西条 - オキシダント予測の分析

Model Parameters:
Prefecture code: 38
Station code: 38206050
Station name: 西条
Target item: Ox(ppm)
Number of data points in the train set: 13381
Number of data points in the test set: 2868
Forecast horizon (hours): 24
Model: GRU
Number of epochs: 300
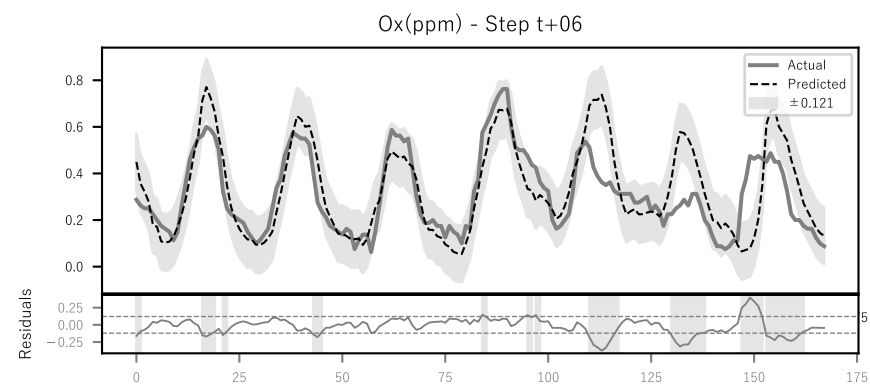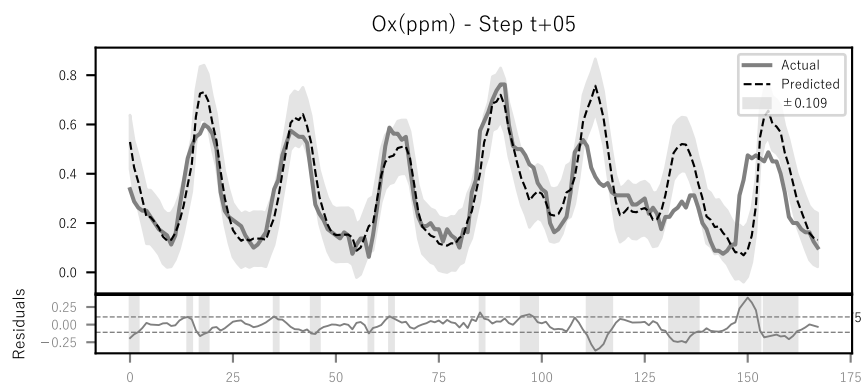Elapsed time: 4 min 30 sec
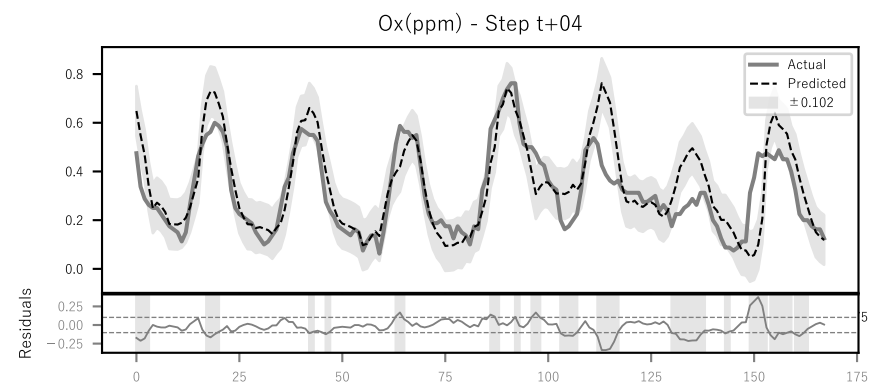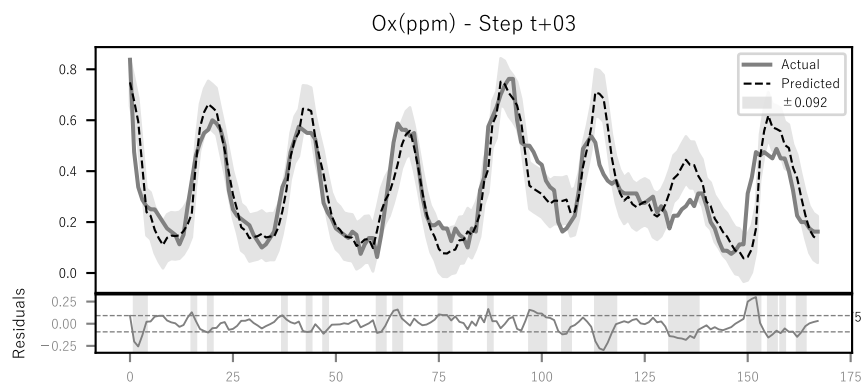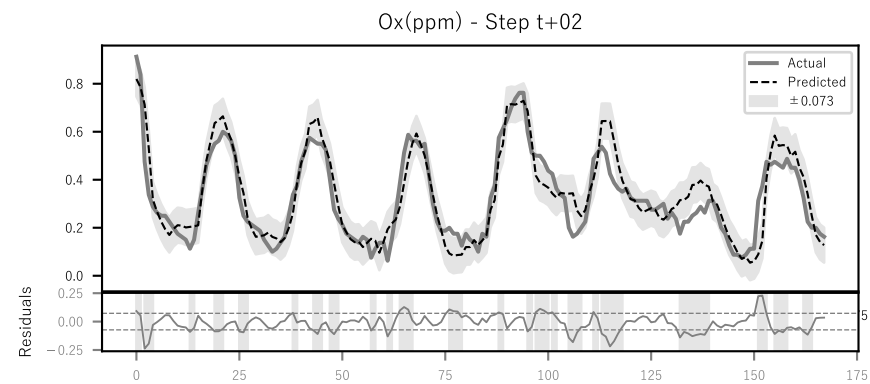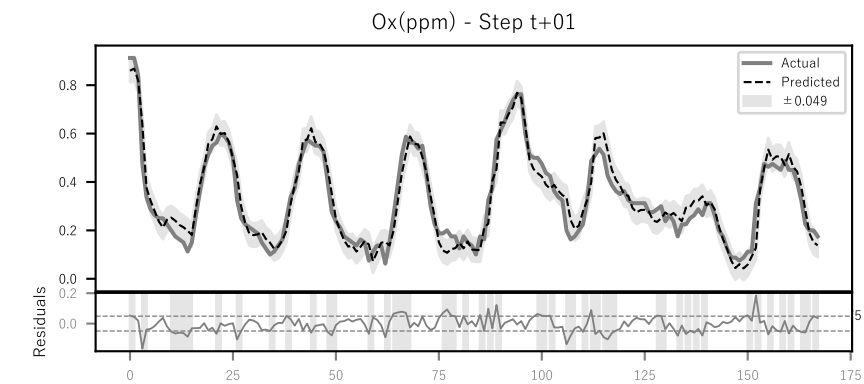Number of used features: 37

Features:
  Ox(ppm), Ox(ppm)_lag1, Ox(ppm)_lag2, Ox(ppm)_lag3, NO(ppm)_lag1
  NO(ppm)_lag2, NO(ppm)_lag3, NO2(ppm)_lag1, NO2(ppm)_lag2, NO2(ppm)_lag3
  U_lag1, U_lag2, U_lag3, V_lag1, V_lag2
  V_lag3, Ox(ppm)_roll_mean_3, Ox(ppm)_roll_std_6, NO(ppm)_roll_mean_3, NO(ppm)_roll_std_6
  NO2(ppm)_roll_mean_3, NO2(ppm)_roll_std_6, U_roll_mean_3, U_roll_std_6, V_roll_mean_3
  V_roll_std_6, Ox(ppm)_diff_1, Ox(ppm)_diff_2, Ox(ppm)_diff_3, NO(ppm)_diff_3
  NO2(ppm)_diff_3, U_diff_3, V_diff_3, hour_sin, hour_cos
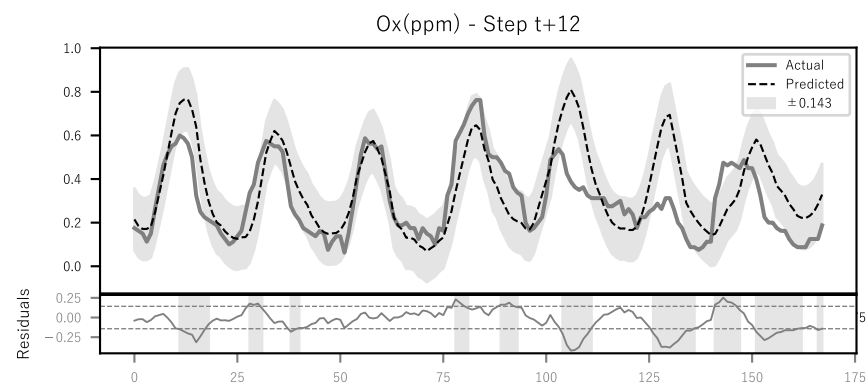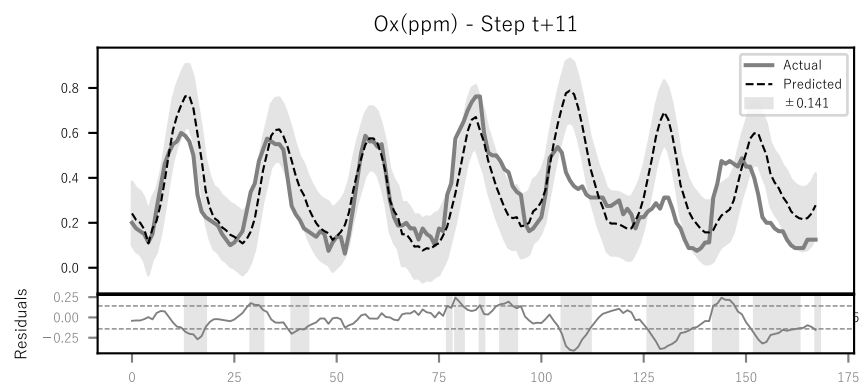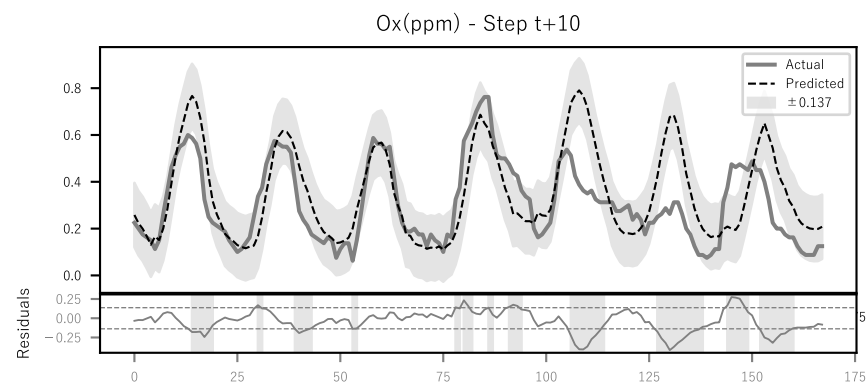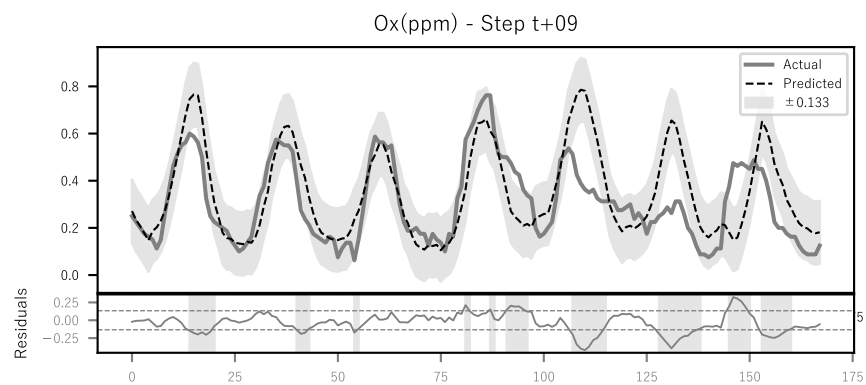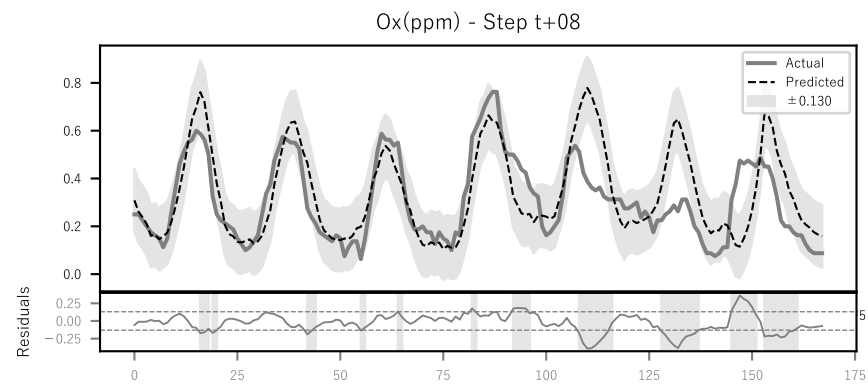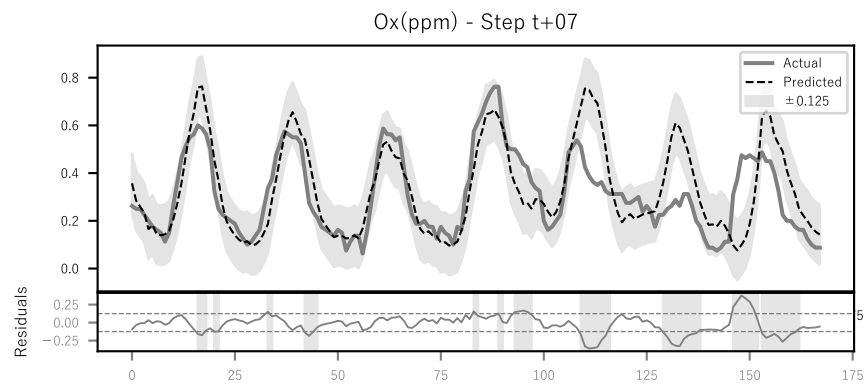 dayofweek, is_weekend

Metrics per Forecast Step:
t+01 - R²: 0.8727, MAE: 0.0418, RMSE: 0.0544
t+02 - R²: 0.7393, MAE: 0.0600, RMSE: 0.0776
t+03 - R²: 0.6116, MAE: 0.0738, RMSE: 0.0945
t+04 - R²: 0.5026, MAE: 0.0829, RMSE: 0.1068
t+05 - R²: 0.4124, MAE: 0.0900, RMSE: 0.1161
t+06 - R²: 0.2760, MAE: 0.1012, RMSE: 0.1289
t+07 - R²: 0.2456, MAE: 0.1027, RMSE: 0.1316
t+08 - R²: 0.2155, MAE: 0.1046, RMSE: 0.1342
t+09 - R²: 0.1842, MAE: 0.1067, RMSE: 0.1368
t+10 - R²: 0.1301, MAE: 0.1102, RMSE: 0.1413
t+11 - R²: 0.0977, MAE: 0.1116, RMSE: 0.1439
t+12 - R²: 0.0923, MAE: 0.1122, RMSE: 0.1443
t+13 - R²: 0.0676, MAE: 0.1138, RMSE: 0.1462
t+14 - R²: 0.0931, MAE: 0.1121, RMSE: 0.1442
t+15 - R²: 0.0747, MAE: 0.1139, RMSE: 0.1456
t+16 - R²: 0.0474, MAE: 0.1159, RMSE: 0.1477
t+17 - R²: 0.0533, MAE: 0.1153, RMSE: 0.1472
t+18 - R²: 0.0208, MAE: 0.1184, RMSE: 0.1497
t+19 - R²: 0.0884, MAE: 0.1128, RMSE: 0.1445
t+20 - R²: 0.0929, MAE: 0.1123, RMSE: 0.1441
t+21 - R²: 0.0873, MAE: 0.1133, RMSE: 0.1446
t+22 - R²: 0.1058, MAE: 0.1120, RMSE: 0.1431
t+23 - R²: 0.1432, MAE: 0.1089, RMSE: 0.1400
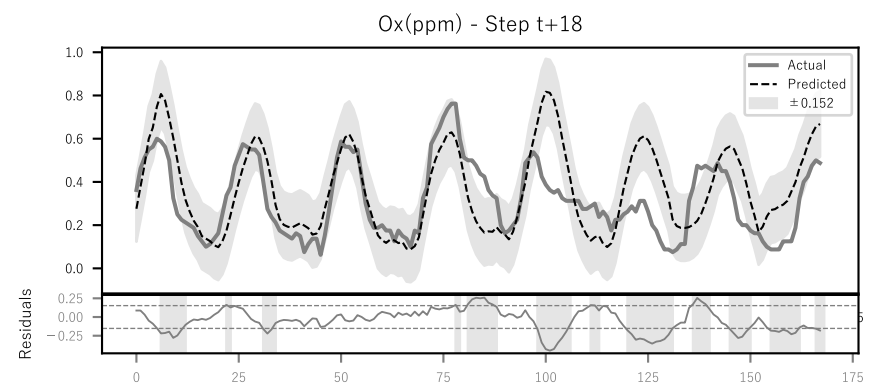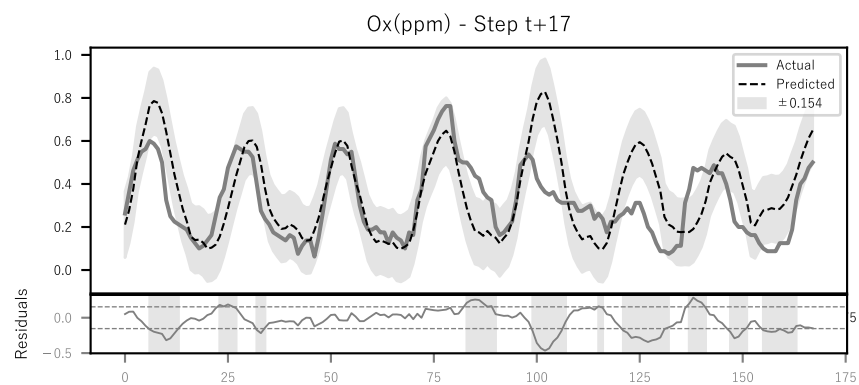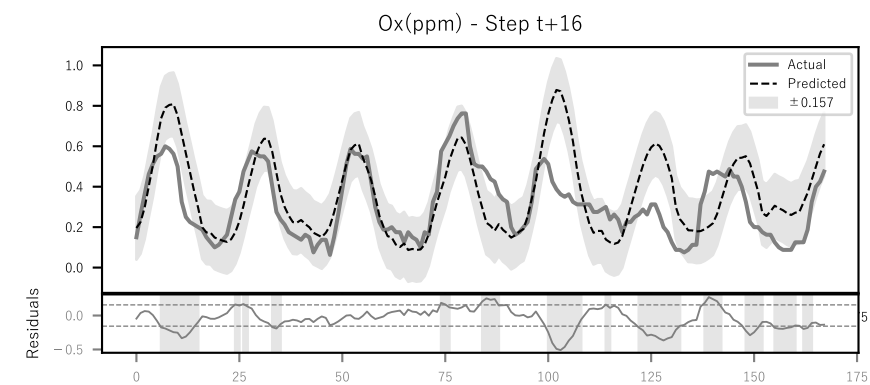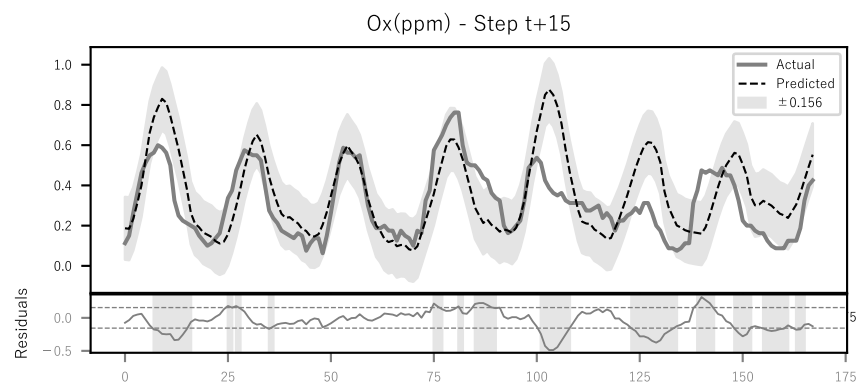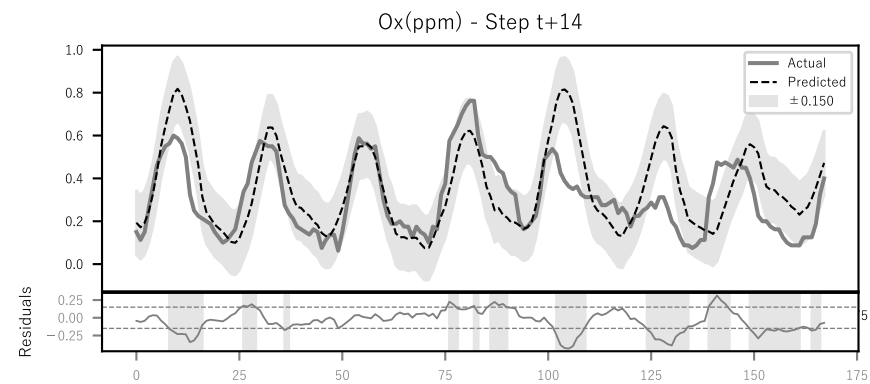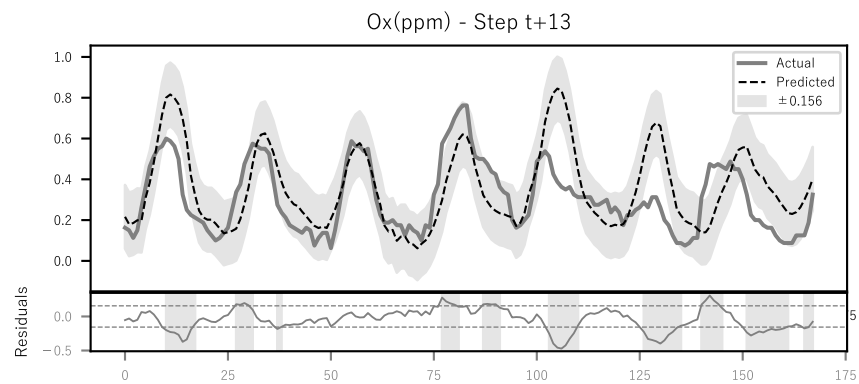t+24 - R²: 0.1246, MAE: 0.1101, RMSE: 0.1415

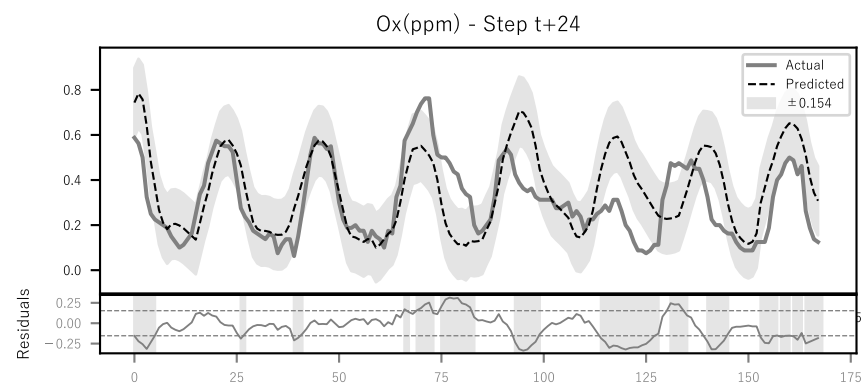# Comparison between actual and predicted values
with ± Standard Deviation Bands

Ox(ppm) - Step t+01

Ox(ppm) - Step t+02

Ox(ppm) - Step t+03

Ox(ppm) - Step t+04

Ox(ppm) - Step t+05

Ox(ppm) - Step t+06

Comparison between actual and predicted values
with ± Standard Deviation Bands

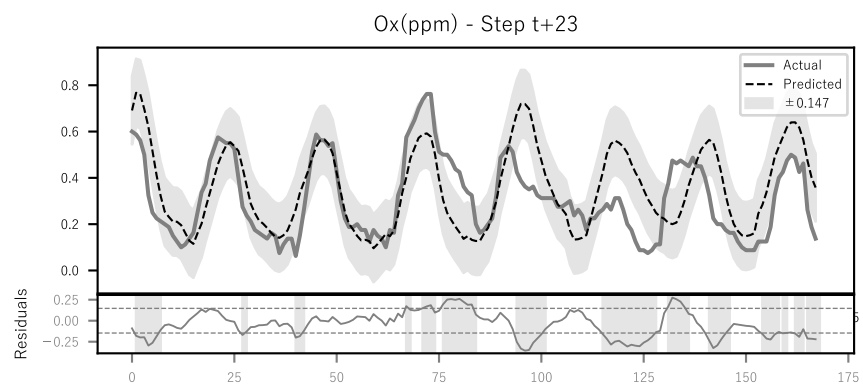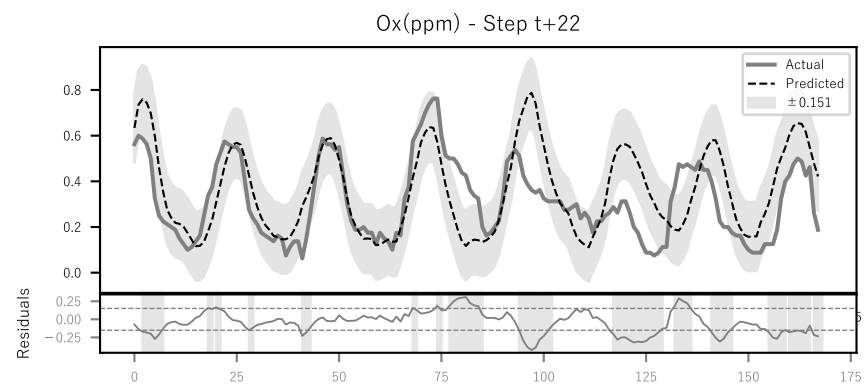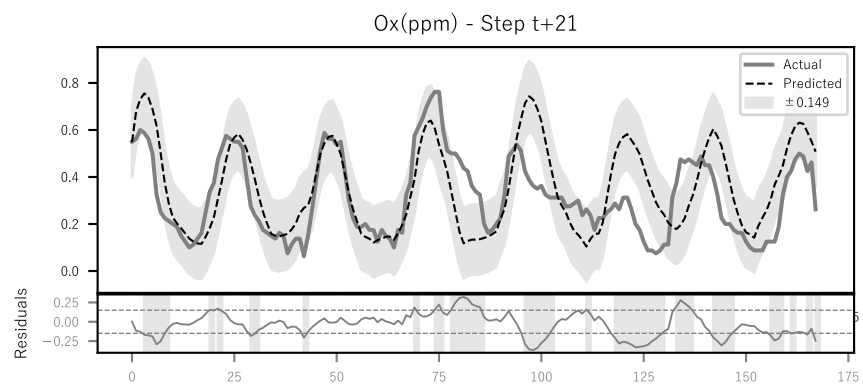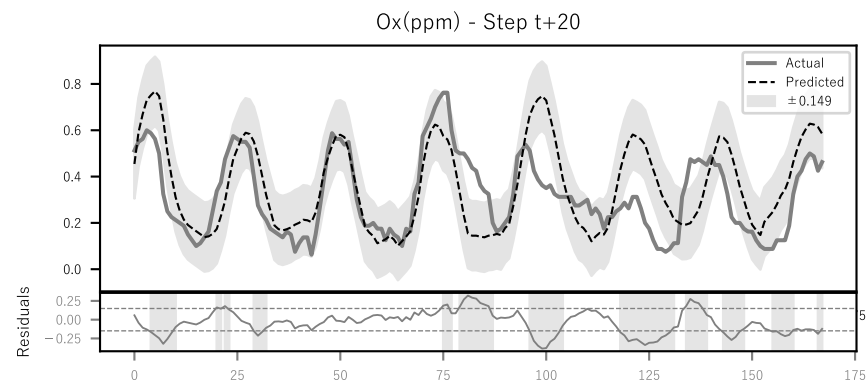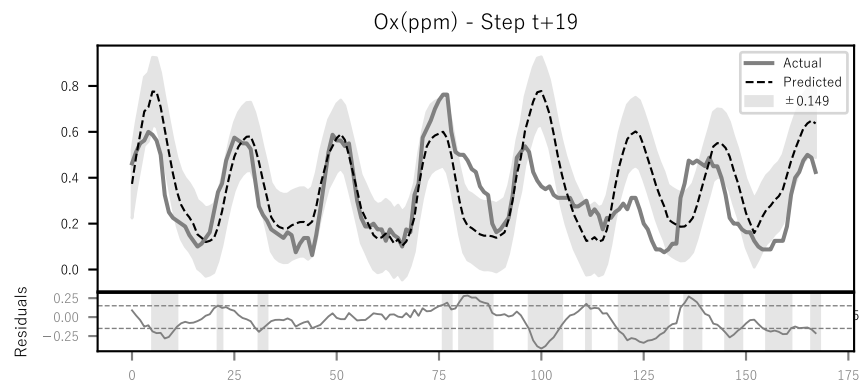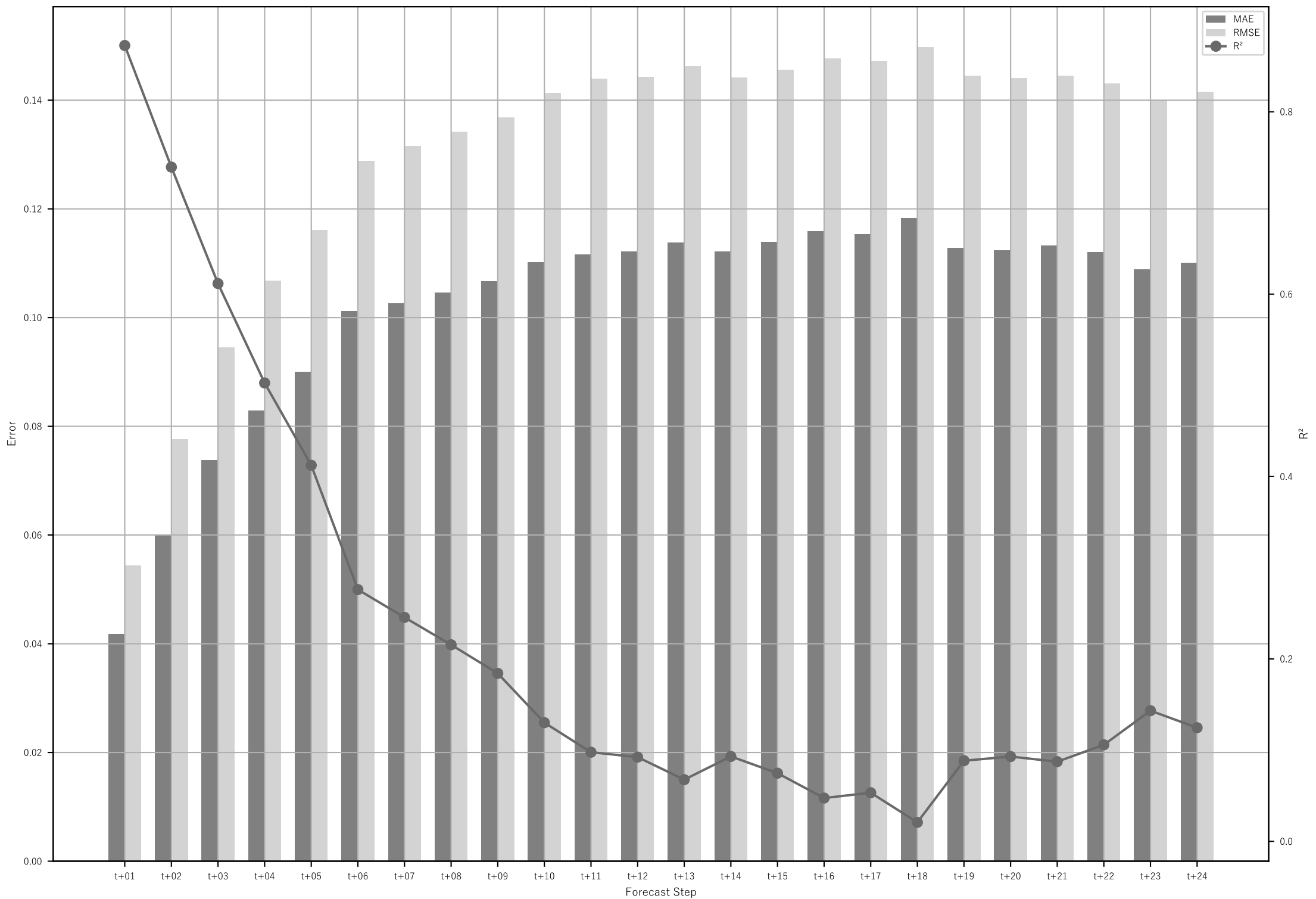Comparison between actual and predicted values
with ± Standard Deviation Bands

Ox(ppm) - Step t+13

Ox(ppm) - Step t+14

Ox(ppm) - Step t+15

Ox(ppm) - Step t+16

Ox(ppm) - Step t+17

Ox(ppm) - Step t+18

Comparison between actual and predicted values
with ± Standard Deviation Bands

MAE, RMSE, and R² for each Forecast Step

Training and Validation Loss