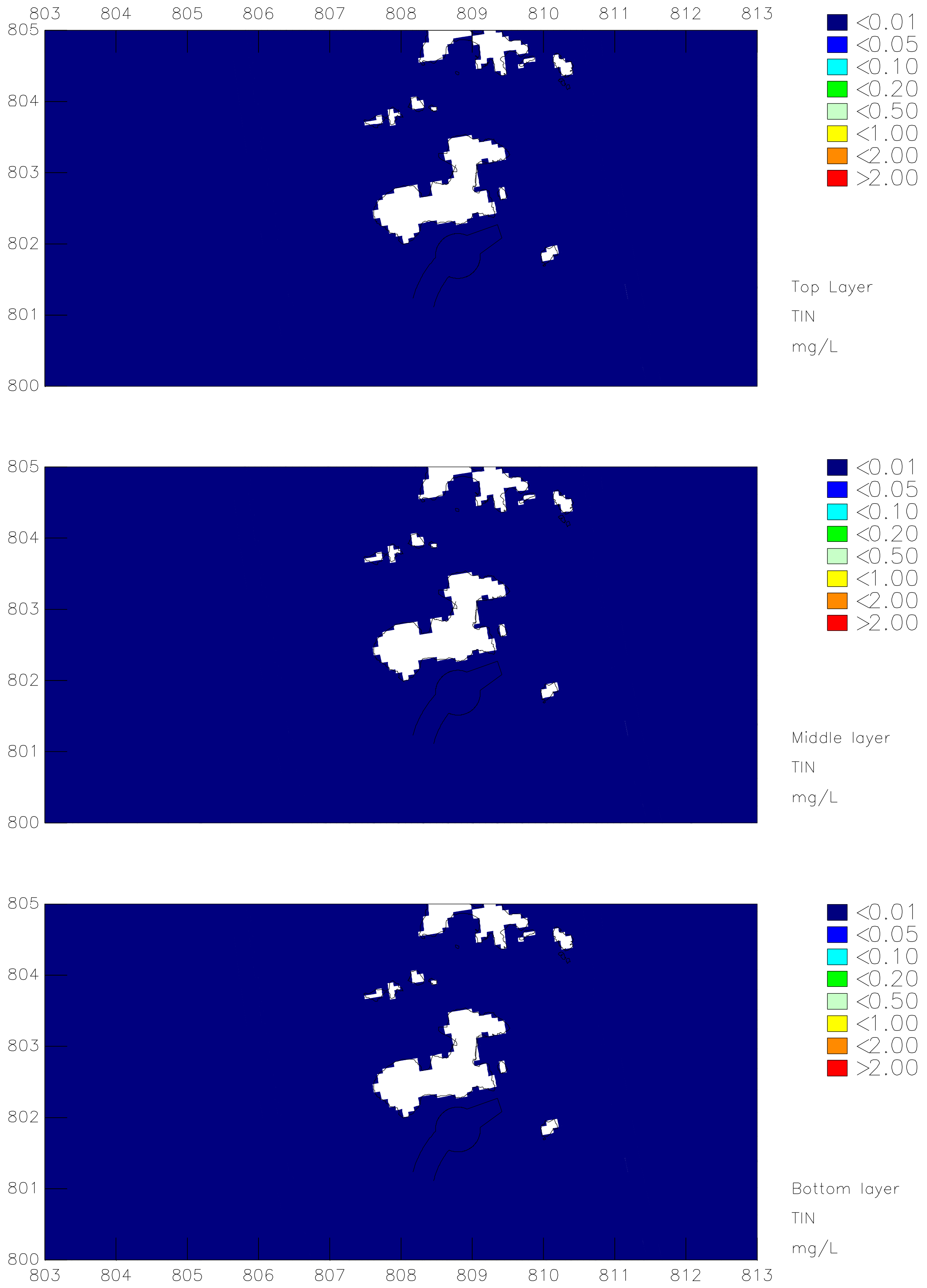



TIN (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-37

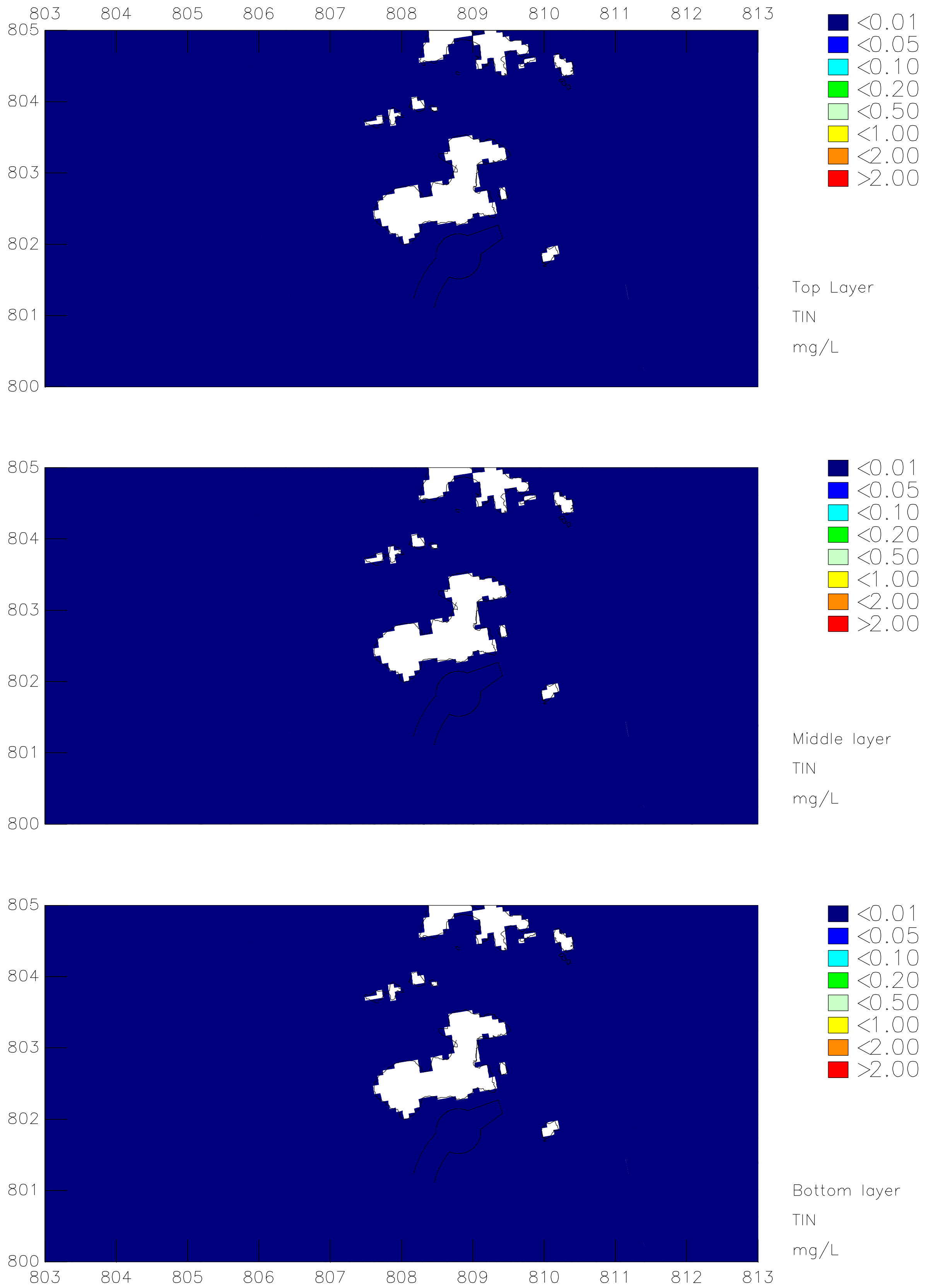



TIN (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-38

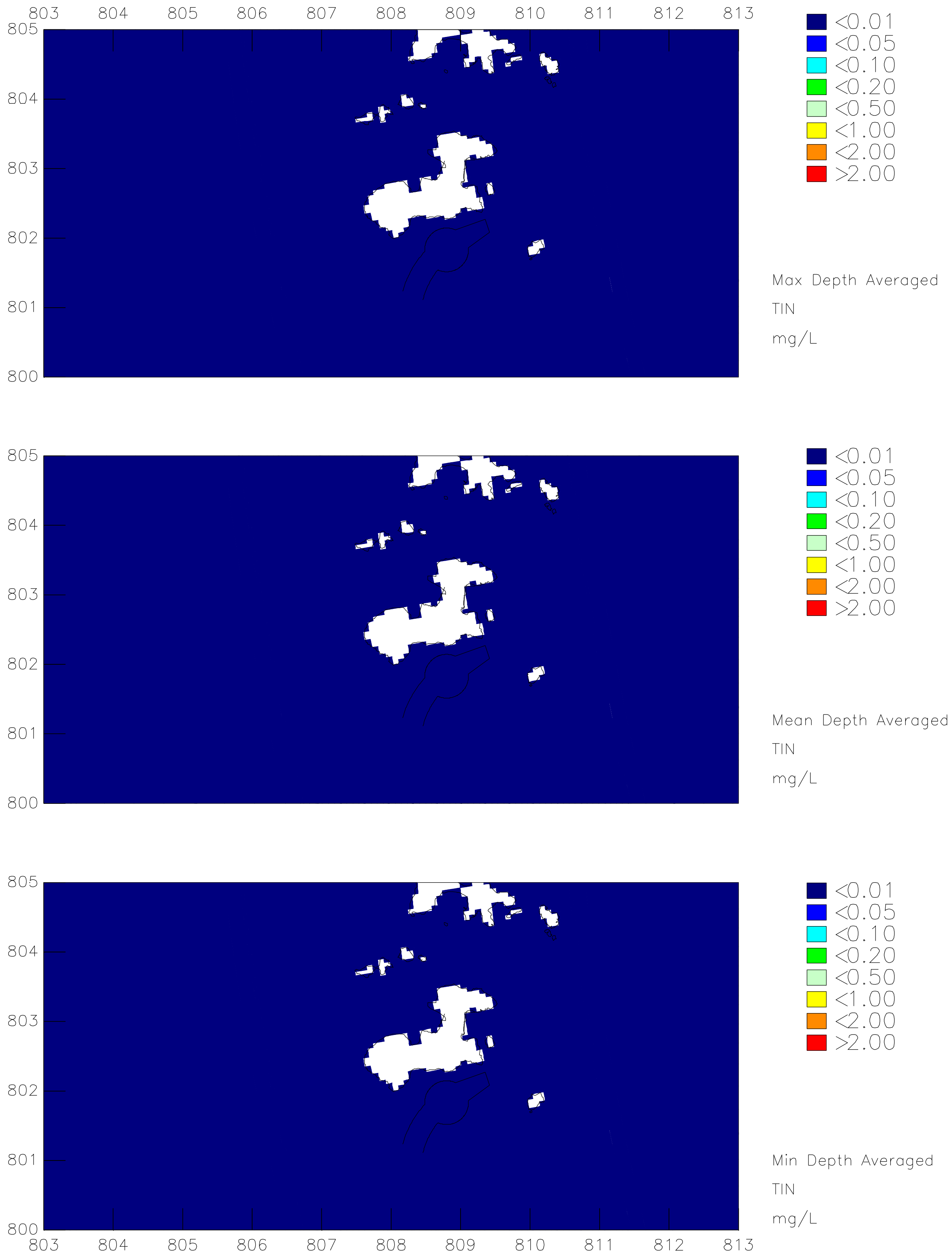



TIN (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-39

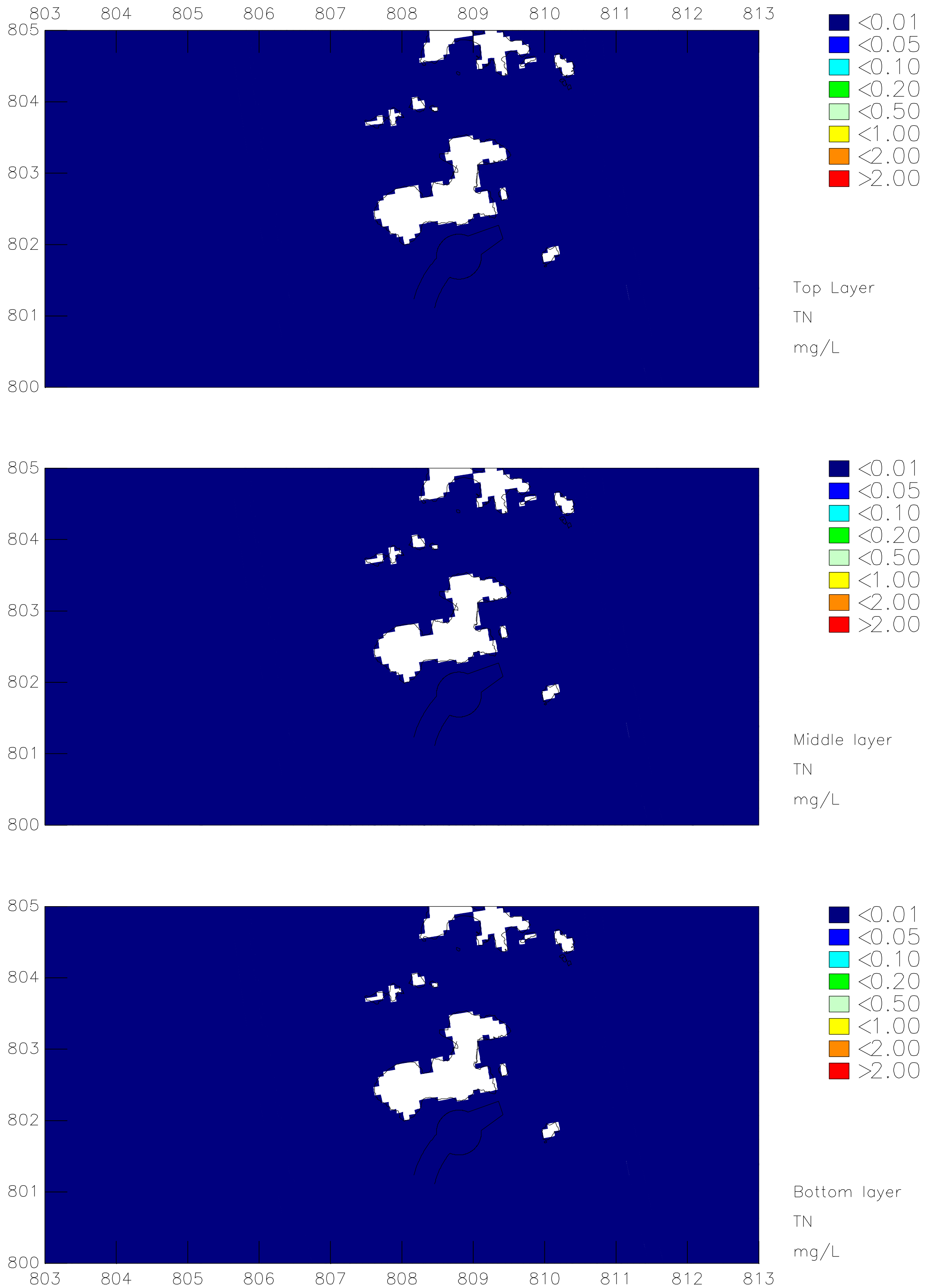



TIN (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged increase

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-40

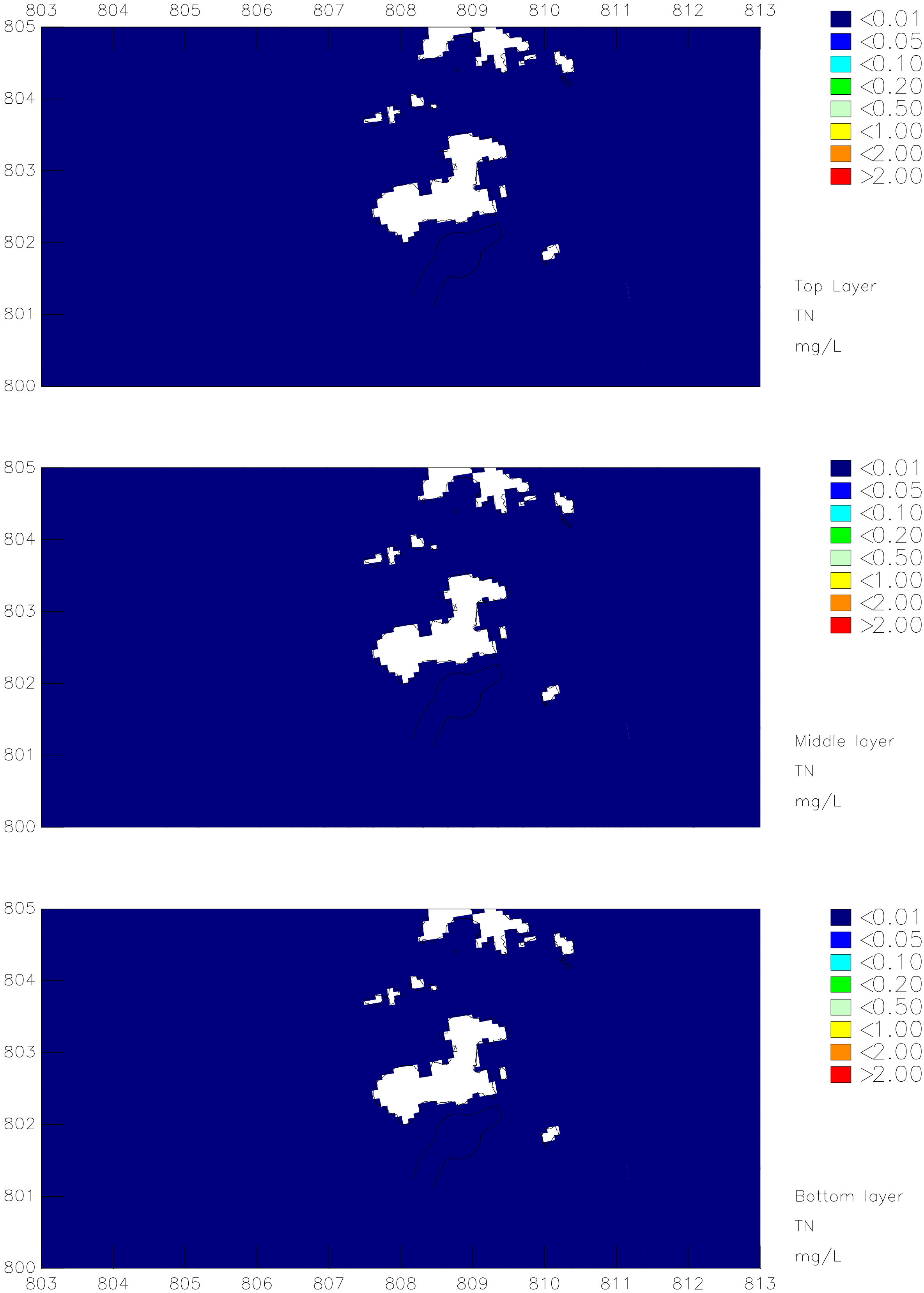



TN (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-41

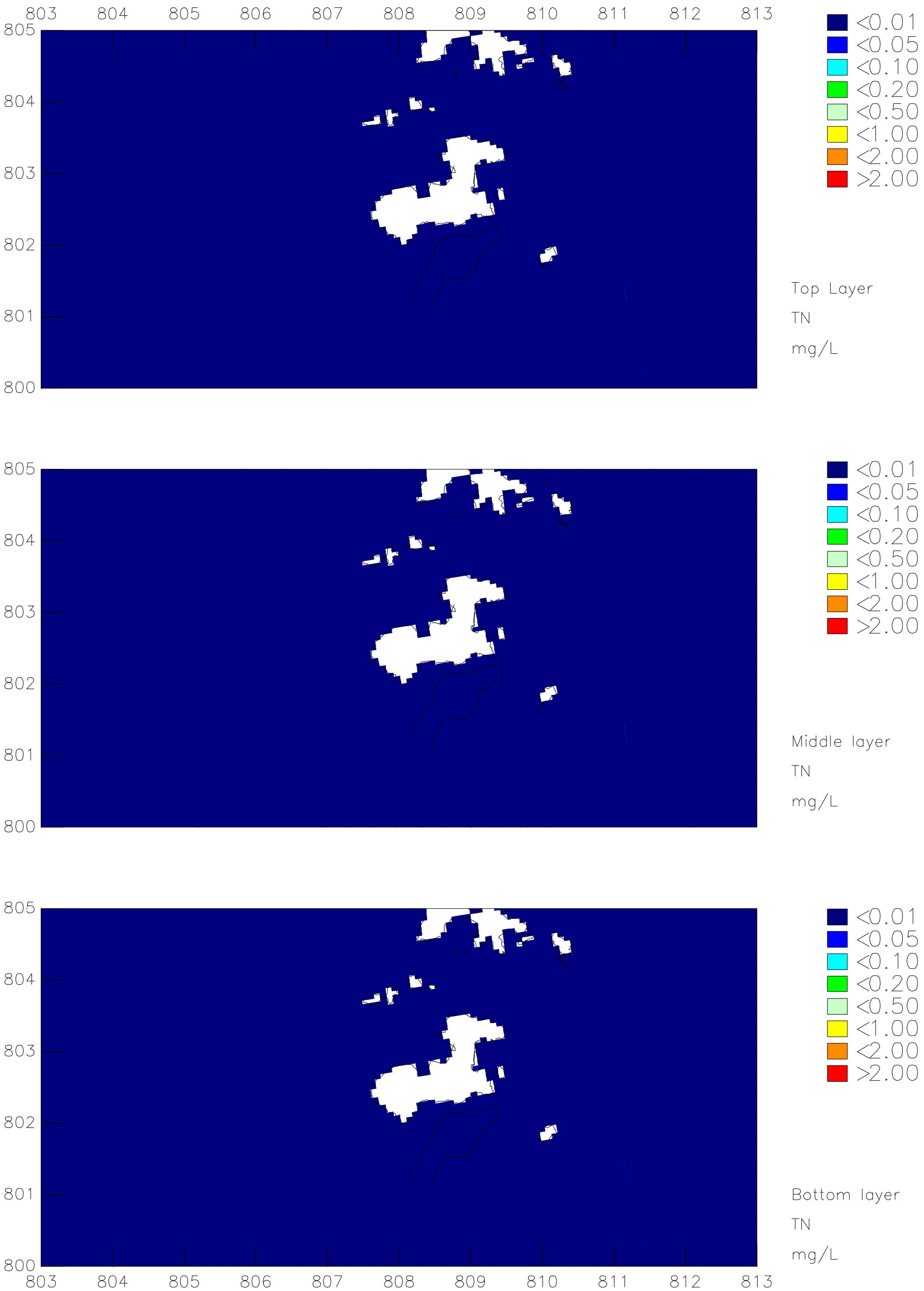



TN (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-42

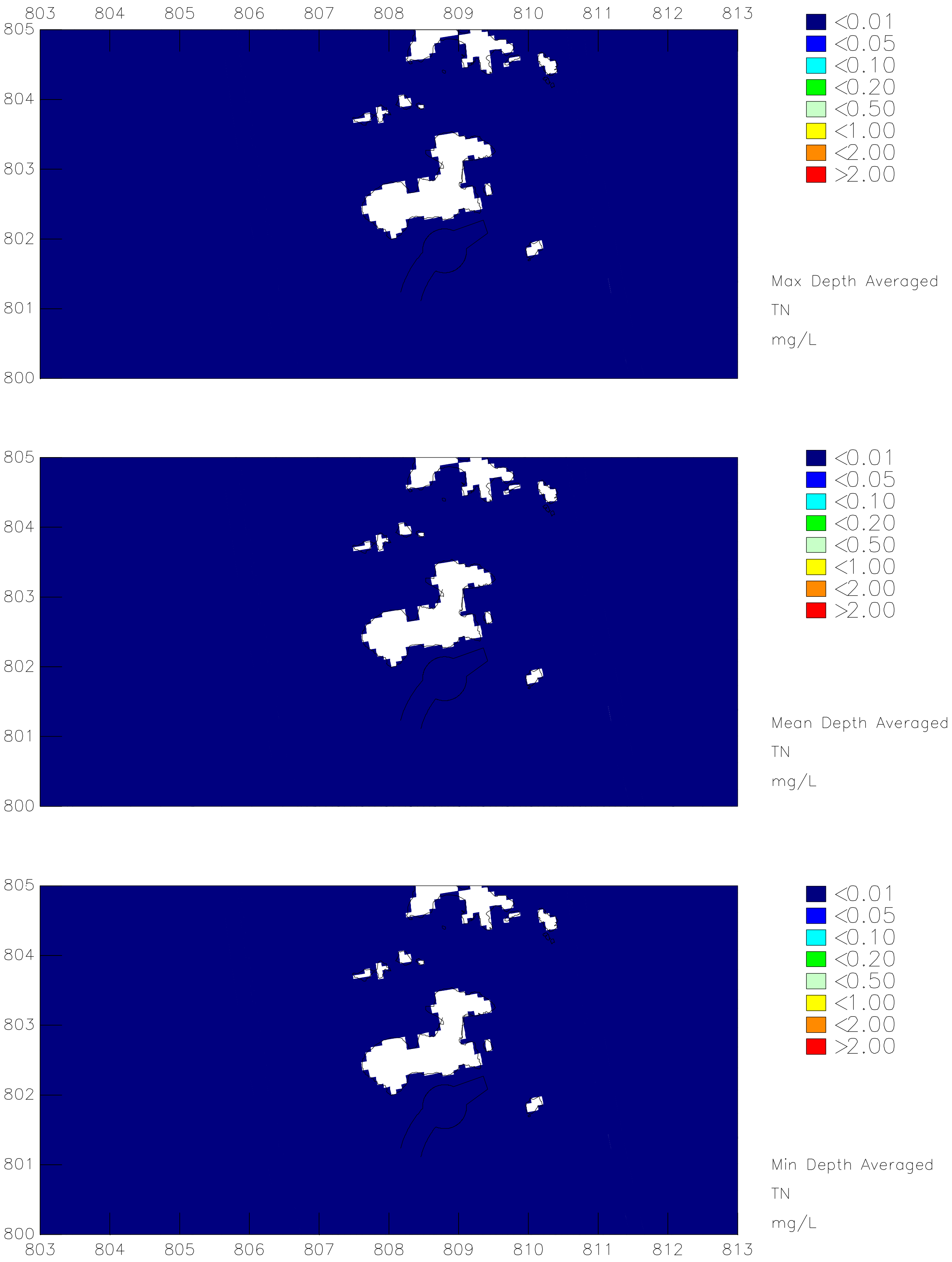



TN (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-43

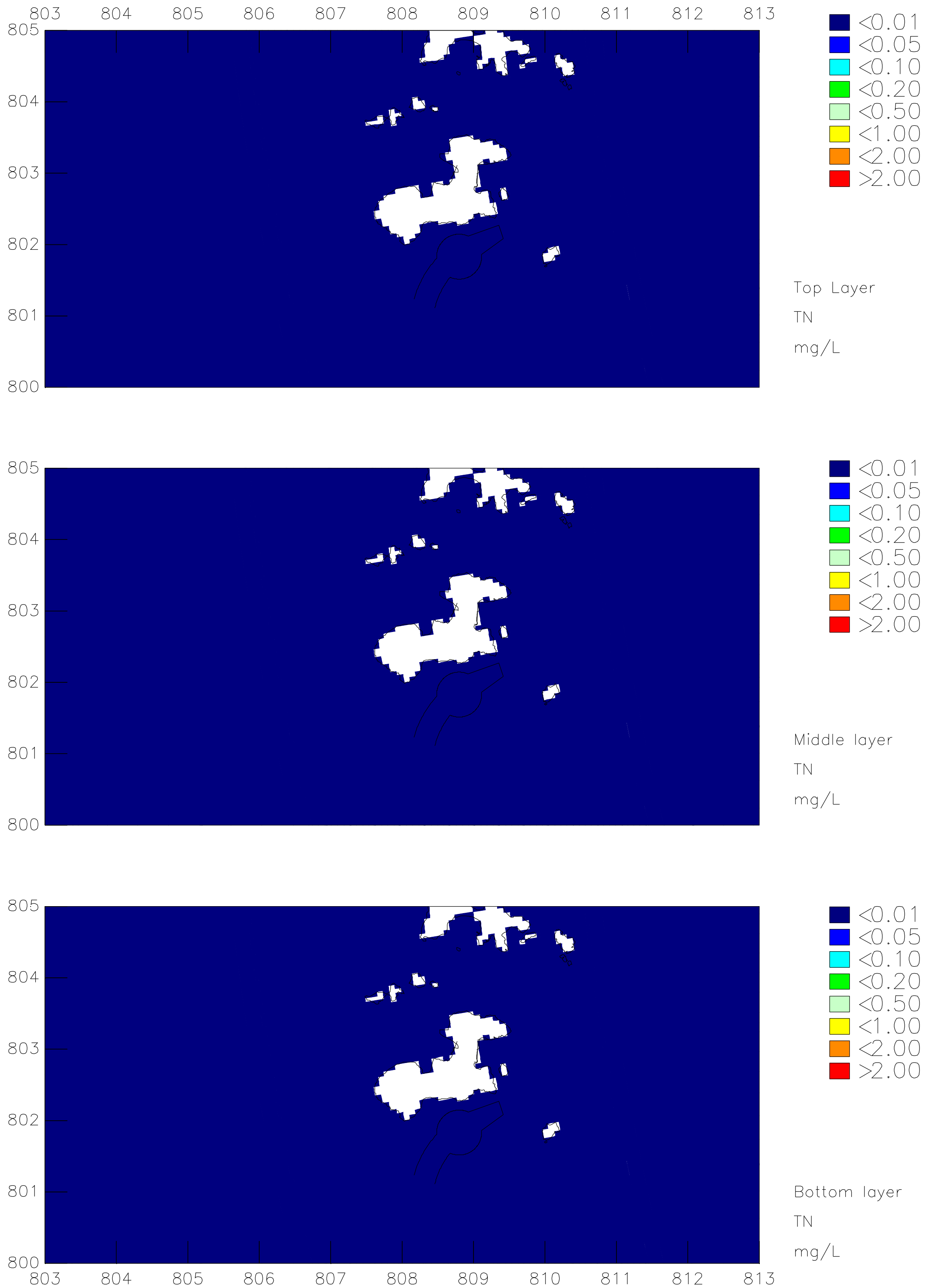



TN (mg/L)
South Soko Sewage emission – Operational
Maximum, Mean and Minimum depth averaged increase

Dry Season

WL | Delft Hydraulics – ERM

Figure SK_I-44

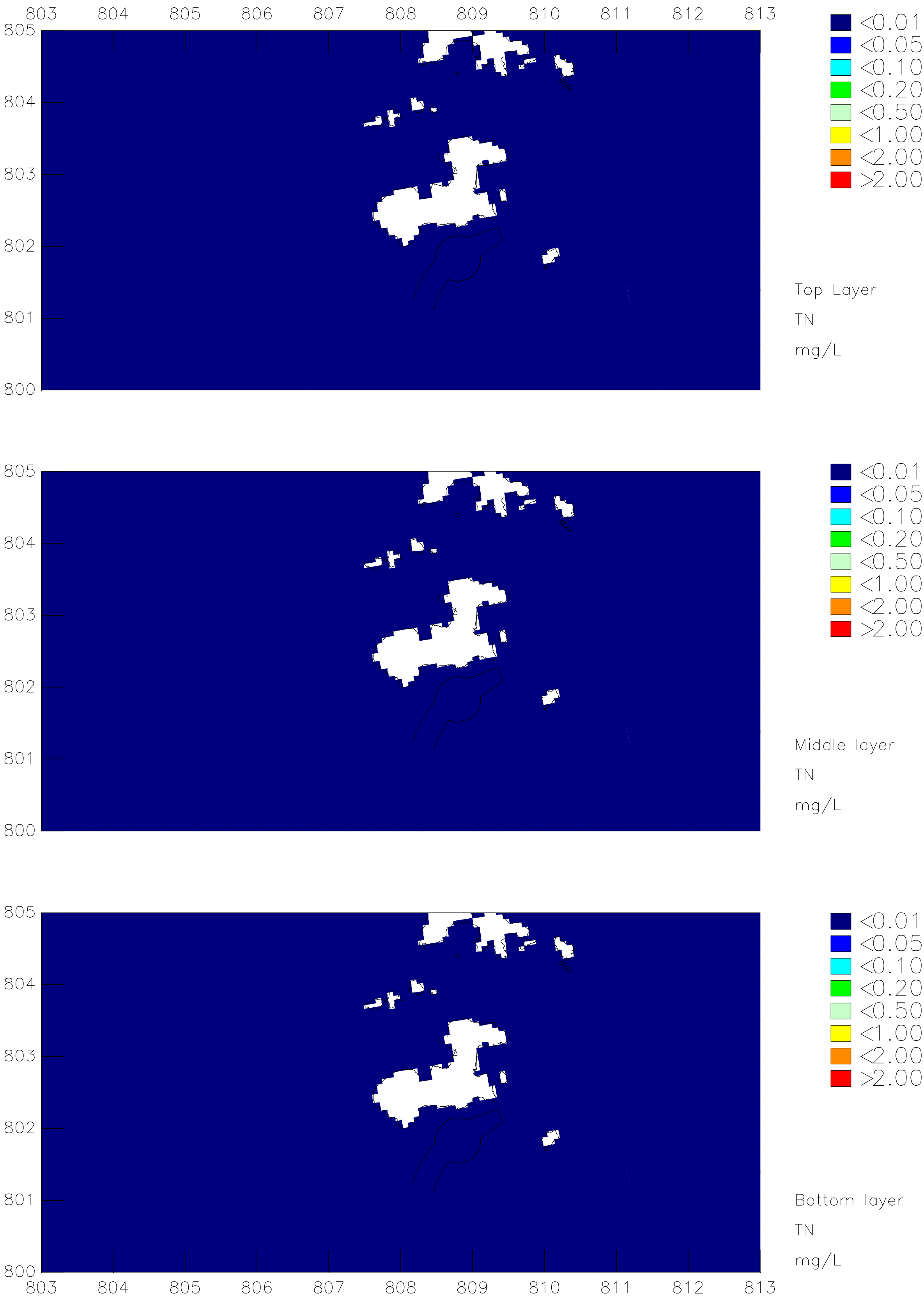



TN (mg/L) maximum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-45

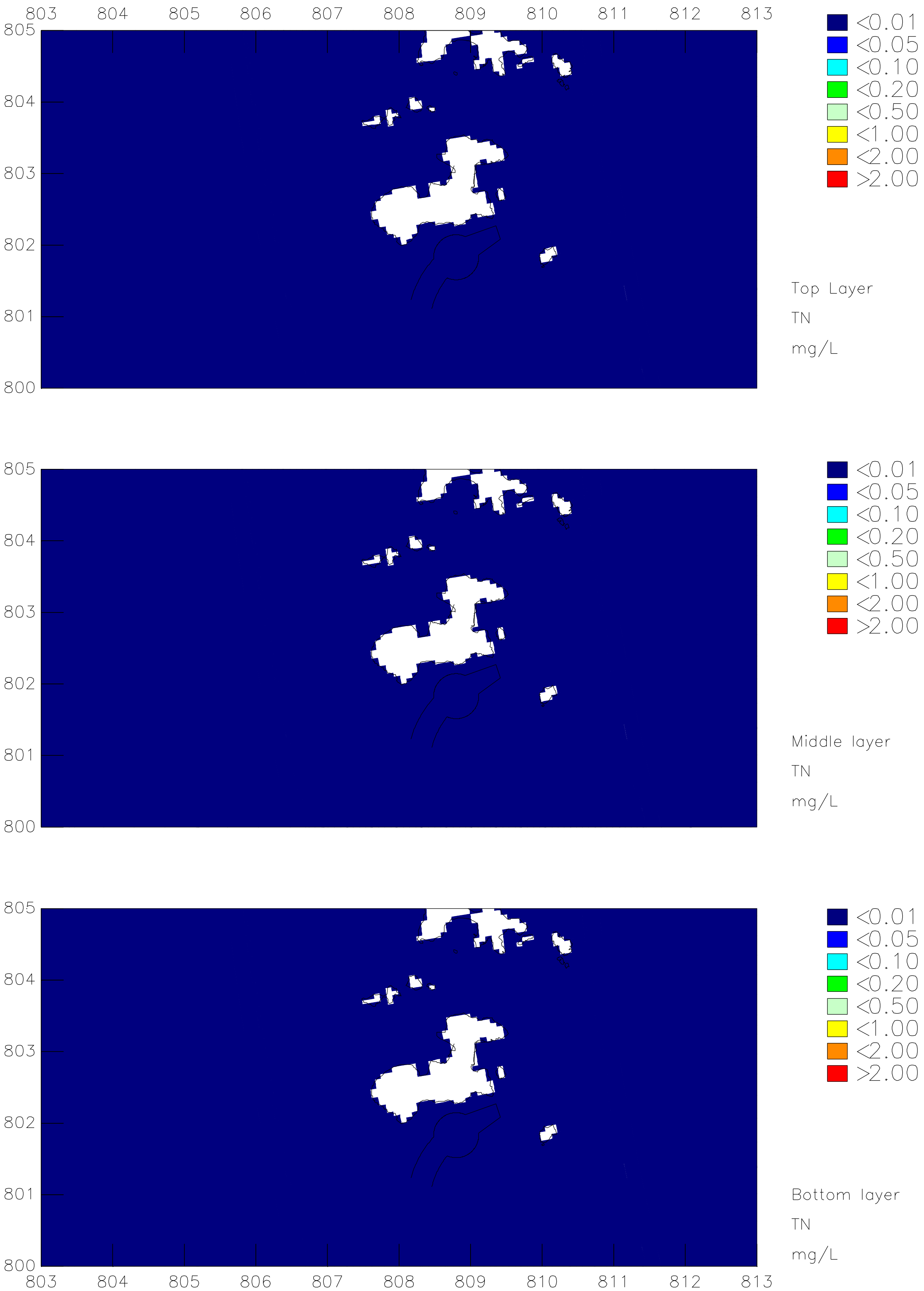



TN (mg/L) mean increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-46

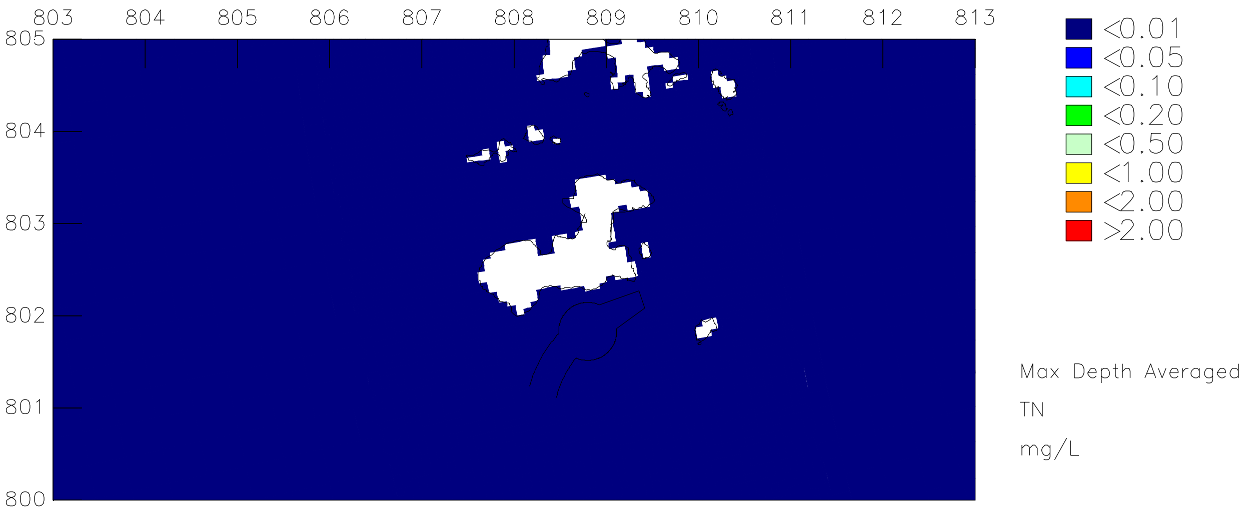


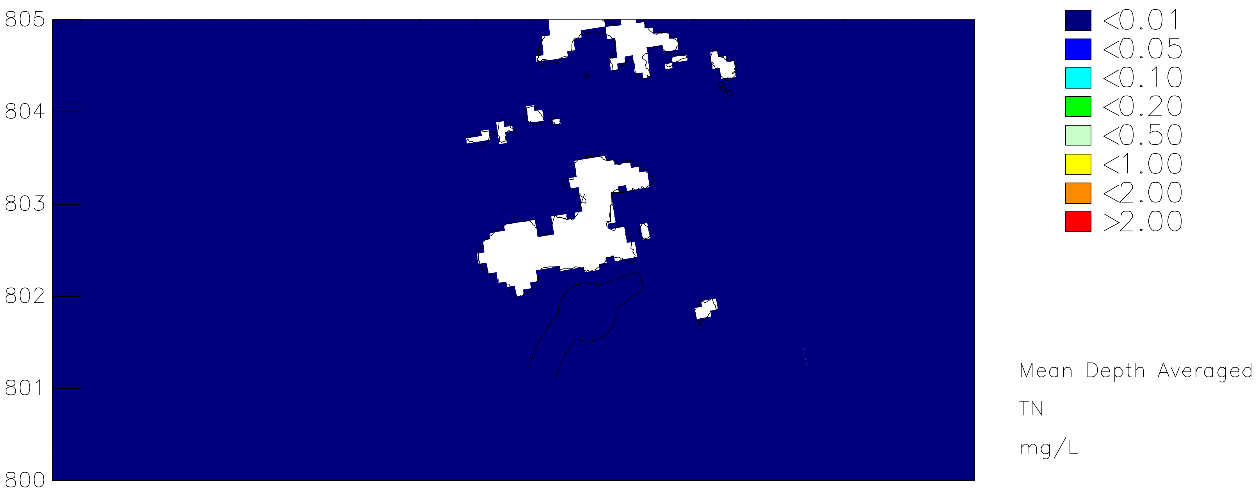

TN (mg/L) minimum increase
South Soko Sewage emission – Operational
Top, Middle and Bottom layer

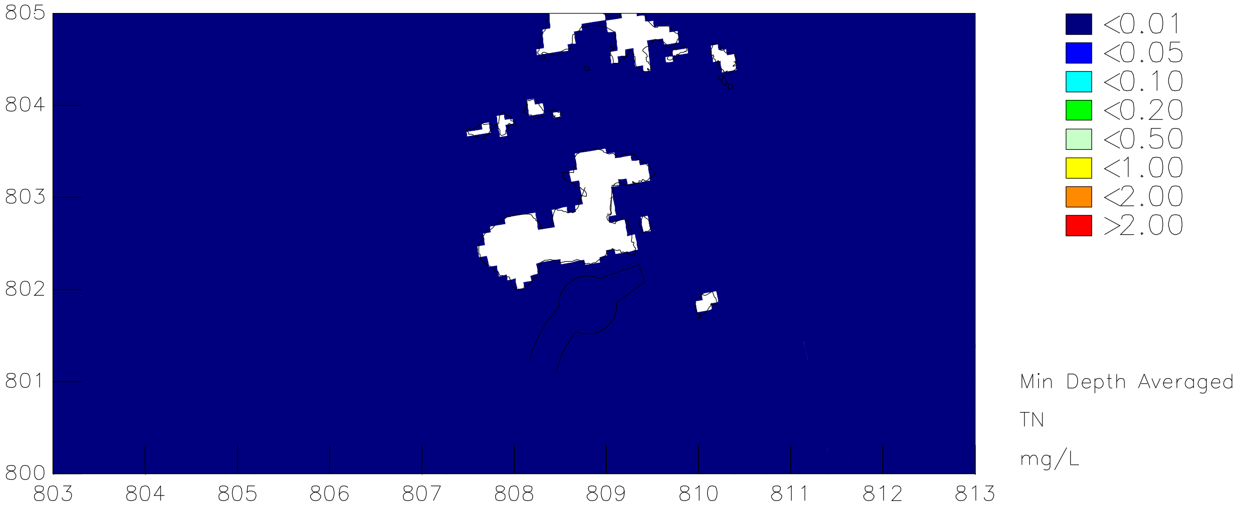
Wet Season

WL | Delft Hydraulics – ERM

Figure SK_I-47




| | | |
|---|---|---|
| TN (mg/L)<br>South Soko Sewage emission – Operational<br>Maximum, Mean and Minimum depth averaged increase | Wet Season | |
| WL \| Delft Hydraulics – ERM | | Figure SK_I-48 |

Annex 6J

# Hydrotest - Ecotoxicity Information on Proposed Corrosion Inhibitor

# 1 TECHNICAL NOTE ON CORROSION INHIBITOR CCI 250

## 1.1 BACKGROUND

CCI 250, a corrosion inhibitor, is proposed for use during hydrotesting of the proposed gas pipeline between the Proposed LNG terminal on South Soko Island and Black Point. Hydrotest waters which will contain CCI250 would be disposed by discharge into the sea.

The UK-based manufacturer was required to assess CCI 250's environmental effects. "The test results were submitted to CEFAS (Centre for Environment, Fisheries & Agricultural Science – an Executive Agency for the UK Government) and was accepted onto the List for Approved Products suitable for use by the North Sea Oil and Gas Industry. The Product Based Hazard Quotient given as 2.40E-02, one of the the 'least environmentally hazardous' classifications. Subject to normal government restrictions, CCI 250 can therefore be discharged into the marine environment."

Under the European offshore notification scheme, the use of CCI 250 is accepted by countries of the European Community including Belgium, Denmark, Finland, France, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom, Luxembourg and Switerland, all of which are signatories of the OSPAR agreement for the protection of the marine environment. Furthermore, according to the manufacturer, the use of CCI 250 is approved in countries such as Russia, Singapore, Korea, USA and UAE. According to the manufacturer, there are no instances, where use of CCI 250 has been refused on environmental grounds.

The tests on CCI 250 were conducted to determine biodegradability, bioaccumulation and toxicity. These demonstrated CCI 250 has good biodegradability and low bioaccumulation. Toxicity of CCI 250 was based on tests using:

- **Fish** – Juvenile turbot *Scophthalmus maximus* (synonymous with *Psetta maxima*)
- **Sediment reworkers** - amphipod *Corophium volutator*
- **Marine algae** – the diatom *Skeletonema costatum*; and,
- **Marine invertebrates** – the copepod *Acartia tonsa*

The results of the toxicity tests were summarised as follows [(1)] :

- **Fish** (juvenile Turbot *Scophthalmus maximus*): tested in accordance with OECD Guideline 203 to determine a 96 hour $LC_{50}$ value (the Lowest Concentration to kill 50% of the fish during a 96 hour test). All the fish survived the test, so the $LC_{50}$ value was determined to be >1000.0 mg per litre. *That is, CCI 250 was determined to be relatively harmless to fish.*

(1) Extracted from CEFAS Summary Sheet

- **Sediment reworkers** (amphipod *Corophium volutator*): test method based on PARCOM (Paris Commision Protocol) 1995, a 240 hour test. The $LC_{50}$ was found to be 7024.8 mg $kg^{-1}$ dry weight of sediment, with the NOEC (No Observable Effect Concentration) found to be less than 5623.4 mg $kg^{-1}$. *These results showed CCI 250 to have a low toxicity to sediment reworkers*.

- **Marine algae** (*Skeletonema costatum*): tested in accordance with ISO?DIS 10253 over 72 hours. The $EC_{50}$ value (Effective Concentration, the amount of material which inhibited algal growth rate by 50% over the test period) was calculated to be 23.2 mg $l^{-1}$. The NOEC was determined to be 17.8 mg $l^{-1}$. *This showed CCI 250 was moderately toxic to marine algae*.

- **Marine Invertebrates** (copepod *Acartia tonsa*): tested according to the draft method ISO 14669:1999(E) over 48 hours. The $EC_{50}$ value (Effective Concentration, the amount of material which immobilised 50% of the copepods over the test period) was calculated to be 260.1 mg $l^{-1}$. *This test showed CCI 250 had a relatively low toxicity level to marine invertebrates*.

## 1.2 *PURPOSE OF THIS NOTE*

This note discusses the applicability of these toxicity test findings in the Hong Kong environment in terms of suitability of test organisms to reflect effects on Hong Kong's marine ecology.

## 1.3 *RELEVANCE OF TEST ORGANISMS*

### 1.3.1 *Scophthalmus maximus*

The flounder *Scophthalmus maximus* is a commercially important temperate predatory benthic species, living on sandy, muddy, rocky and mixed bottom habitat, and particularly favours brackish areas. Its natural range is along European coast including the Baltic and North Sea and it also occurs in the warmer Mediterranean and Black Seas as well as off Northwest Africa [(1)]. In China, it is an important species used in aquaculture operations.

Although, this fish does not naturally occur in Hong Kong, there are a diversity of related species which occupy similar ecological niches, have similar functional adaptations and comparable ecologies and habitat preferences. To date 28 species of flounder mostly warm water species, are recorded from Hong Kong waters, with some species having ranges into temperate areas off Japan and the Yellow Sea [(2)] . As with other marine groups, the flounders and other ichthyofauna of Hong Kong are comprised representatives from both temperate and warmer water regions. This is because Hong Kong lies at the junction of the temperate Palaearctic Japonic zoogeographical region and the tropical Oriental region. Sea surface temperatures in Hong Kong range down to 12°C in the dry season, and as high as 32°C in the wet season.

(1) www.fishbase.org

(2) www.hk-fish.net

Based on this information, it is considered there is no reason to suggest that *Scophthalmus maximus* is not a suitable test organism for reflecting toxicity effects in the Hong Kong marine environment.

### 1.3.2 *Corophium volutator*

The amphipod *Corophium volutator* (sometimes called a "mud-shrimp" or "scud") is a burrowing benthic animal which inhabits muddy bottom habitat. It is deposit and filter feeder that sifts the organic material (such as micro-algae and bacteria) from mud particles. In terms of its distribution, it is predominantly a European species, occurring from Scandinavia to the warmer waters of the Mediterranean.

Although *Corophium volutator* is not found locally, there are 10 species in the Family Corophiidae in Hong Kong including 4 in the genus *Corophium* (1). These species have comparable habits and ecologies to *Corophium volutator*. Among these locally occurring *Corophium*, are species which have distributions ranging into temperate regions such as Japan. As noted previously, in Hong Kong, marine organisms including the amphipods comprise a mix of temperate and tropical species.

Given that there are highly related *Corophium* species in Hong Kong which have representatives from temperate regions, it is considered there is no reason to suggest that *Corophium volutator* is not a suitable test organism for reflecting toxicity effects in the Hong Kong marine environment.

### 1.3.3 *Skeletonema costatum*

The diatom *Skeletonema costatum* is a cosmopolitan algal species found in coastal waters of all the world's oceans. It thrives in Hong Kong and is a common species recorded in phytoplankton samples locally.

Given that this species occurs locally, there is no reason to suggest that *Skeletonema costatum* is not a suitable test organism for reflecting toxicity effects in the Hong Kong marine environment.

### 1.3.4 *Acartia tonsa*

*Acartia tonsa* has a widespread global distribution which includes tropical waters. It has been recorded from the Indian Ocean, off the Malay Archipelago, the Caribbean, and along the Atlantic and Pacific coasts of the North and South America.

Although, it appears *Arcatia tonsa* has not been recorded from Hong Kong waters, other *Arcatia* species have been identified locally.

Based on this information, it is considered there is no reason to suggest that *Arcatia tonsa* is not a suitable test organism for reflecting toxicity effects in the Hong Kong marine environment.

(1) City U (2002) Marine Benthic Studies in Hong Kong. Submitted to AFCD.

Annex 6K

# Information on Jetting

*CONTENTS*

# 1 INSTALLATION OF PIPELINE AND BURIAL USING JETTING

## 1.1 INTRODUCTION

This Annex presents information on the potential installation method for the proposed submarine water main from South Soko Island to Shek Pik. The submarine water main is proposed as part of the construction of a Liquefied Natural Gas (LNG) Terminal on South Soko Island.

The intention of the paper is to provide background information on typical jetting works associated with the follow s:

- Pipelay and pre-test;
- Jetting "spead";
- Deployment and operation of jetting; and
- Post trench rock dumping.

## 1.2 PIPELAY AND PRE-TEST

In sections of the route where burial is proposed using a water jetting technique, the pipeline will first be laid on the seabed using the pipe lay barge. Prior to trenching, the pipeline will be pre-tested to ensure its strength and leak integrity, enabling easier rectification (rarely necessary) of any faults exposed by the test. The pipeline will be left flooded with water to increase its weight and aid its settlement into the trench as the jetting progresses.

## 1.3 JETTING "SPREAD"

The jetting "spread" is typically based on a flat barge that will be towed into position over the pipeline at the start point and then anchored using a 4-anchor pattern. The forward anchors will be deployed some distance ahead of the barge and the stern anchors will be positioned close to the stern of the barge. These distances are variable depending on water depth, current conditions and the presence of any constraints. The contractor will determine these details in the course of its detailed design and will continually verify / update its practices and procedures in response to the results being obtained on site and any unforeseen or changed conditions.

The jetting machine will be chosen by the contractor based on its past experience with site conditions comparable to those existing along the pipeline route. There are many different designs of jet sled that have been developed by a number of general and specialist contractors operating in the pipeline industry. Whilst they all operate using the same principles, each one features several variables including:

- number and positioning of water jets;
- water pressure operating range;
- arrangement of eductor tubes;
- airlift or water venturi eductor tubes;
- depth of "cut" per pass and number of passes required for required depth;
- length of route "blocks"; and
- speed of forward travel.

These variables are adjusted to suit specific site conditions. While Contractors can predict reasonable starting values for the site based on site investigation results, it is probable that adjustments will be required on commencement of work and even in the course of work to obtain optimum trenching performance and / or to ensure that water quality standards are met.

Because designs of jetting machines are proprietary to the various specialist contractors, design details are not given out for fear of copying of designs by competitors. CAPCO consulted several contractors, including Saipem and Leighton, both of which constructed offshore pipelines in Hong Kong within the last two years. The following (limited) details were provided by OES, Leighton's subcontractor for jetting on the Towngas project (an approved EIA), in which a submarine gas pipeline was installed successfully under a comprehensive EM&A programme (1).

**Known:**

Pump pressure: 400 psi

Pump flow rate: 4000 USG $min^{-1}$ => 15,140 L $min^{-1}$

Eductors output: 20,000 L $min^{-1}$ with 1.5 m head @~3.5 psi

**Assumed:**

That all liquefied soils are ejected from the trench.

Trench area: 2 $m^2$ => 1 m deep and 2 m wide per pass

Jetting speed: 0.35 m $min^{-1}$

Trench Volume: 0.7 $m^3$ $min^{-1}$

Eductor discharge Soil / water %: 10 %=> 2 $m^3$ $min^{-1}$ soil

**Output to environment:**

(1) The project refers to the submarine gas pipelines from Cheng Tou Jiao Liquefied Natural Gas Receiving Terminal, Shenzhen to Tai Po Gas Production Plant, Hong Kong.

Pump pressure: 400 psi

Pump flow rate: 4000 USG $min^{-1}$ => 15,140 L $min^{-1}$

Eductors output: 20,000 L $min^{-1}$

Water output: 36,000 L $min^{-1}$

Eductor discharge height above seabed: 2 m

Volume of soil in water column: 0.7 $m^3$ $min^{-1}$

Potential volume @ 10% soil in water column: 2 $m^3$ $min^{-1}$

It is found that the monitoring results of jetting operations were comparable to the model results predicted for the EIA for the Towngas project. The LNG project used the similar approach to the Towngas project in the modelling and hence it is expected that the assumptions in the water quality assessment and model would be realistic.

From previous experience in HKSAR the soils were dispersed in a 70 m radius with 80% of the material falling from the water column. By the 150 m radius the SS concentrations were consistently below the EPD requirements, even when there was a 1.5 m $s^{-1}$ current effecting greater dispersion.

## 1.4 *DEPLOYMENT AND OPERATION OF JETTING SPREAD (INCLUDING ANCHORING)*

The jetting spread will be deployed at the start location of the section to be jetted and the support barge will be pulled forward on its forward anchors, towing the jet sled behind. The position of the barge will be controlled by maintaining tension on the stern anchors as the forward anchor cables are winched in. The progress of this activity is similar to that of pipe laying, with the exception that there is no need to pause at each pipe joint. The barge can be moved ahead continuously, with anchor handling tugs working to recover and relocate bow and stern anchors (duplicate sets of anchors are used) as the limits of anchor cable movement are reached. The contractor may elect to perform jetting over limited "block" lengths of the route, completing a number of passes to achieve the required depth in one area before moving to the next. Alternatively, it is possible that for the site conditions on this project, completing each pass over the entire section will produce better overall results.

## 1.5 *POST TRENCH ROCK DUMPING*

The pipeline protection design concept for this project identifies the need to protect the pipeline from third party contact, particularly dropped and dragged anchors. Where jetting is used for trenching, there are some areas where it was assessed that natural backfill may be either insufficient or might not occur sufficiently rapidly after construction, to provide the necessary protection. Accordingly, supplementary protection may be provided by partially backfilling the jetted trench with a layer of rock, nominally 1m over the top of the pipe. The requirement for all subsea constructions in Hong Kong waters to be finished level with the surrounding seabed is noted and this requirement will be specified and noted on the drawings in the design of the pipeline.

This design has been assessed as suitable to protect the pipeline from small vessel activity. In areas where larger vessels (and therefore larger anchors) are expected, a completely different design will be utilized, incorporating a pre-dredged trench and a larger rock mound protecting the pipeline. In such cases, the design requirement to finish the construction level with the surrounding seabed will be maintained.

## 1.6 *HKLNG PROJECT CONSTRUCTION APPROACH*

The pipeline construction will be contracted to an experienced, reputable offshore pipeline contractor on the basis of a detailed construction specification. Included in the specification will be the requirement to follow the environmental management plan developed for the project and, particularly, an obligation to meet the defined water quality standards (and other standards) mandated by the relevant HKSARG departments. Also included will be a requirement for the contractor to utilize proven equipment and work methods.

## 1.7 WATER QUALITY CONTROL

Water quality modelling was performed as part of the EIA to enable a selection of acceptable technologies in terms of meeting water quality standards and to provide guidance on developing environmental management plans and mitigation methods. Ultimately, it will be the responsibility of CAPCO and its Contractor/s to monitor the work closely and adjust the work procedures as required to ensure that water quality standards are met to the satisfaction of EPD and other relevant authorities.

A series of images show the variations in design of jetting equipment.

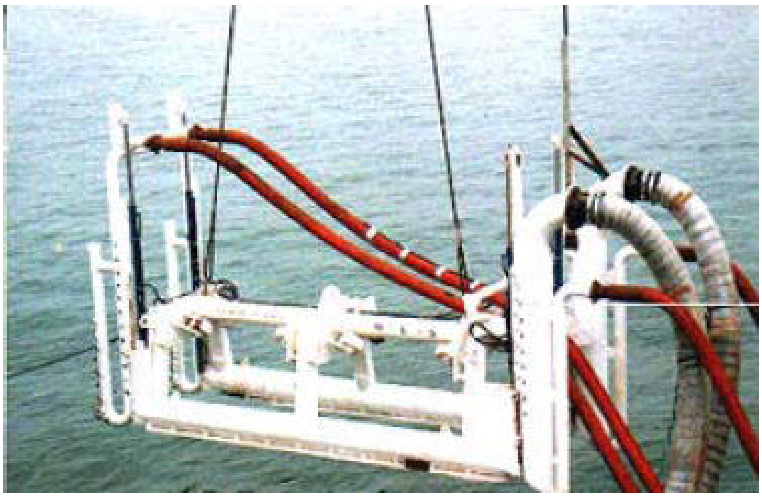


***Figure 1.1 "Arabian Leopard" 12 – 30 inch pipeline Jet Sled (OES Equipment)***

***Figure 1.2 "Bengal Tiger" 30 – 60 inch pipeline Jet Sled (OES Equipment)***

***Figure 1.3 "Sumatran Tiger" 20 to 42 inch pipeline Jet Sled (OES Equipment)***

***Figure 1.4 "Canyon Horizon" Pipe Jetting Barge(Horizon Offshore equipment)***

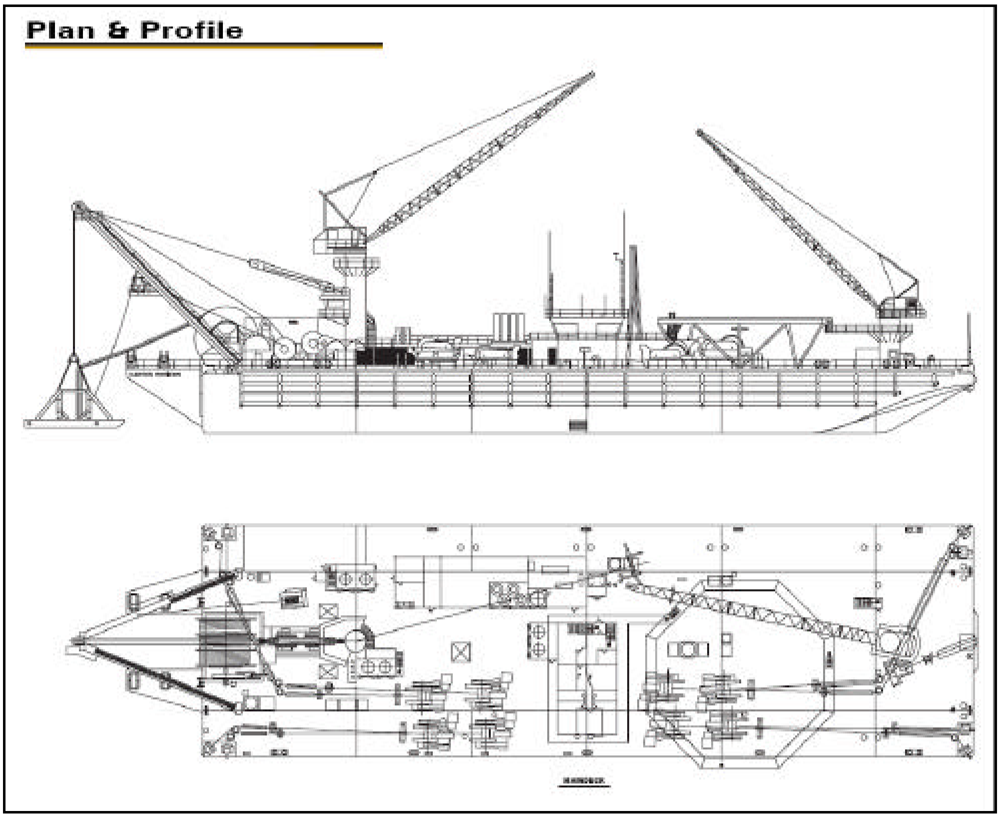



*Figure 1.5 "Canyon Horizon" Pipe Jetting Barge (Horizon Offshore equipment)*

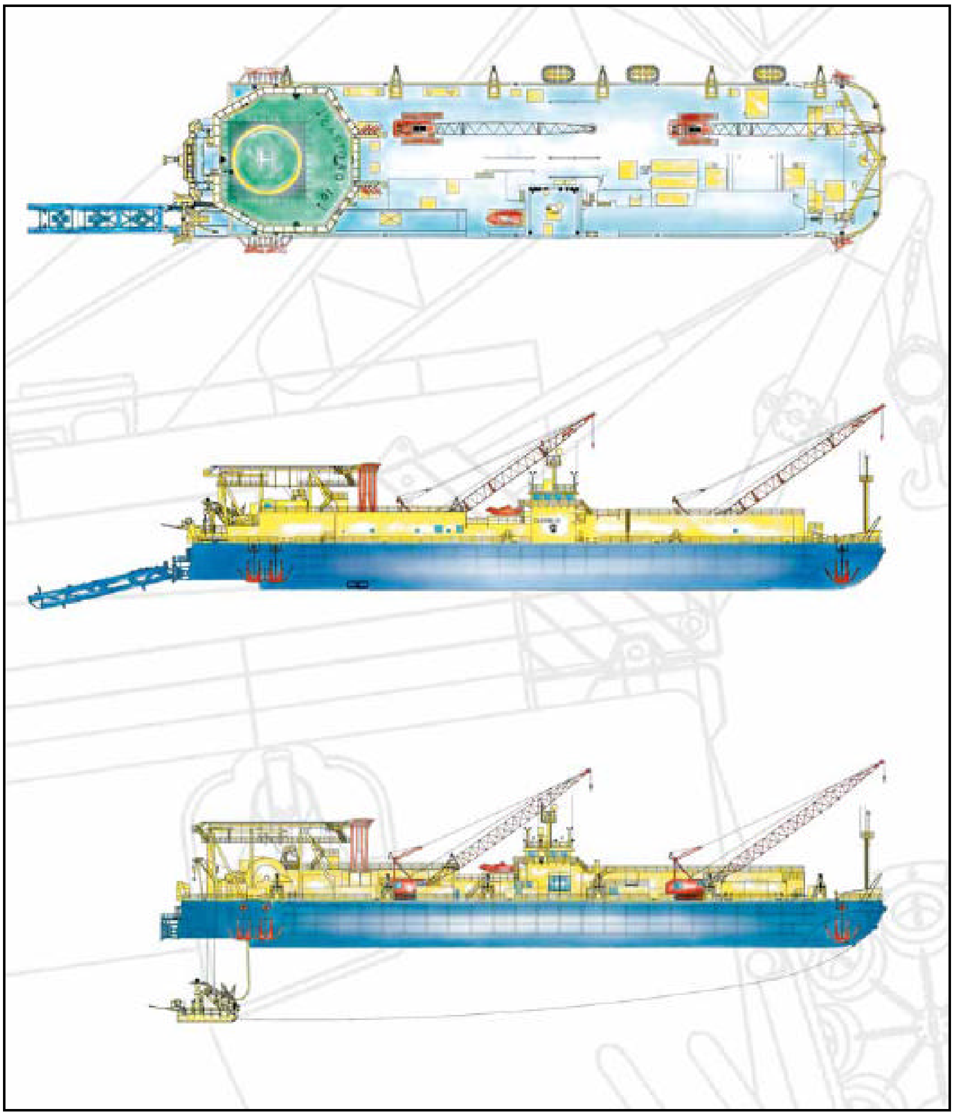


***Figure 1.6 “Castoro 10” Pipelay and trenching barge (Saipem Equipment)***

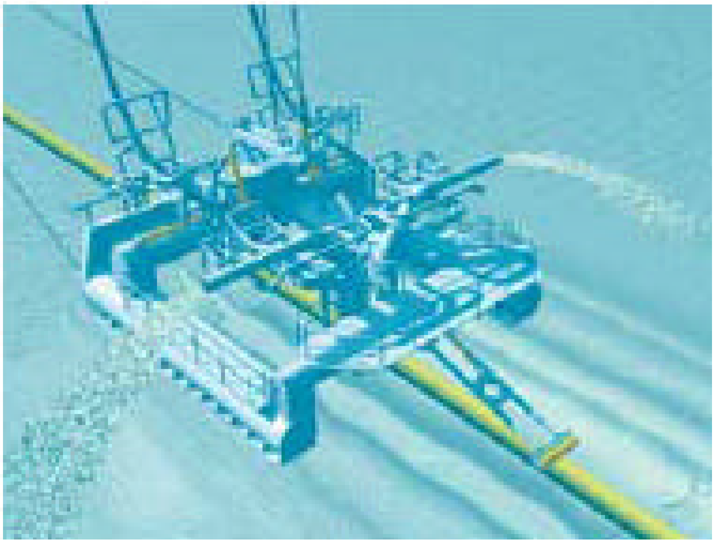


***Figure 1.7 "DJS 1" Diverless Jet Sled for up to 60 inch pipelines (Saipem Equipment)***

Annex 6L

# Effectiveness of Silt Curtain

***Table 1*** ***Effectiveness of Silt Curtain***

| **Approved EIA (No./Year Project Title)** | **Discussion on Effectiveness of Silt Curtain** | **Proposed Location of Silt Curtain** |
|---|---|---|
| EIA 058/2001<br>Wan Chai Development Phase II – Comprehensive Feasibility Study | *Section 5.8.5*<br>According to the *Contaminated Spoil Management Study* [Mott MacDonald (1991). Contaminated Spoil Management Study, Final Report, Volume 1, for EPD, October 1991.], the implementation of silt curtain around the closed grab dredgers will reduce the dispersion of SS by a factor of 4 (or about 75%). Thus, silt curtains will be recommended for seawall dredging and seawall trench filling near the existing coastline where current speeds are less than 0.5 m $s^{-1}$ (Figures 5A-3 and 5A-5 in Appendix 5.7). Similarly, the implementation of silt screen at the intake could reduce the SS level by a factor of 2.5 (or about 60%). This SS reduction factor has been established under the *Pak Shek Kok Reclamation, Public Dump EIA (1997)* and has been adopted in a number of recent studies, including the Western Coast Road EIA study. | *Silt Curtains* (Silt curtains should be made from impervious material such as coated nylon and primarily redirect flow around the dredging area rather than blocking the entire water column.) Construction sites where dredging and seawall trench sand filling are undertaken, including CBR1, WCR1, WCR3E, Wan Chai PCWA, Breakwater of Kellett Island Marina and FRAE of CRIII.<br>*Silt Screens* (Silt screens are made from synthetic geotextile fabrics, which allow water to flow through but retain a fraction of the suspended solids.) WSD salt water intakes at Wan Chai, Central Water Front, Sheung Wan, Quarry Bay, Sai Wan Ho and Siu Sai Wan. Cooling water intakes for Windsor House, Excelsior Hotel and World Trade Centre, Sun Hung Kai Centre, Great Eagle Centre / China Resources Building, Wan Chai Tower / Revenue Tower / Immigration Tower, HKCEC Phase I, HKCEC Extension, Telecom House / Hong Kong Academy for Performing Arts / Shun On Centre, MTRC South Intake, Prince's |

| Approved EIA (No./Year Project Title) | Discussion on Effectiveness of Silt Curtain | Proposed Location of Silt Curtain |
|---|---|---|
| | | Building Group at CRIII, Queensway Government Offices at CRIII, Admiralty Centre at CRIII, HSBC and Hotel Furama at CRIII. |
| EIA 069/2001<br>Yau Tong Bay Development Reclamation of Yau Tong Bay | *Section 4.7.17*<br>The mitigation measure proposed for the stormwater box culvert and the seawall construction in YTB include:<br>• Close grab with silt curtain will be used for the dredging and filling operations, which gives a SS loss reduction factor of 5 times lower that using an open grab alone (*Figure 4.79*);<br>• A single layer of silt screen will also be placed at the saltwater intakes of the WSRs giving a SS reduction of 2.5 times at the WSRs | *Figure 4.80*<br>Yau Tong Bay<br>Silt curtain will be deployed at the seawall opening before bottom dumping is performed. |
| EIA 081/2002<br>Construction of Lung Kwu Chau Jetty | *Section 3.51*<br>With the implementation of two silt curtains and a lowering of the dredging rate to 250 $m^3$/day, a spill release rate of 0.026 kg/s is expected (assuming 11-hour working day as was assumed for the calculation of spill release rate for the unmitigated and mitigated cases given in Section 6.3 of Appendix 3.1). The implementation of two silt curtains around the closed grab dredger would reduce the release of sediment by at least 80% (a reduction factor of greater than 80% has been demonstrated for the Yam O Reclamation project). | *Figure 3.3*<br>A silt curtain will be around the grab dredger. A silt curtain will be around the project site (on the eastern side of Lung Kwu Chau).<br>The peak current around the project site is round 0.5 m/s. |

| Approved EIA (No./Year Project Title) | Discussion on Effectiveness of Silt Curtain | Proposed Location of Silt Curtain |
|---|---|---|
| EIA 088/2002 Lamma Power Station Navigation Channel Improvement | *Section 2.8.14* For grab dredgers, cage-type silt curtains as illustrated in Figure 2.3 will be deployed surrounding the grab and dredging will only take place within the water enclosed by the silt curtains which are mounted to the dredging barge. The silt curtains can move along with the dredging barge. According to HEC's measurements for the dredging practice in the area, the reduction rate in SS concentration of the silt curtains is typically between 76% and 81%. For the purpose of this assessment, a reduction rate of 75% is adopted. | Dredging area to the east of the Lamma Island The tidal currents in the Channel with a peak speed of slightly over 0.5 m/s, are predominantly from the southeast to the northwest at the flood tide and in the opposite direction during the ebb tide, i.e. from the northwest towards the southeast. |
| EIA 109/2005 Road P1 Advance Works at Yam O on Lantau Island | *Section 5.39* Dredging would be undertaken using two closed grab dredgers, with a maximum total production rate of 8,000 $m^3$/day (assuming 24–hour working per day). A sediment loss rate from dredging operations of 17 kg/$m^3$ was adopted in the NLDFS-EIA Study and has therefore been taken for this Project since the study area is the same. Based on the proposed daily rate of dredging for the Project, the loss rate was calculated to be 1.57 kg/s. To minimize the water quality impact during dredging operations, a silt curtain system would be provided at the reclamation site. Dredging operations would be undertaken within a frame-type silt curtain. The implementation of frame type silt curtains to fully enclose the grab dredgers would reduce the release of sediment by at least 80%. The | Sunny Bay in North Lantau |

| Approved EIA (No./Year Project Title) | Discussion on Effectiveness of Silt Curtain | Proposed Location of Silt Curtain |
|---|---|---|
| | mitigation efficiency of greater than 80% for suspended solids removal has been demonstrated in the silt curtain pilot tests for the Sunny Bay Reclamation under CED Contract No. CV/2000/09. The silt curtain system comprised two independent silt curtains. The results of statistical analysis of measurement data taken within the frame type silt curtain and before the second floating type silt curtain gave suspended solids removal efficiencies in the range of 88 – 97% at different depths and tidal conditions. A pilot test would be conducted to verify the suspended solids removal efficiency of the frame type silt curtain before the start of dredging works for the Project. With the adoption of this recommended mitigation measure for the construction phase dredging, the mitigated loss rate was calculated to be 0.31 kg/s. To provide additional protection from sediment loss to outside the Sunny Bay area and to any seagrass bed that may be present to the west of reclamation area, an additional layer of silt curtain would be provided at the eastern and western ends of the reclamation. The arrangement of this silt curtain should be carefully arranged such that it does not affect the normal operation of the log ponds. | |