



2019 Pickering Nuclear Groundwater Monitoring Program Results

CAC Update | October 20, 2020

Raphael McCalla | Director, Environment Nuclear

ONTARIO**POWER**
GENERATION

Annual Program Objectives

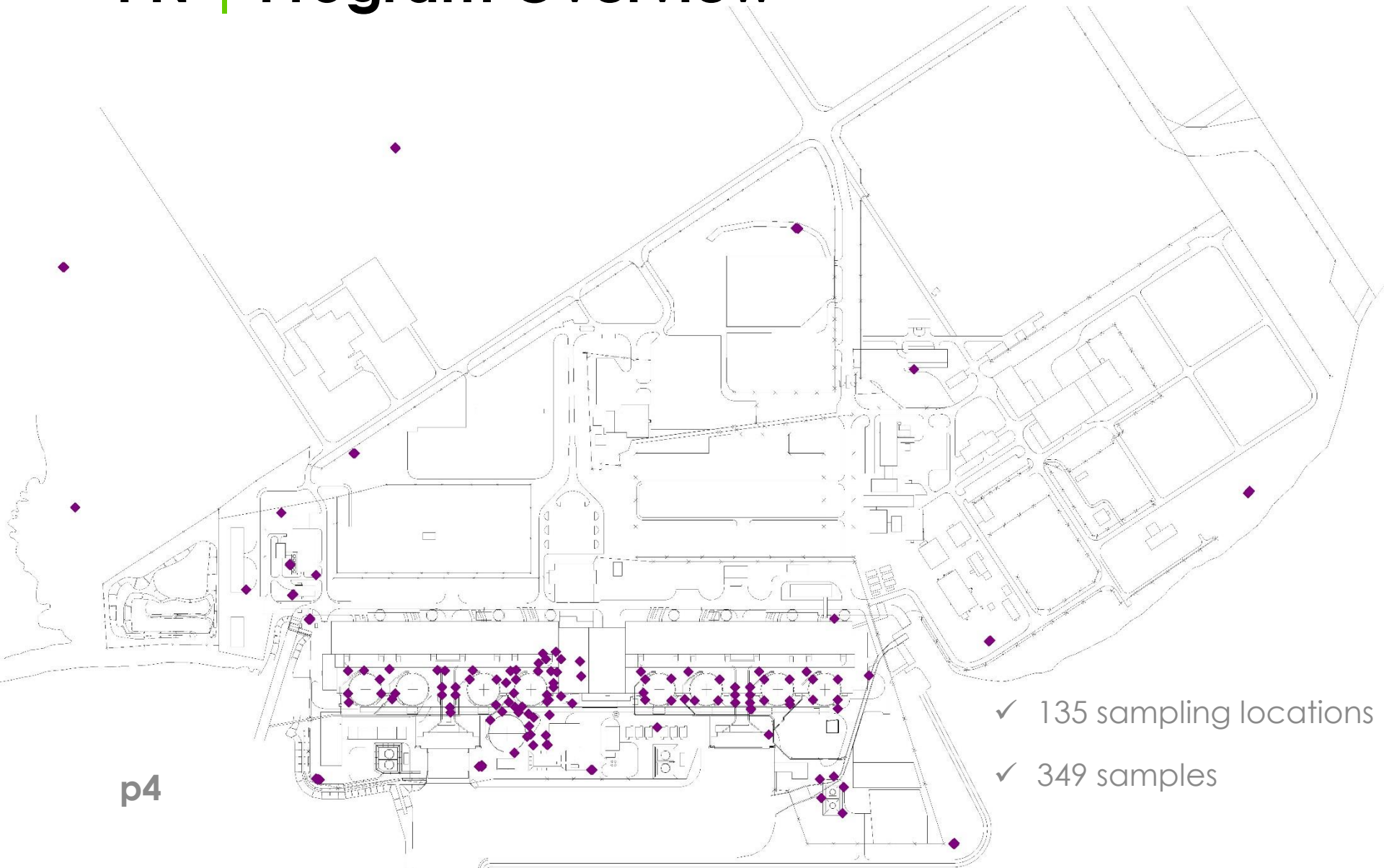
- Verify groundwater flow direction
- Monitor changes to on-site groundwater quality to identify new issues in a timely manner and assess historical issues
- Monitor groundwater quality at the site boundary to confirm there are no adverse off-site impacts



Pickering Nuclear (PN)



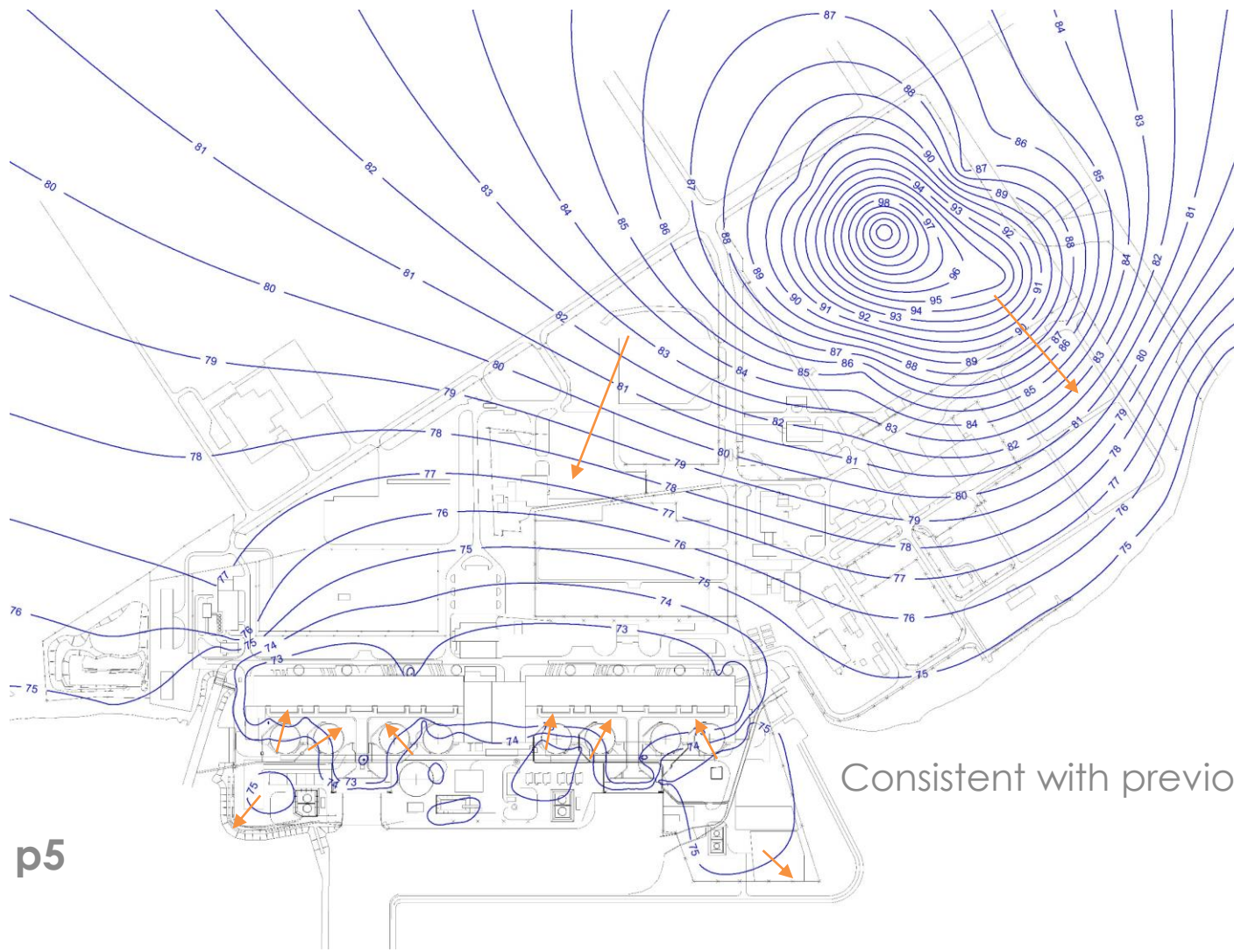
PN | Program Overview



✓ 135 sampling locations

✓ 349 samples

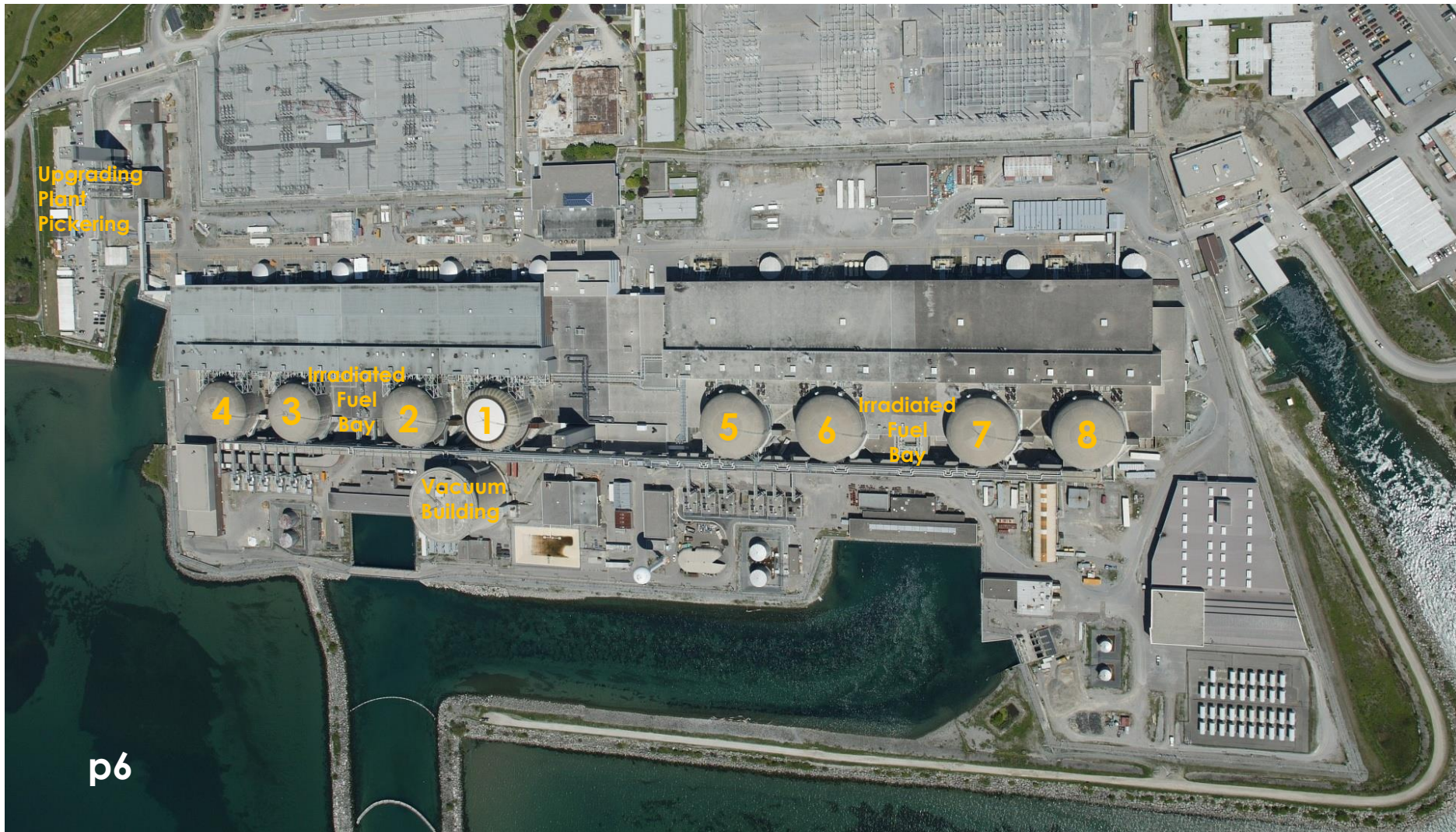
PN | Groundwater Flow Direction



Consistent with previous interpretations

PN | Groundwater Quality

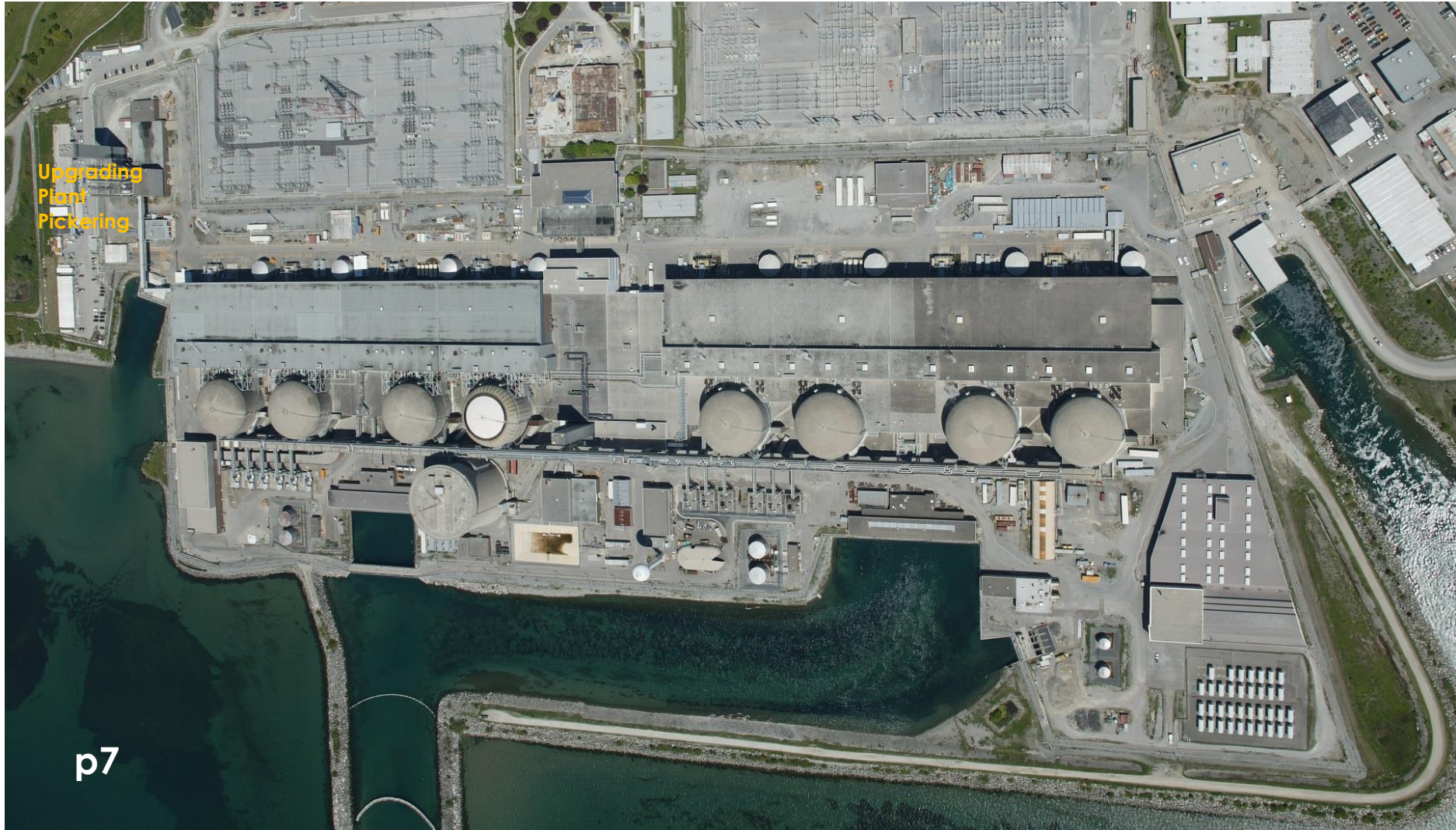
Key Areas Monitored



PN | Groundwater Quality

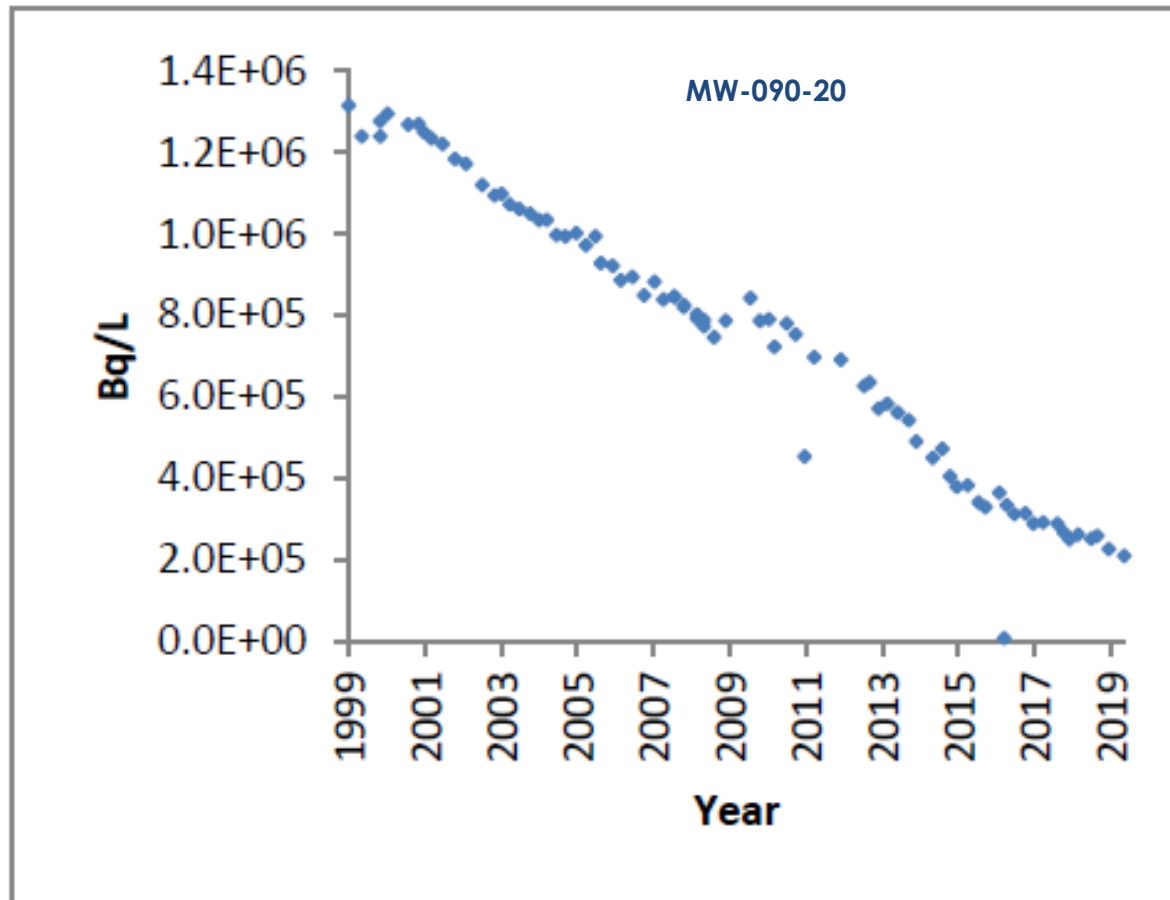
Upgrading Plant Pickering Area

Upgrading
Plant
Pickering



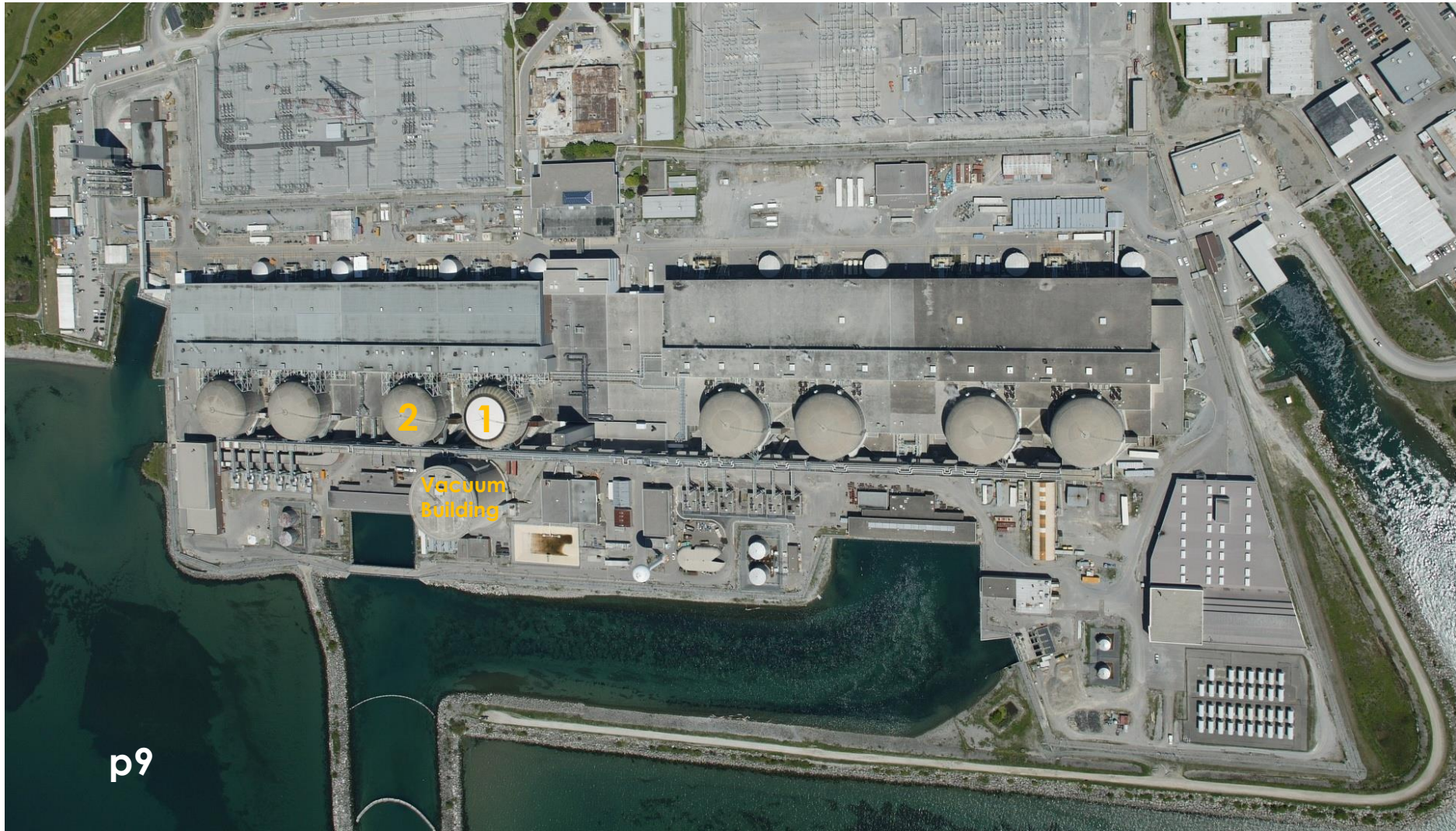
PN | Groundwater Quality

Upgrading Plant Pickering Area



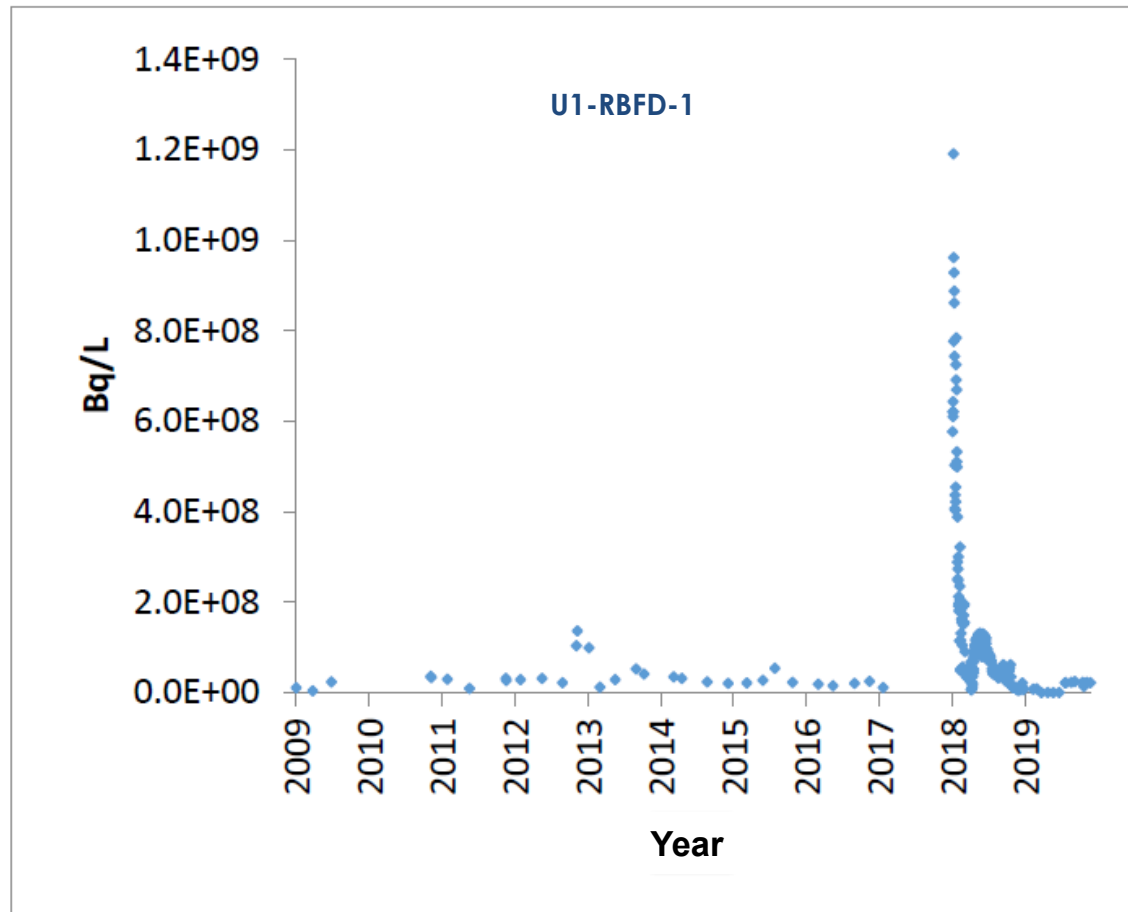
PN | Groundwater Quality

Unit 1, Unit 2, and Vacuum Building Areas



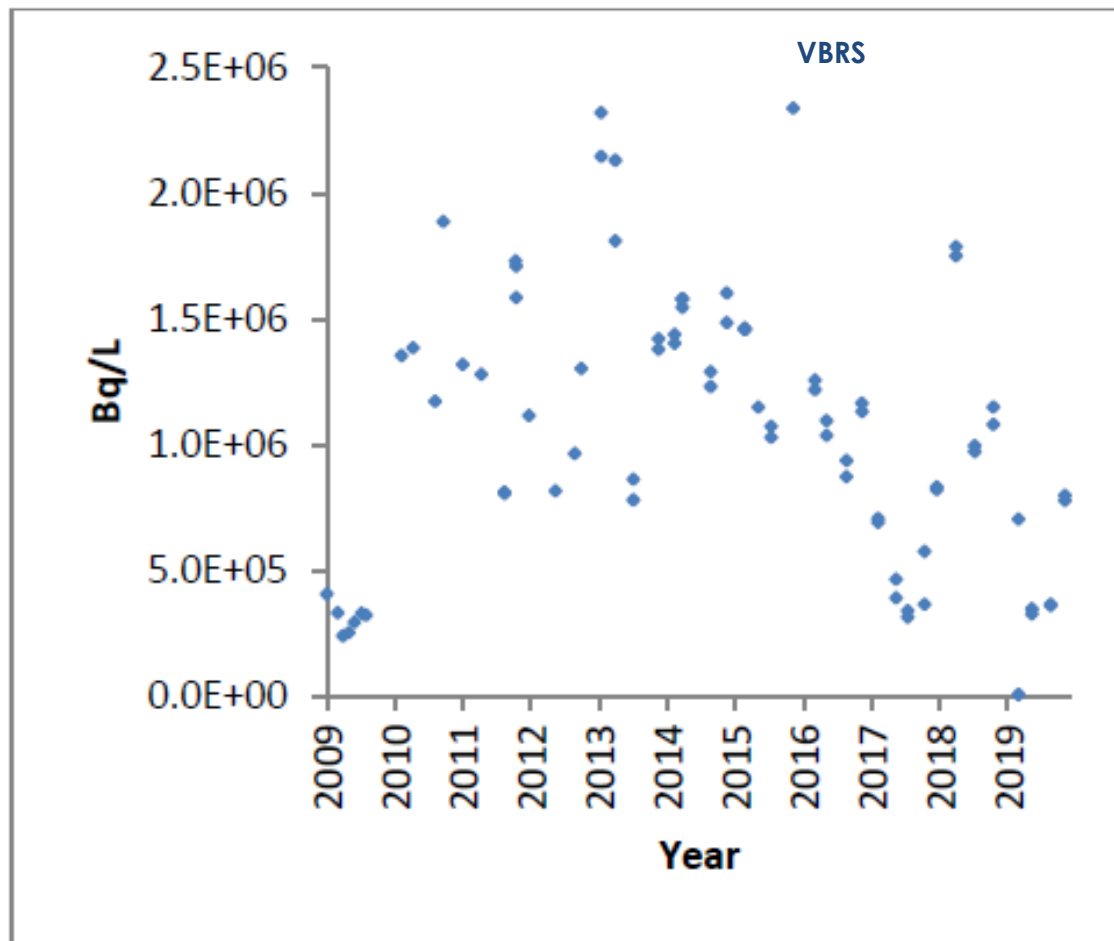
PN | Groundwater Quality

Unit 1, Unit 2, and Vacuum Building Areas



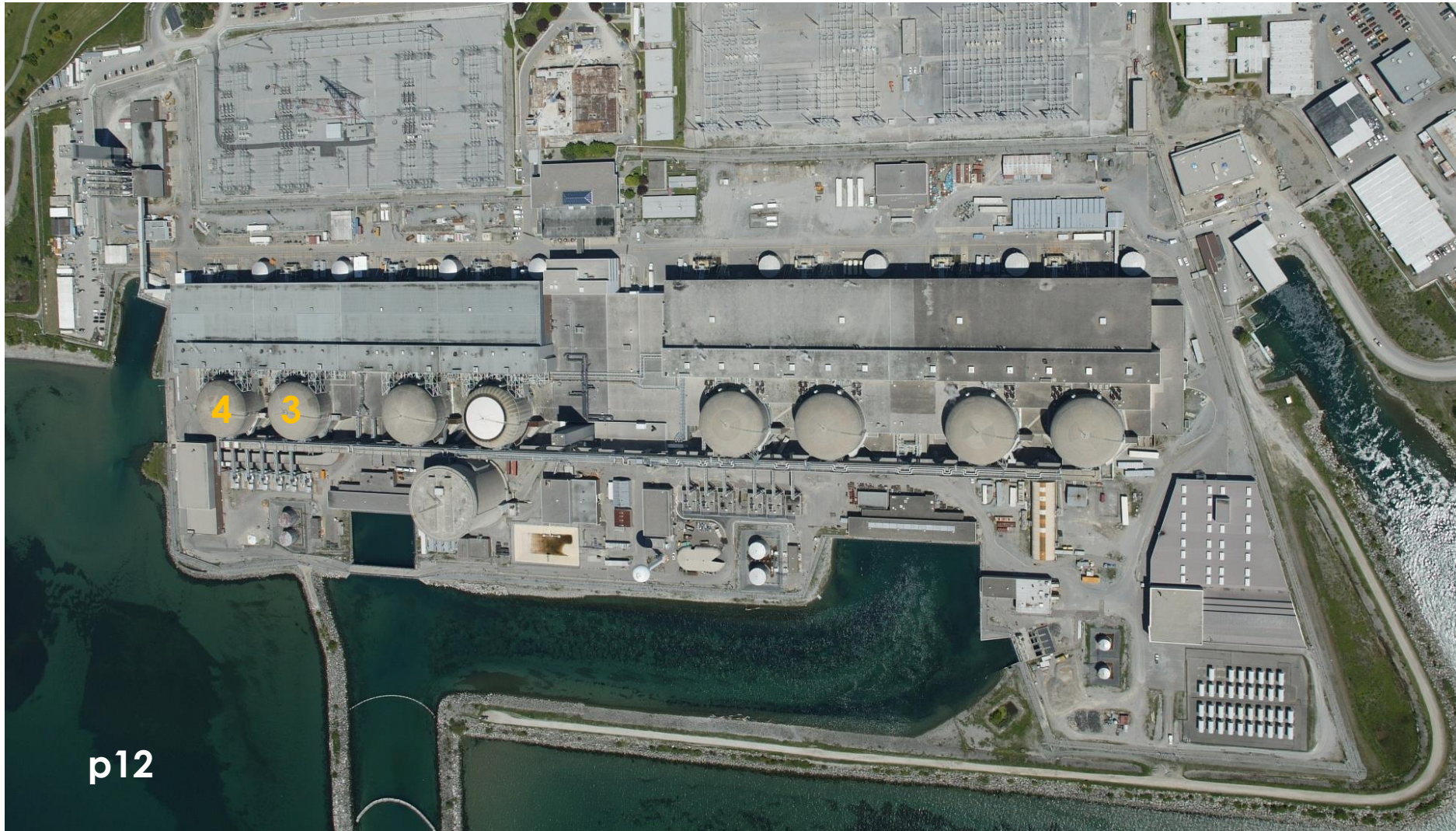
PN | Groundwater Quality

Unit 1, Unit 2, and Vacuum Building Areas



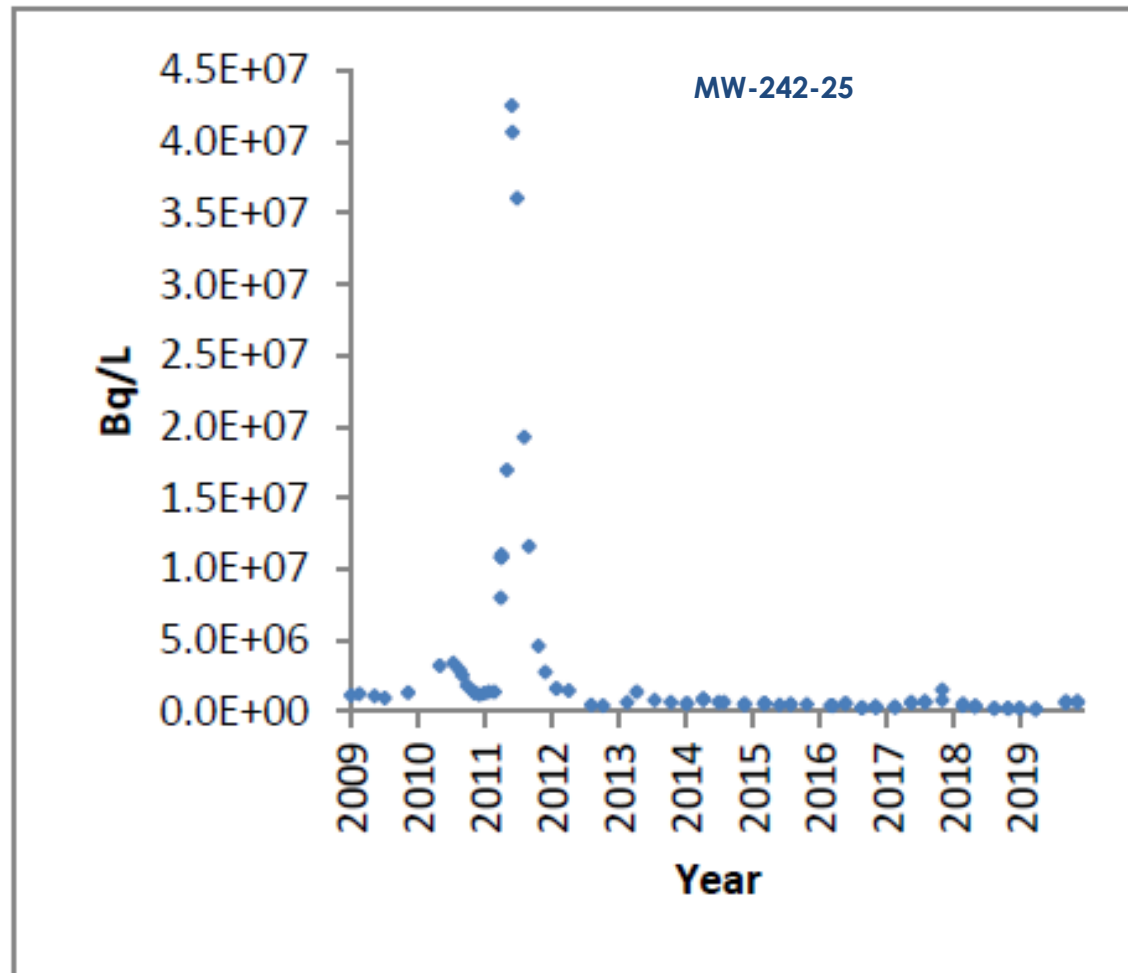
PN | Groundwater Quality

Unit 3 and Unit 4 Areas



PN | Groundwater Quality

Unit 3 and Unit 4 Areas



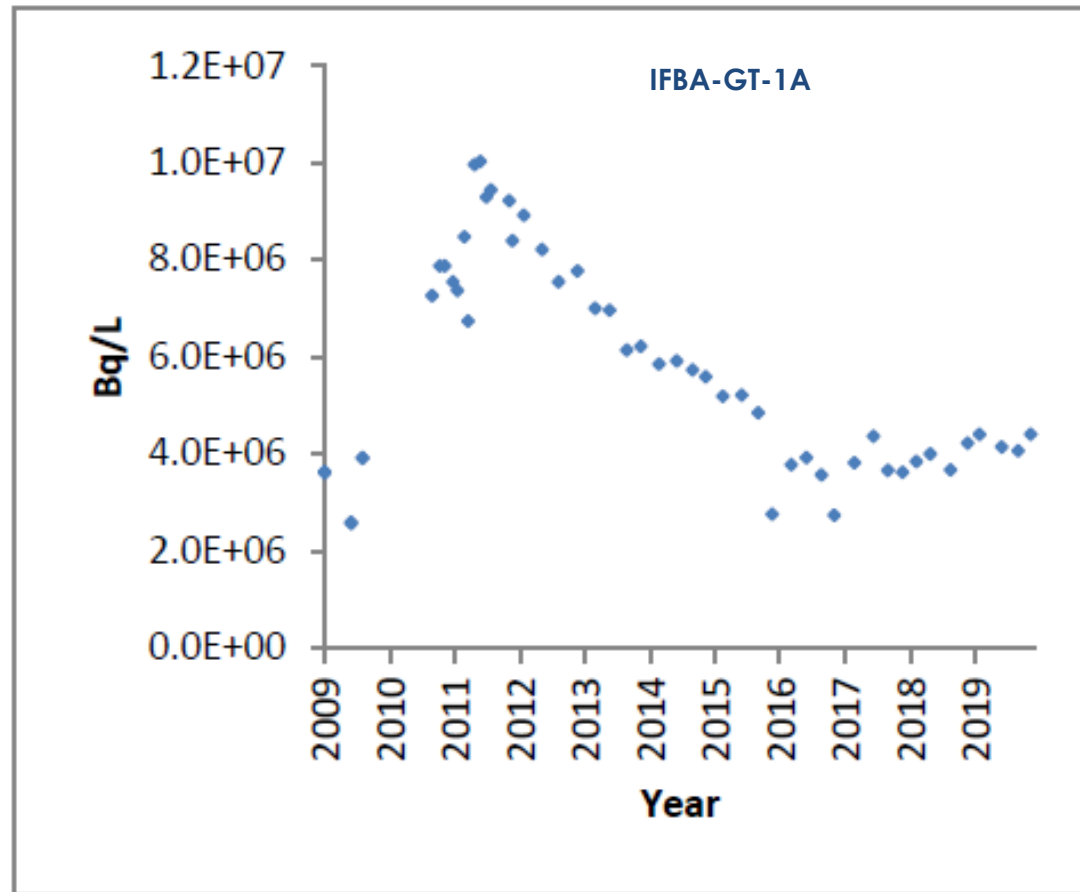
PN | Groundwater Quality

Unit 1 – 4 Irradiated Fuel Bay Area



PN | Groundwater Quality

Unit 1 – 4 Irradiated Fuel Bay Area



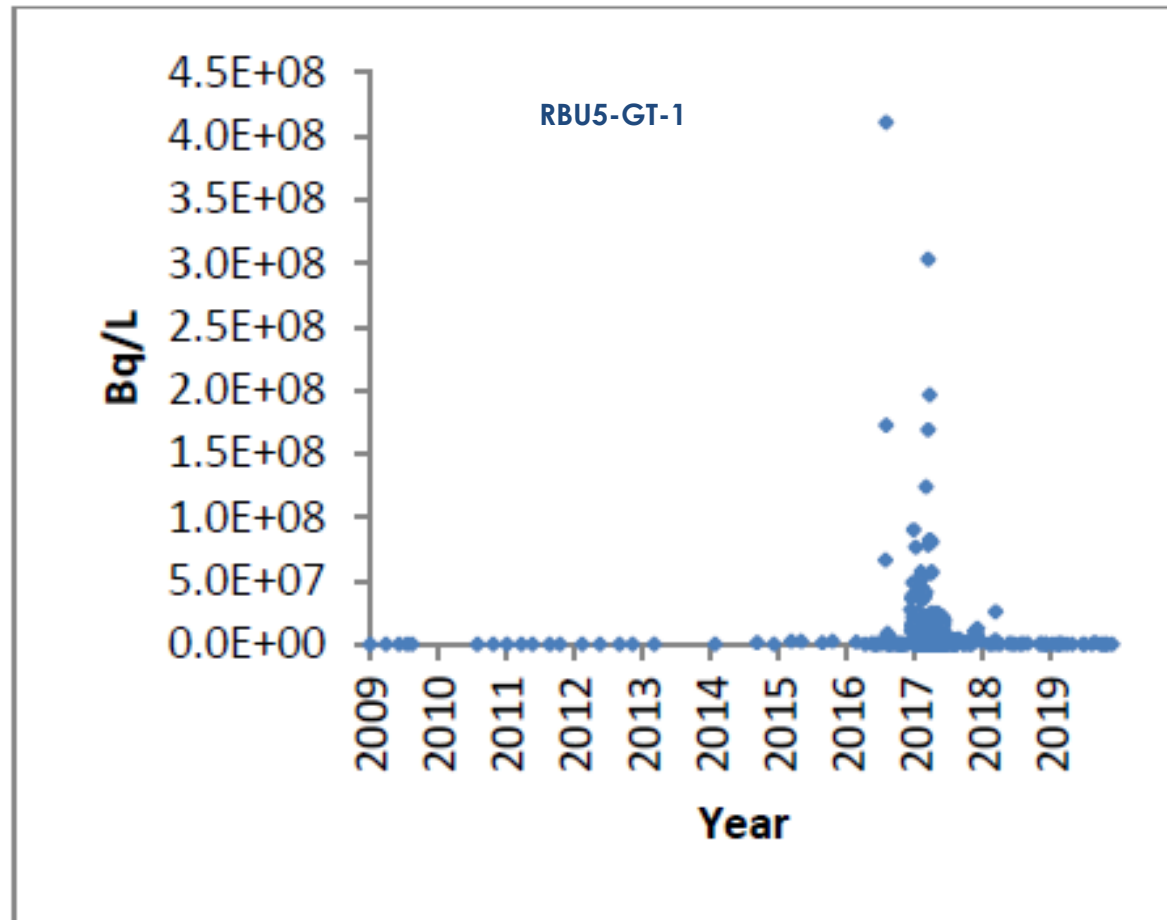
PN | Groundwater Quality

Unit 5 and Unit 6 Areas



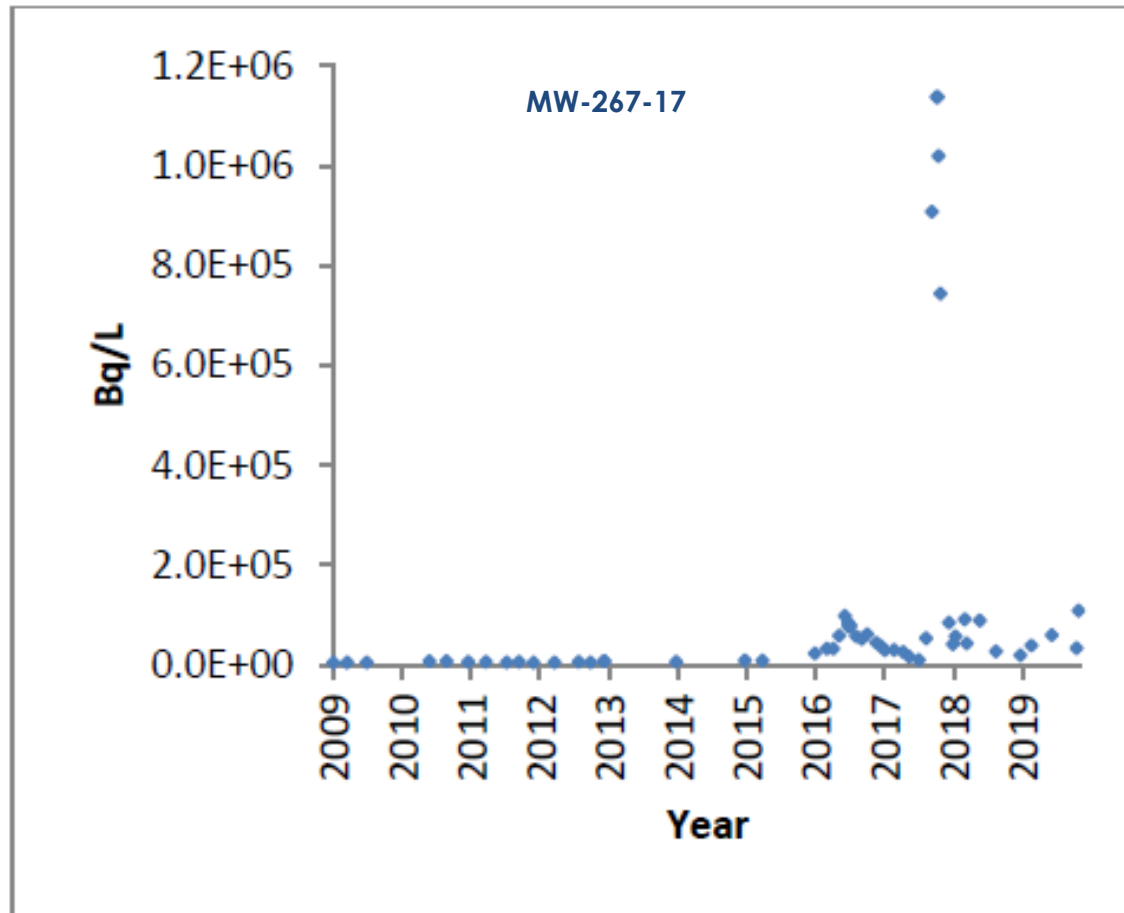
PN | Groundwater Quality

Unit 5 and Unit 6 Areas



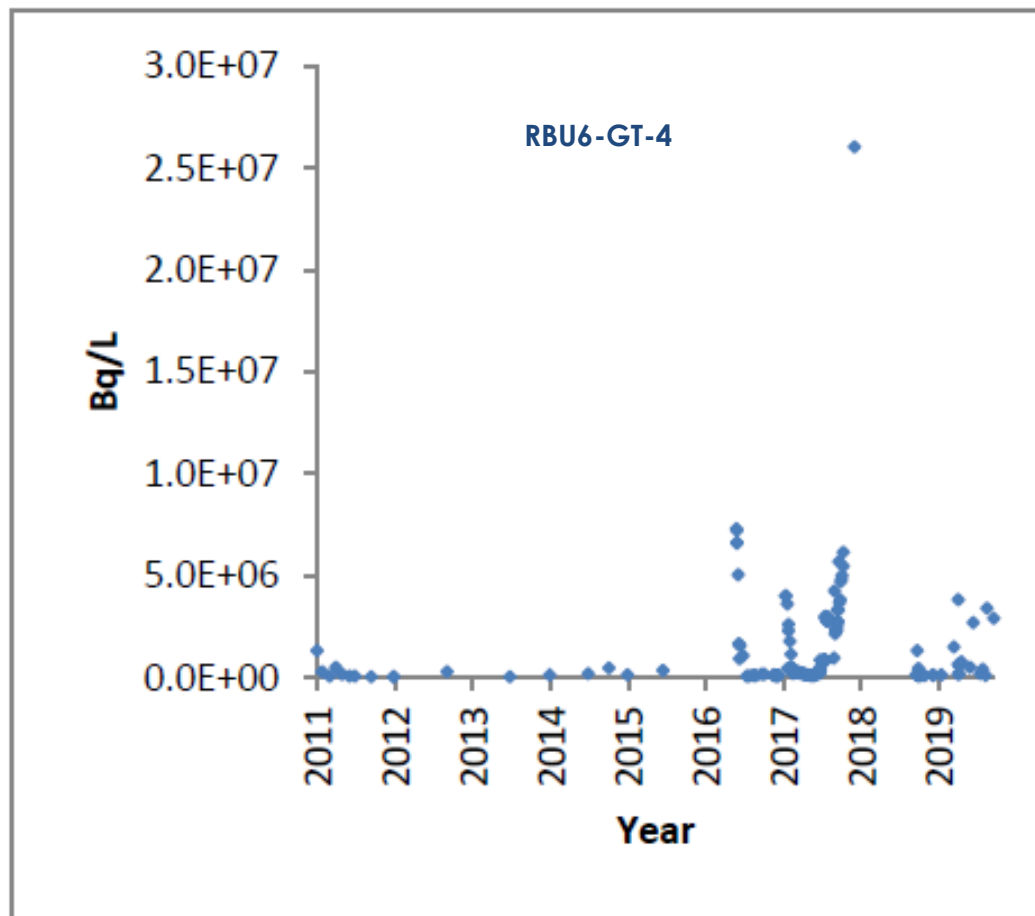
PN | Groundwater Quality

Unit 5 and Unit 6 Areas



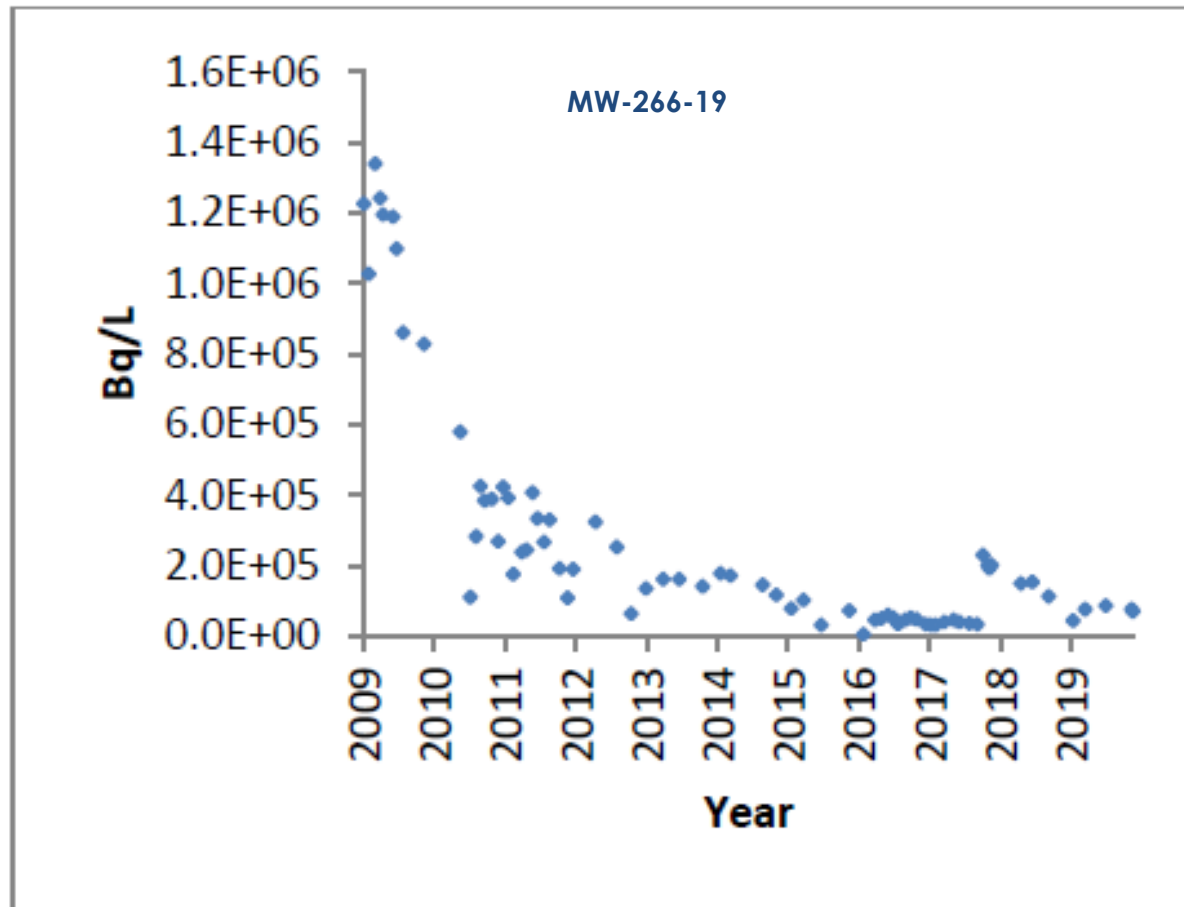
PN | Groundwater Quality

Unit 5 and Unit 6 Areas



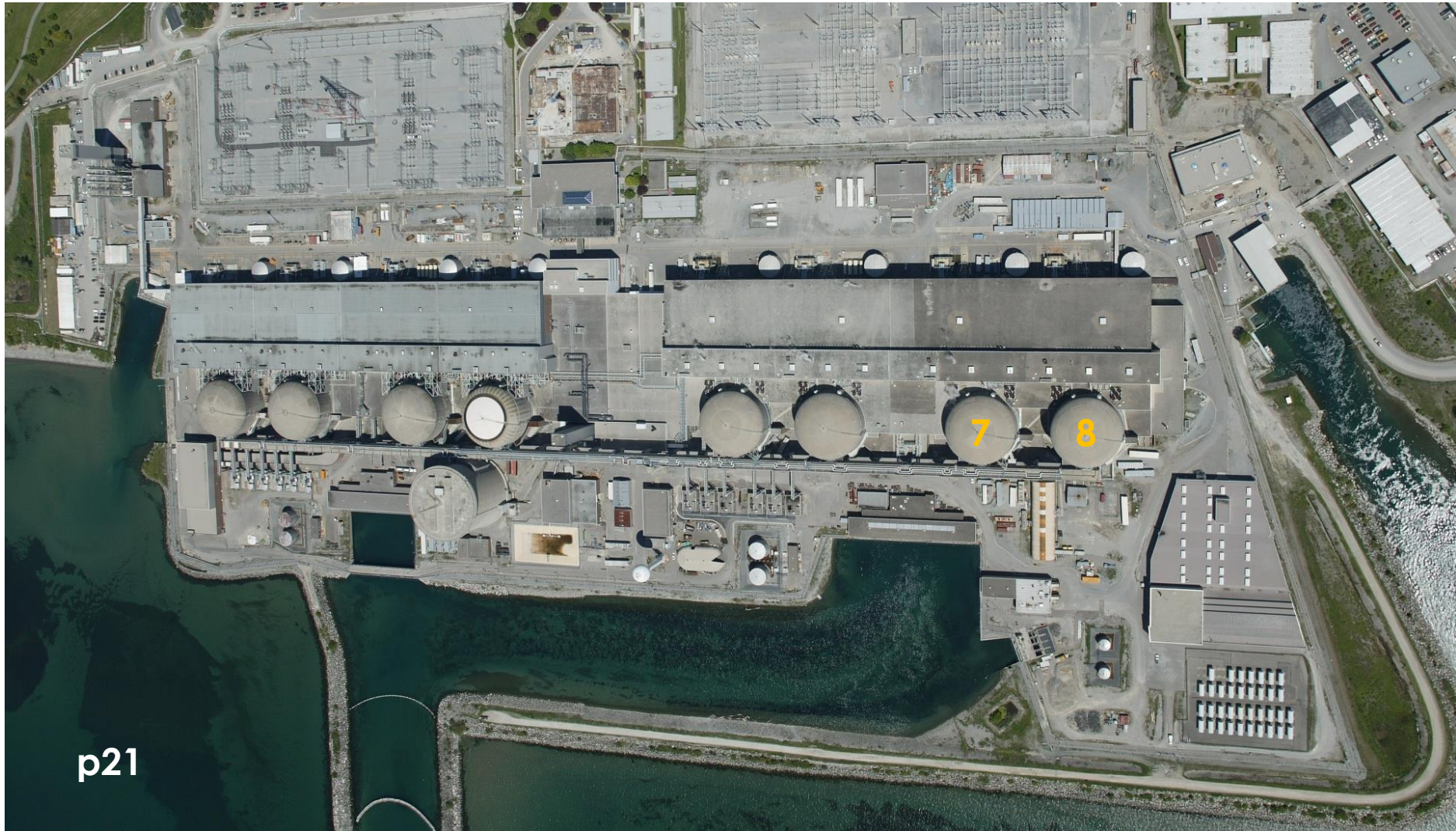
PN | Groundwater Quality

Unit 5 and Unit 6 Areas



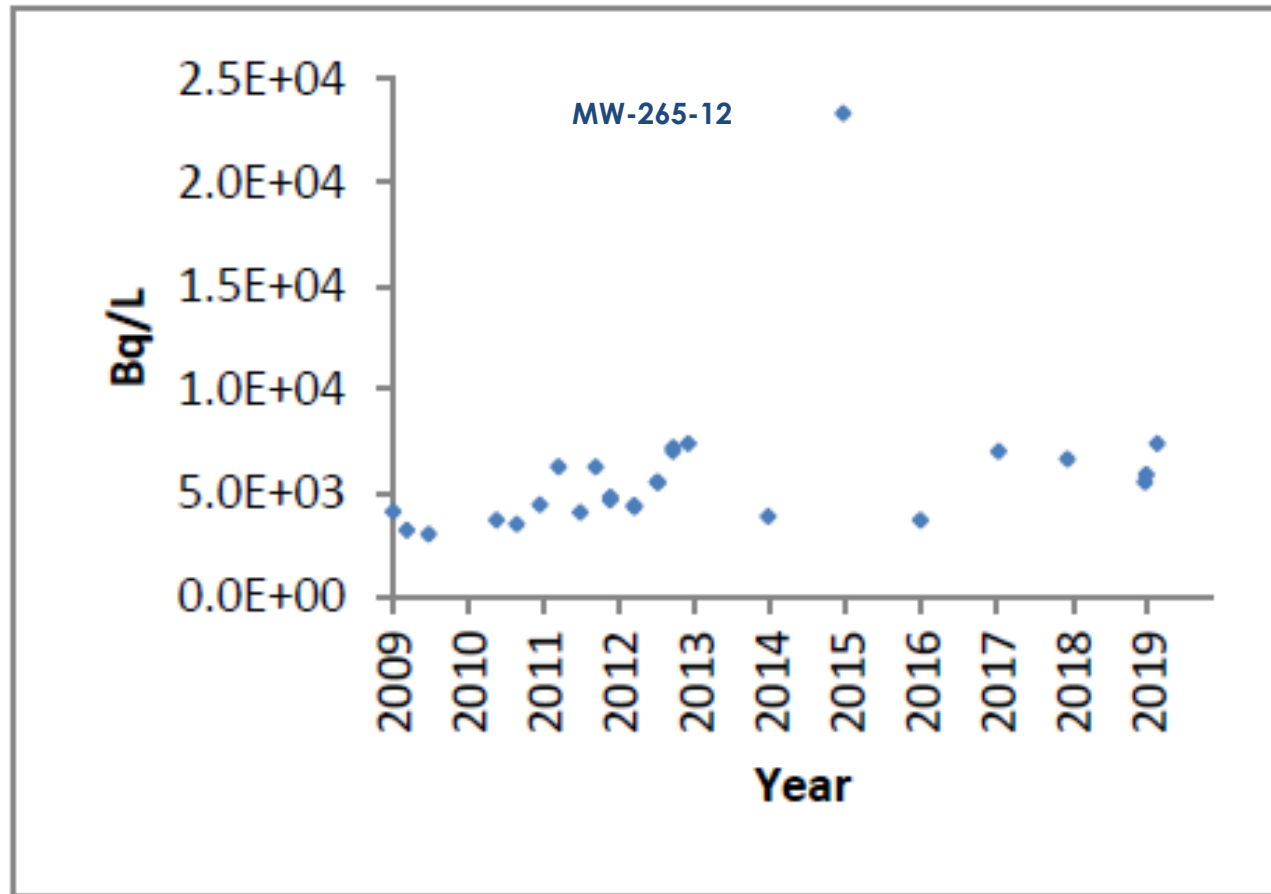
PN | Groundwater Quality

Unit 7 and Unit 8 Areas



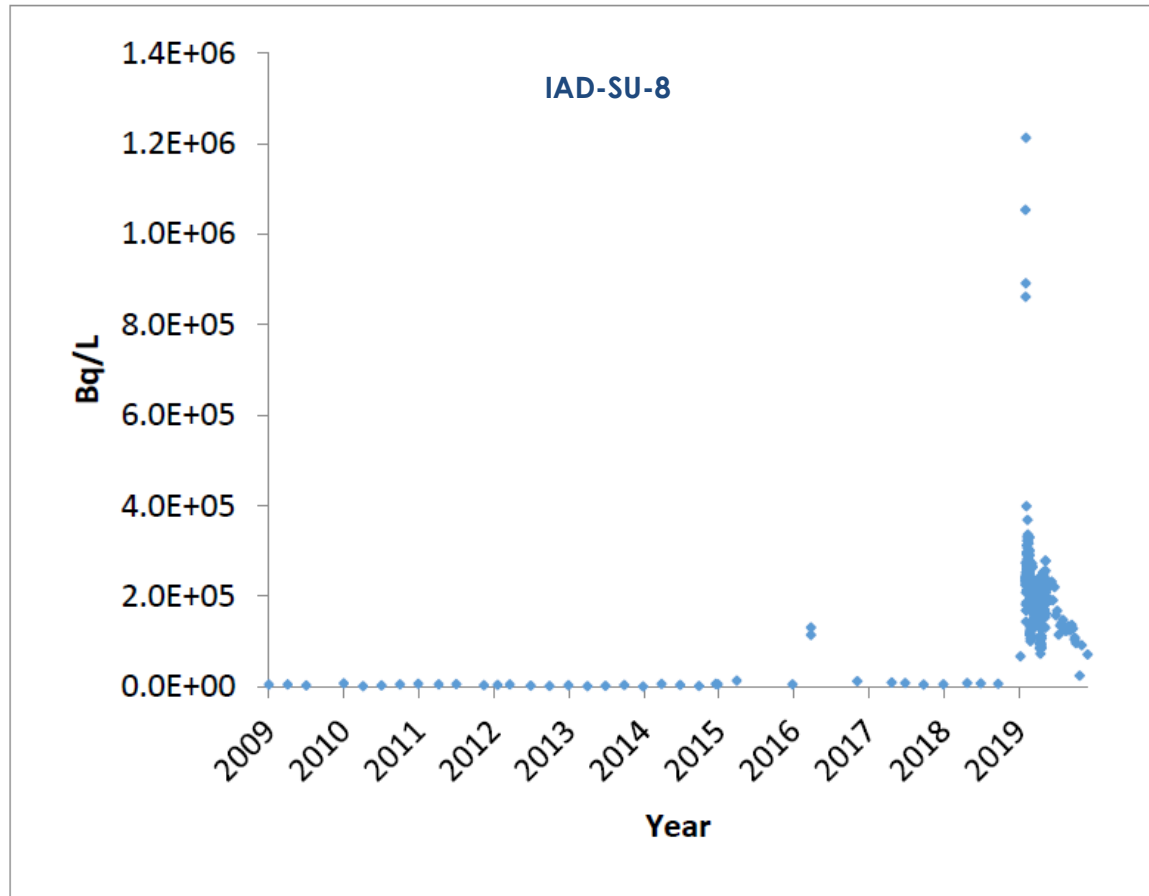
PN | Groundwater Quality

Unit 7 and Unit 8 Areas



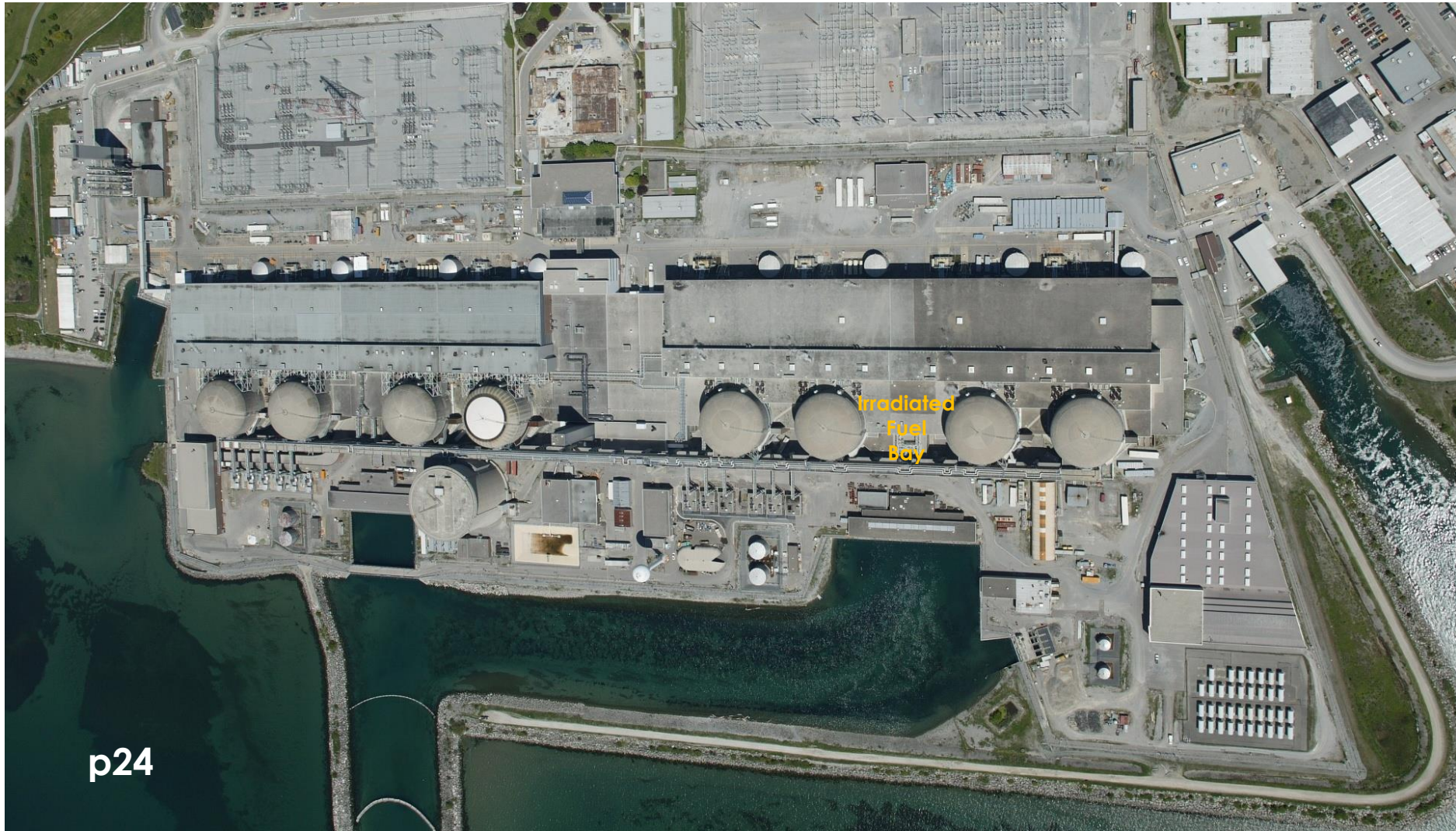
PN | Groundwater Quality

Unit 7 and Unit 8 Areas



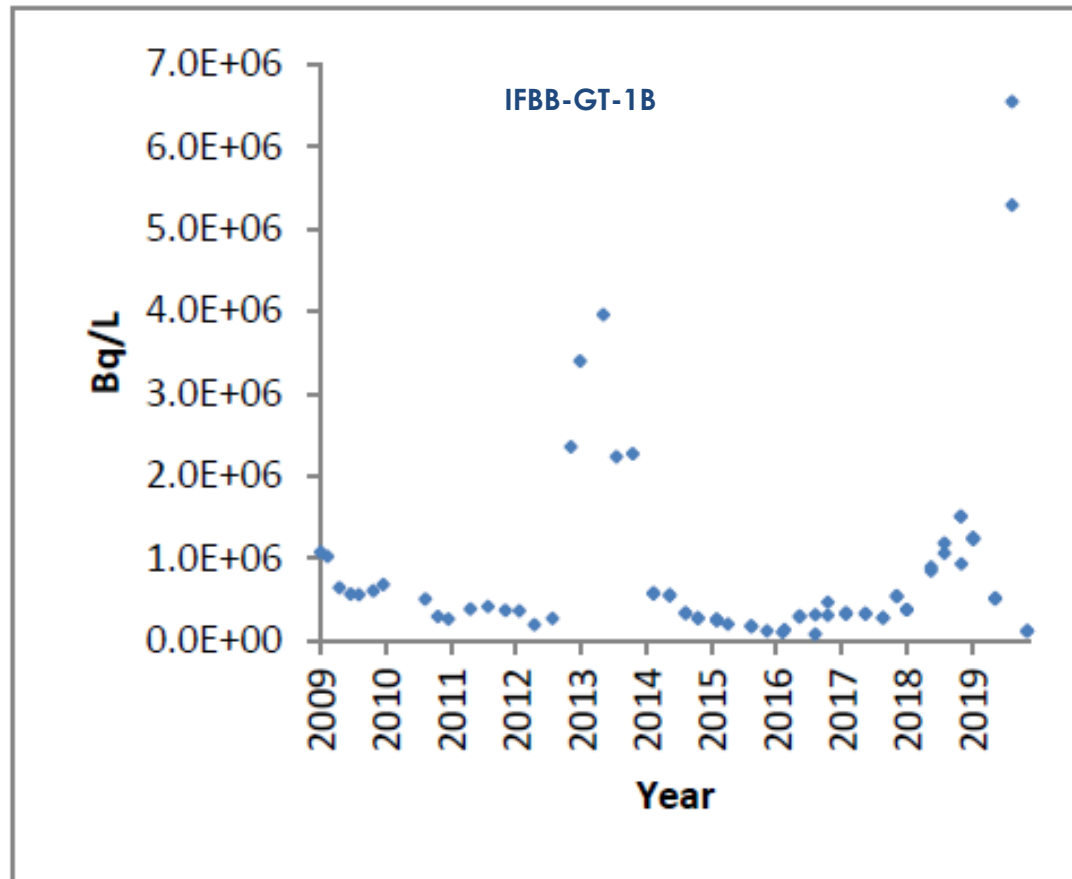
PN | Groundwater Quality

Unit 5 – 8 Irradiated Fuel Bay Area



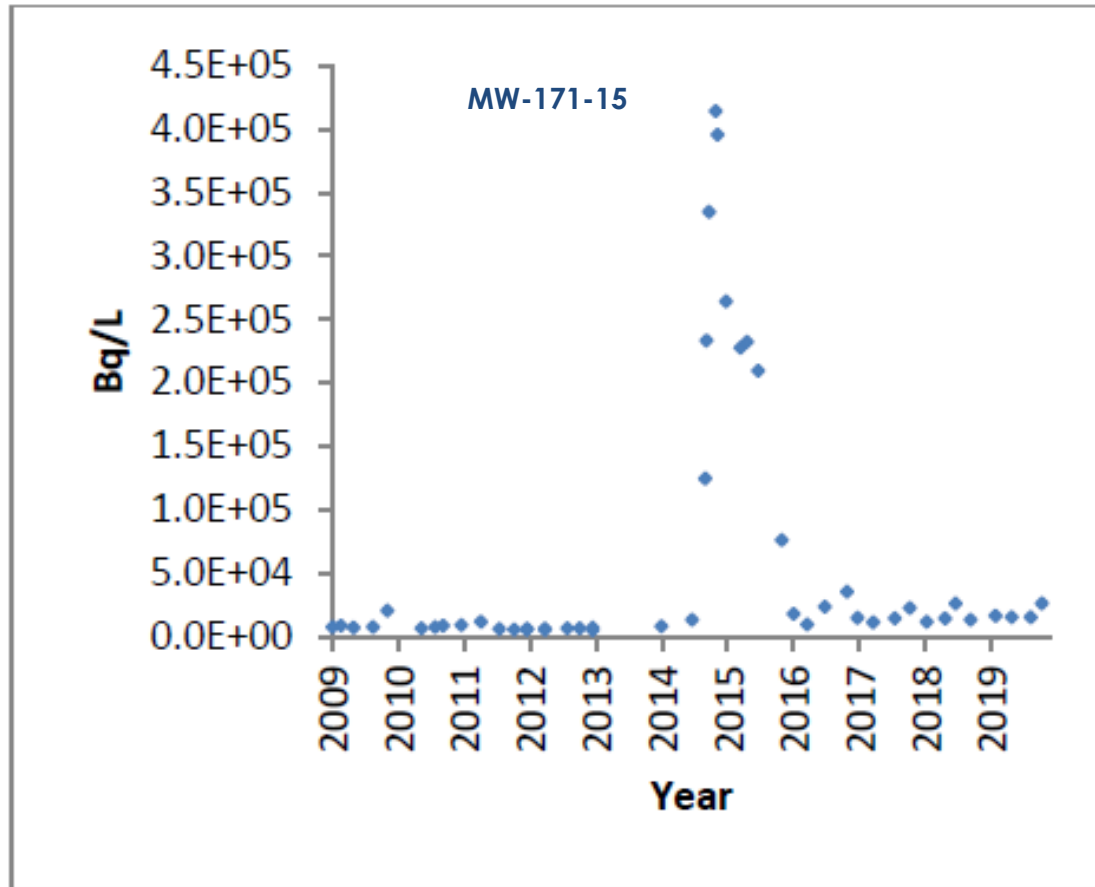
PN | Groundwater Quality

Unit 5 – 8 Irradiated Fuel Bay Area

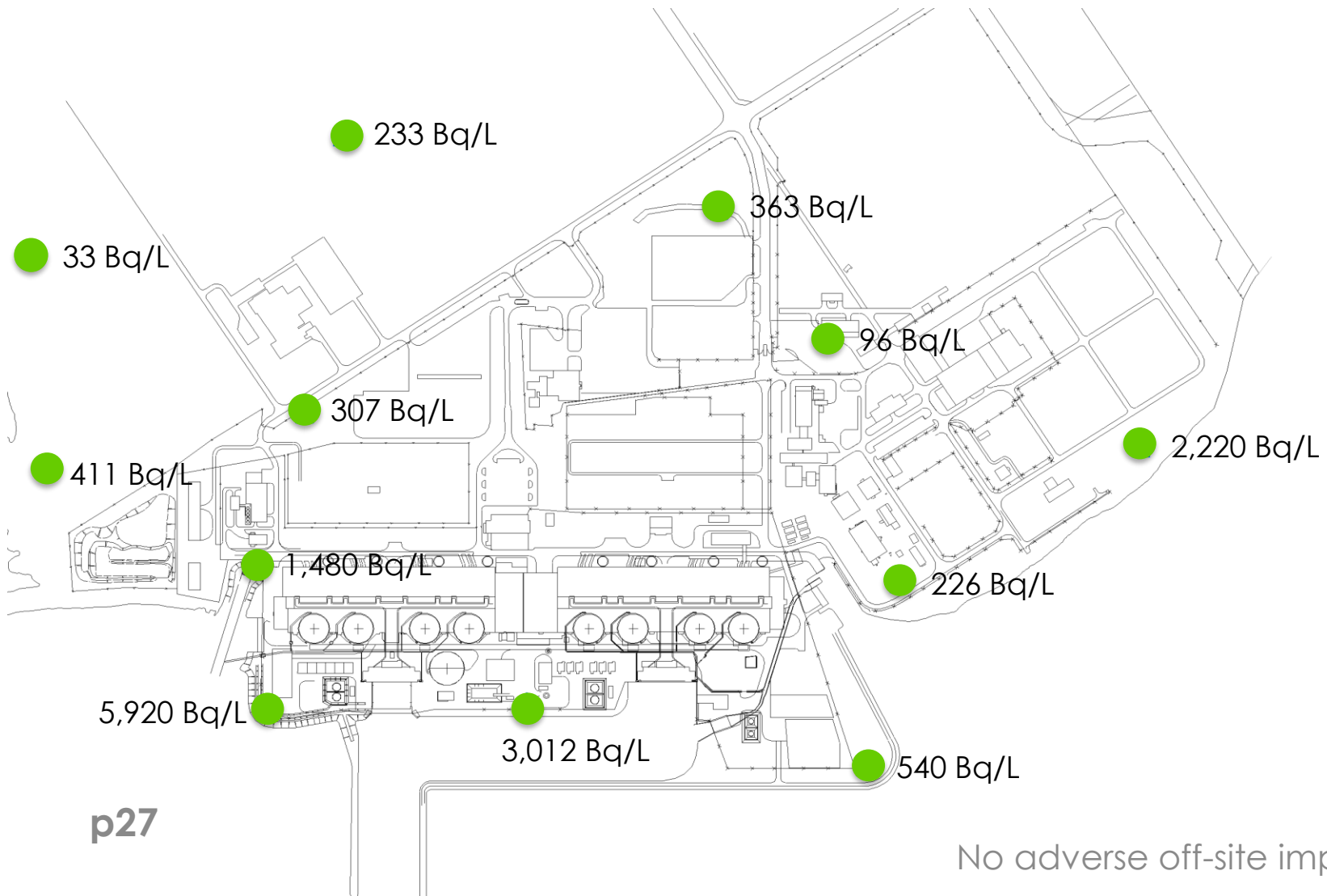


PN | Groundwater Quality

Unit 5 – 8 Irradiated Fuel Bay Area



PN | Site Boundary Groundwater Quality



2019 Summary

- The Pickering Nuclear groundwater flow patterns remain consistent with original interpretations
- Groundwater data collected from key areas indicate that tritium concentrations have remained constant or decreased, which indicate stable or improved environmental performance
 - There was an emerging groundwater matter identified at the PN Unit 8 area in 2019
 - Corrective actions undertaken to address the source and monitoring continues
- There were no indications of adverse off-site impacts from PN groundwater

ONTARIO **POWER** GENERATION

Copyright 2019