



Investigation and Remedial Activities at PFAS Sites in a Changing Regulatory Environment

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State of PFAS in Texas

16 distinct compounds listed

Screening and action levels
for groundwater and soil

EPA HA for drinking water

No regulatory criteria for
other media

How do stakeholders continue to move projects forward and maintain compliance in the current regulatory environment?

REGULATORY CHRONOLOGY OF PFAS

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FEDERAL

2000s
Voluntary phase out
SNUR and
other
initiatives

2010s
Limited
enforcement
authority
Limited
toxicity data
2012 UCMR3

2016
EPA issues HA
for
PFOS/PFOA
Inadvertent
PFAS impacts
identified

2018
ATSDR issues
draft
toxicological
profiles for
PFOA/PFOS

2019
EPA issues PFAS action
plan
Numerous state agencies
adopt lower criteria or
enforce EPA HA levels

Pre-8/2011

- TRRP had no PFAS criteria

8/2011

- TCEQ Remediation Division prepares screening criteria for limited PFAS compounds in groundwater only

9/2014

- TCEQ releases full list of 16 PCLs for groundwater and soils

11/2014

- TCEQ releases revised lower PCLs citing calculation errors

12/2014

- TCEQ determines that PCLs should have increased in prior revision, but no immediate action taken

12/2015

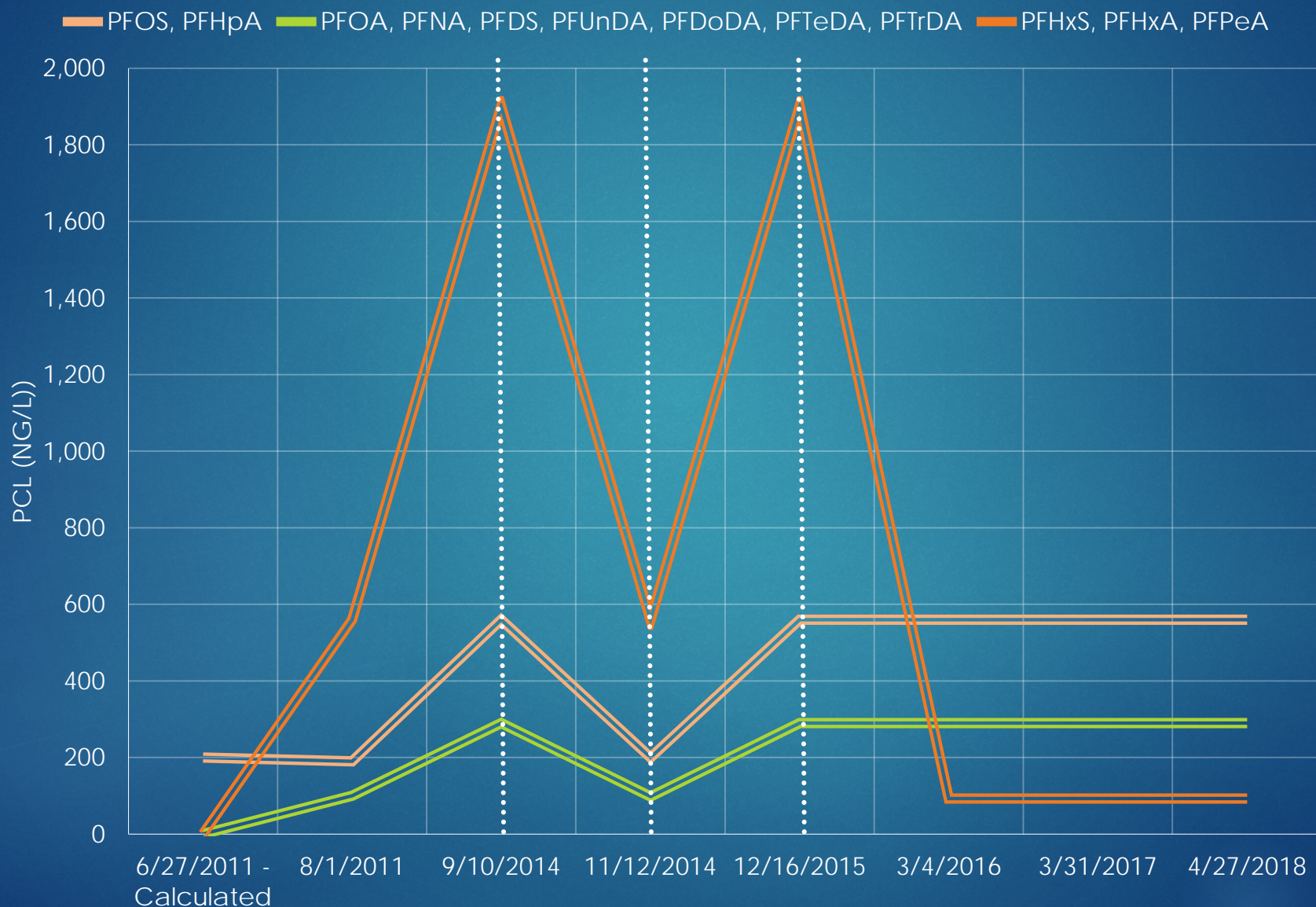
- TCEQ formally releases PCLs as part of regular update citing RfD correction

3/2016

- TCEQ releases revised PCLs citing updated RfDs and RfCs

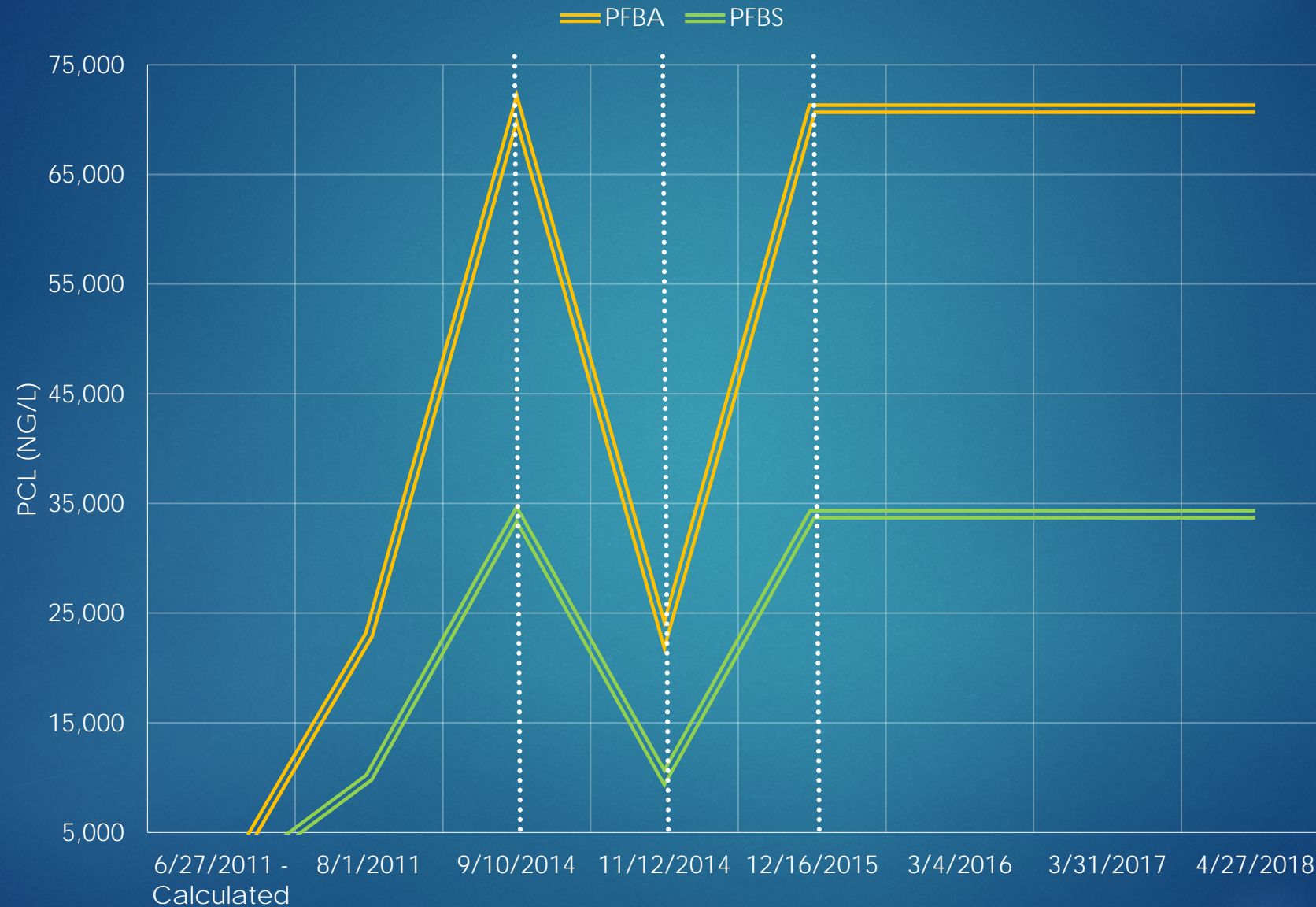
RAPID EVOLUTION OF CRITERIA

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RAPID EVOLUTION OF CRITERIA

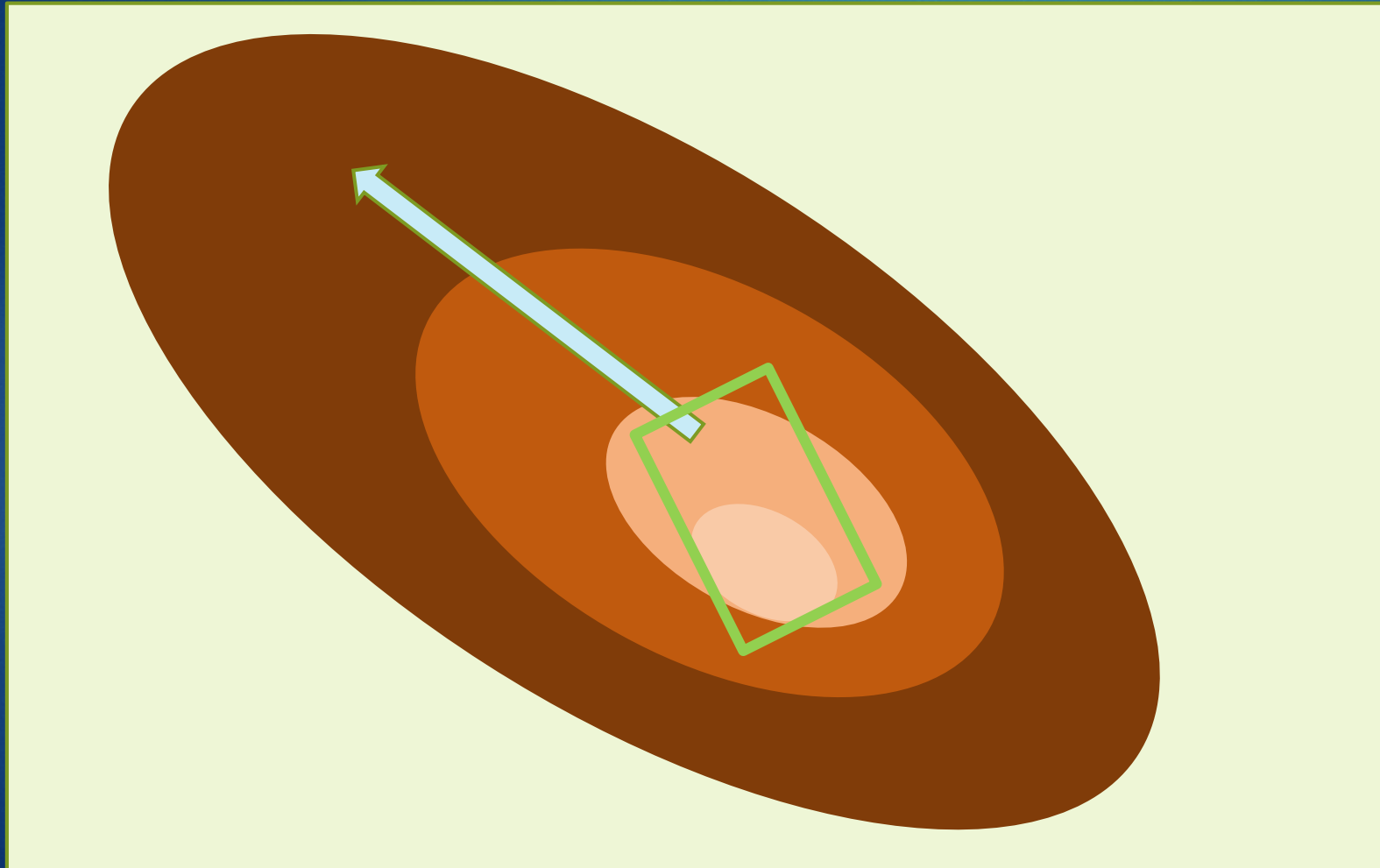
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CASE STUDY No. 1

TEXAS SITE INVESTIGATIONS

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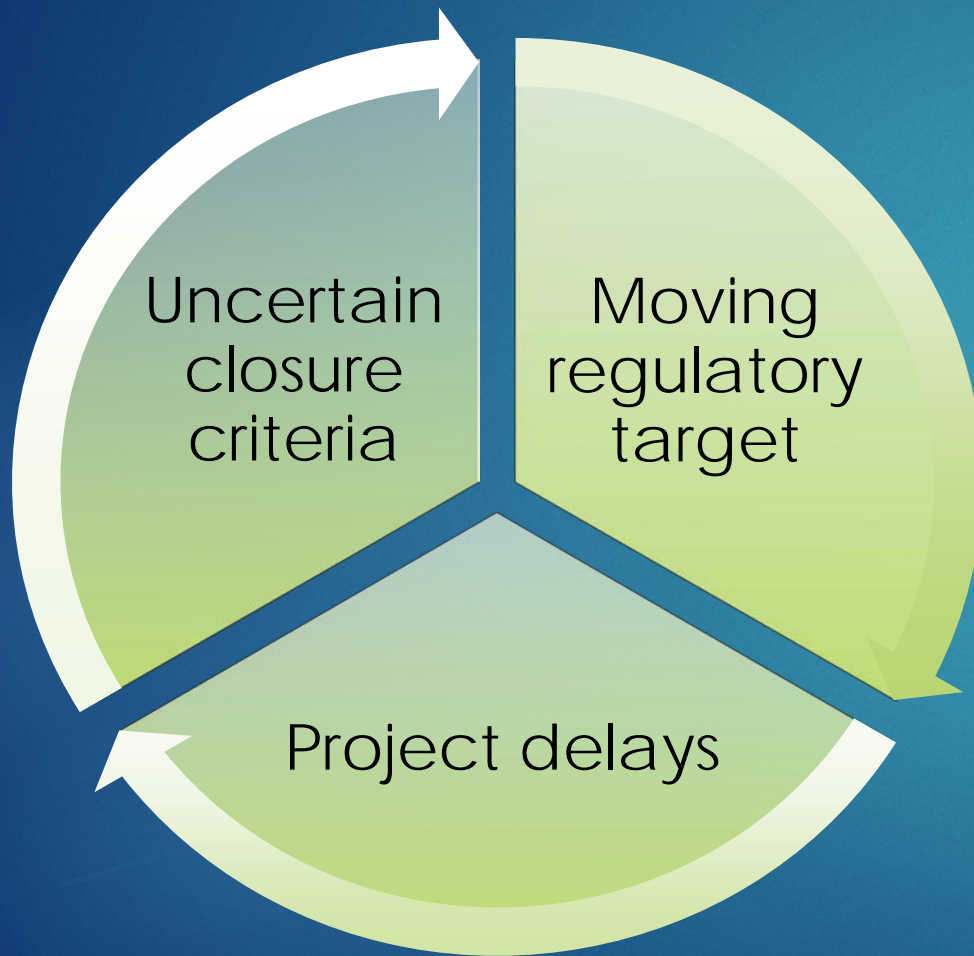
- ✓ 30+ acre source area
- ✓ Commercial/industrial usage
- ✓ PFAS historically used on site
- ✓ PFAS confirmed during due diligence
- ✓ Mixed use zoning

- Site boundary
- Plume based on provisional PCLs
- 09/2014 and 12/2015 PCLs
- 11/2014 PCLs
- 03/2016 PCLs

CASE STUDY No. 1

TEXAS SITE INVESTIGATIONS

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Client Perspective

- Current and future liability
- Cost limitations
- Risk mitigation

Action Strategies

- Start with receptor risk evaluation early
- Constant communication and engagement with stakeholders
- Evaluate options for iterative investigations
- Consider mitigation options

CASE STUDY No. 2

INTEGRATED AIR SERVICES

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- No EPA validated test methodologies for PFAS emissions sampling
- Weston has participated in the development of testing protocols
- We worked with our client and an analytical lab to develop emissions test method for PFAS and GENX compounds and their byproducts



Control console



Impinger ice bath



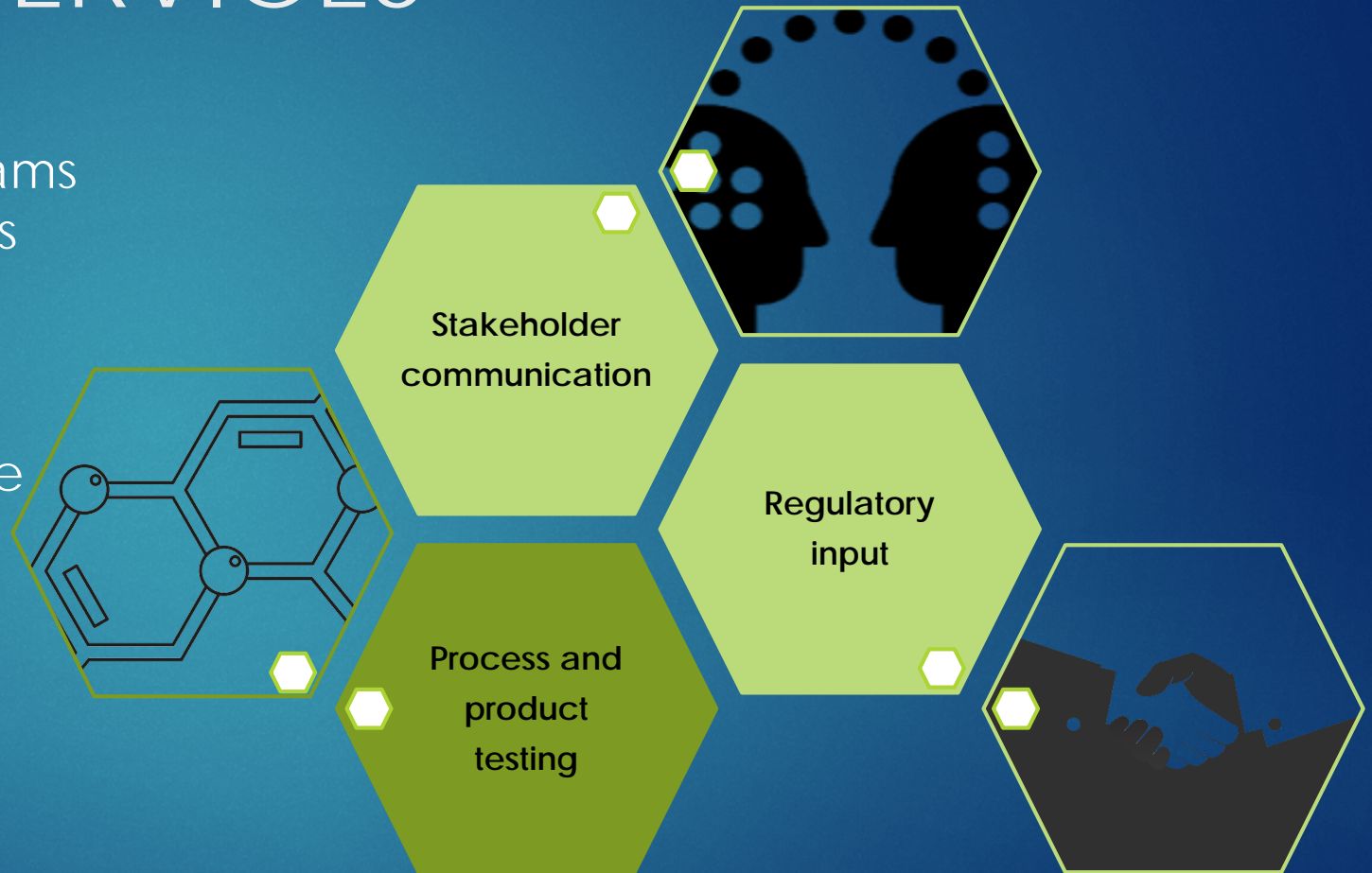
Impinger ice bath

CASE STUDY No. 2

INTEGRATED AIR SERVICES

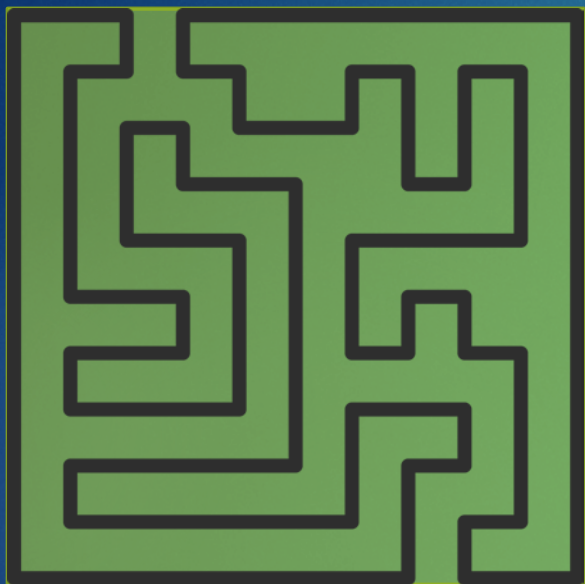
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- Performed hundreds of test programs on several processes and products
- Conducted under observation of state regulators
- Reported data to EPA and/or state agencies
- Assisting with stakeholder communications
- Continuing to respond to clients emission testing needs



SUMMARY

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- PFAS regulation will continue to evolve in the near-term
- New methodologies are being developed where no regulatory methods exist
- Expect challenges to advancing project investigations, remediation, and closures
- Evaluate risk to receptors early
- Constant communication and engagement with stakeholders
- Anticipate regulatory changes
- Evaluate options for iterative investigations
- Consider mitigation options appropriate for site

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