January 22, 2026

Investigations for Non-Stormwater Discharge

Requirements, Site Evaluations, & Case Study

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Texas Regional Stormwater Conference 2026

POWER ENGINEERS
ENVIRONMENTAL

Agenda

- Authorized/Unauthorized Non-Stormwater Discharges
- Site Evaluations
- Case Study – Texas Facility

Stormwater Discharges

If a facility meets MSGP eligibility criteria, then the following discharges are authorized:

- Stormwater discharges associated with primary and co-located industrial activities
- Discharges EPA designates as needing a stormwater permit (Section AD)
- Discharges not required to obtain NPDES permit authorization but mix with discharges authorized under the permit
- Stormwater discharges from facilities subject to any of the national stormwater-specific effluent limitations guidelines

2021 MSGP Authorized Non-Stormwater Discharges

(MSGP Part 1.2.2.1)

Emergency/unplanned Fire-fighting Activities

External building/structure washing

Irrigation/Landscape Drainage

Windblown mist from cooling towers

Unauthorized Non-Stormwater Discharges Evaluation

By the end of the first year under EPA MSGP, documented discharge evaluation must include:

- Date of the evaluation
- Description of the evaluation criteria used
- List of discharge points or onsite drainage points directly observed during the evaluation

Immediately take action for any unauthorized non-stormwater discharges

Non-Stormwater Discharges Evaluation

Tools	Satellite imagery	Site maps	Flashlight/Camera
Challenges	Old facilities	Inaccurate maps	Restricted from taking photos
Tips	Historical imagery	Talk to individuals that have been onsite for many years	Organized path through facility
Things to look for	Dry weather flows	Discharge with strange color/odors	Oversized drainage piping

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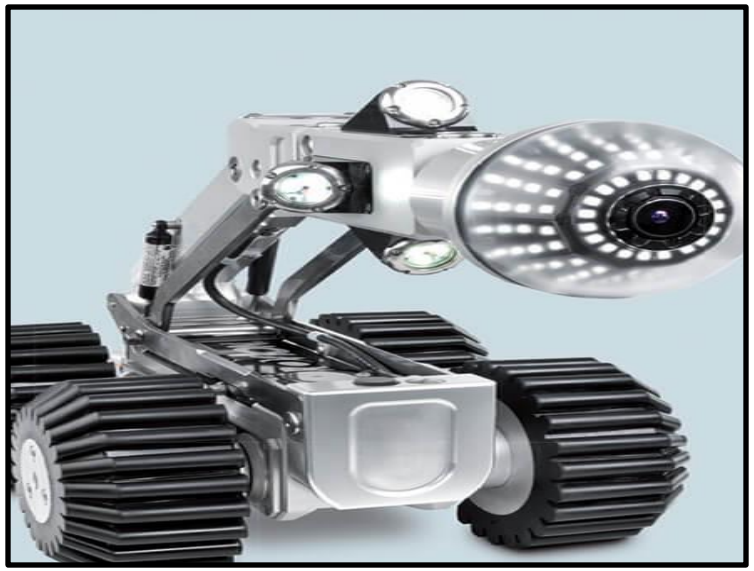
Non-Stormwater Discharges Evaluation

Dye Testing

Smoke Testing



Closed-Circuit Television (CCTV)

Non-Stormwater Discharges Evaluation

	Dye Testing	Smoke Testing	Closed-Circuit Television (CCTV)
Process	Introducing non-toxic dye into storm drains (Potentially internal plumbing)	Introducing smoke into the storm drain system and observing where the smoke surfaces.	Guiding a mobile video camera through the storm drains
Price	$	$$	$$$$
Pros	Can be completed in house	Can be completed in house	Should be conclusive
Cons	Might rely on a lot of water. Might be inconclusive	Works best at testing one inlet at a time. Might be inconclusive	Requires hired contractors

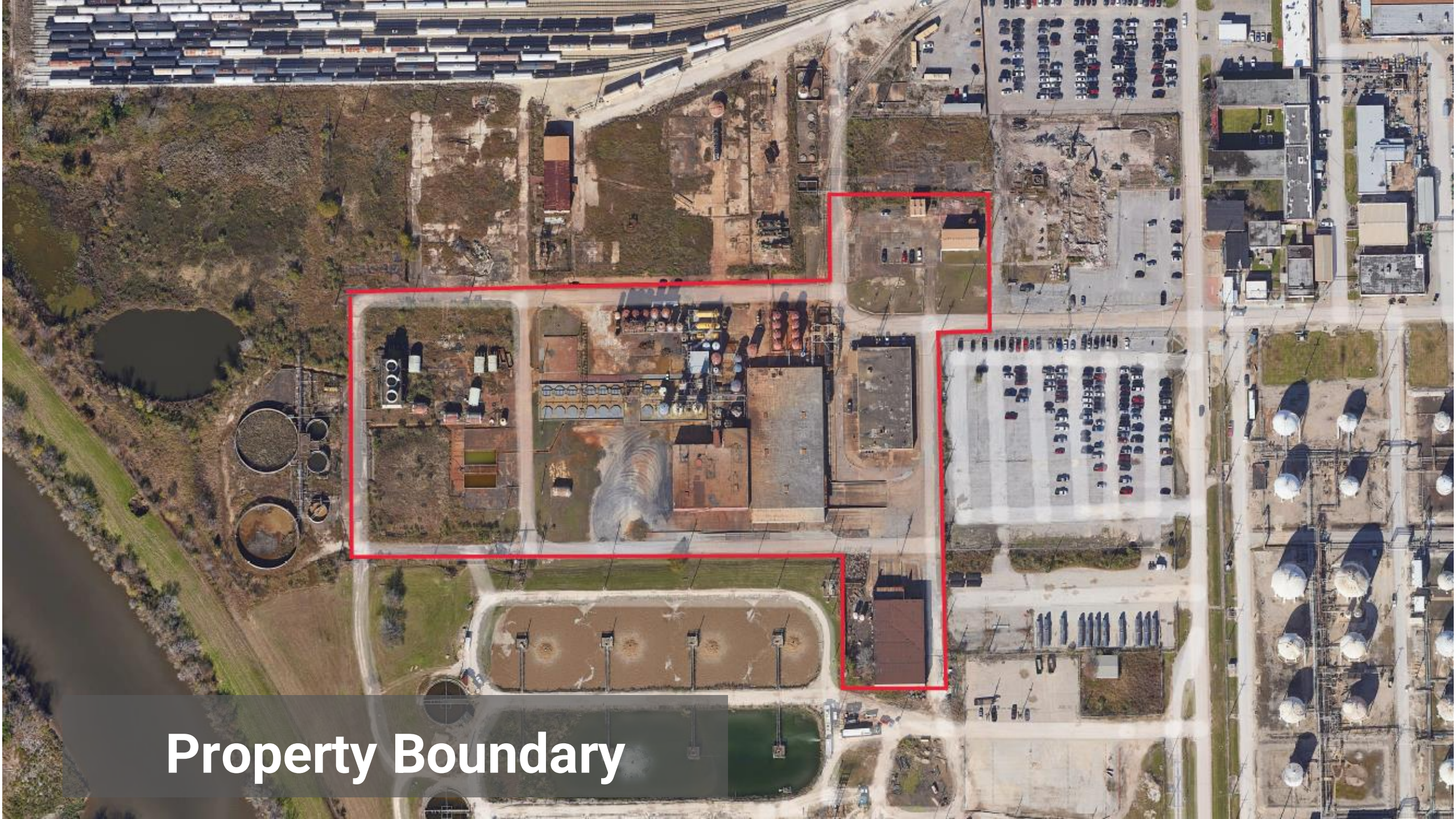
Case Study: Texas Facility

Develop an Industrial Storm Water Pollution Prevention Plan (SWPPP)

- Texas requires facility inspection for non-stormwater discharges be made within 180 days following submittal of the NOI
- During investigation, drainage network could not be completely identified, and dry weather flow was observed
- POWER performed dye testing

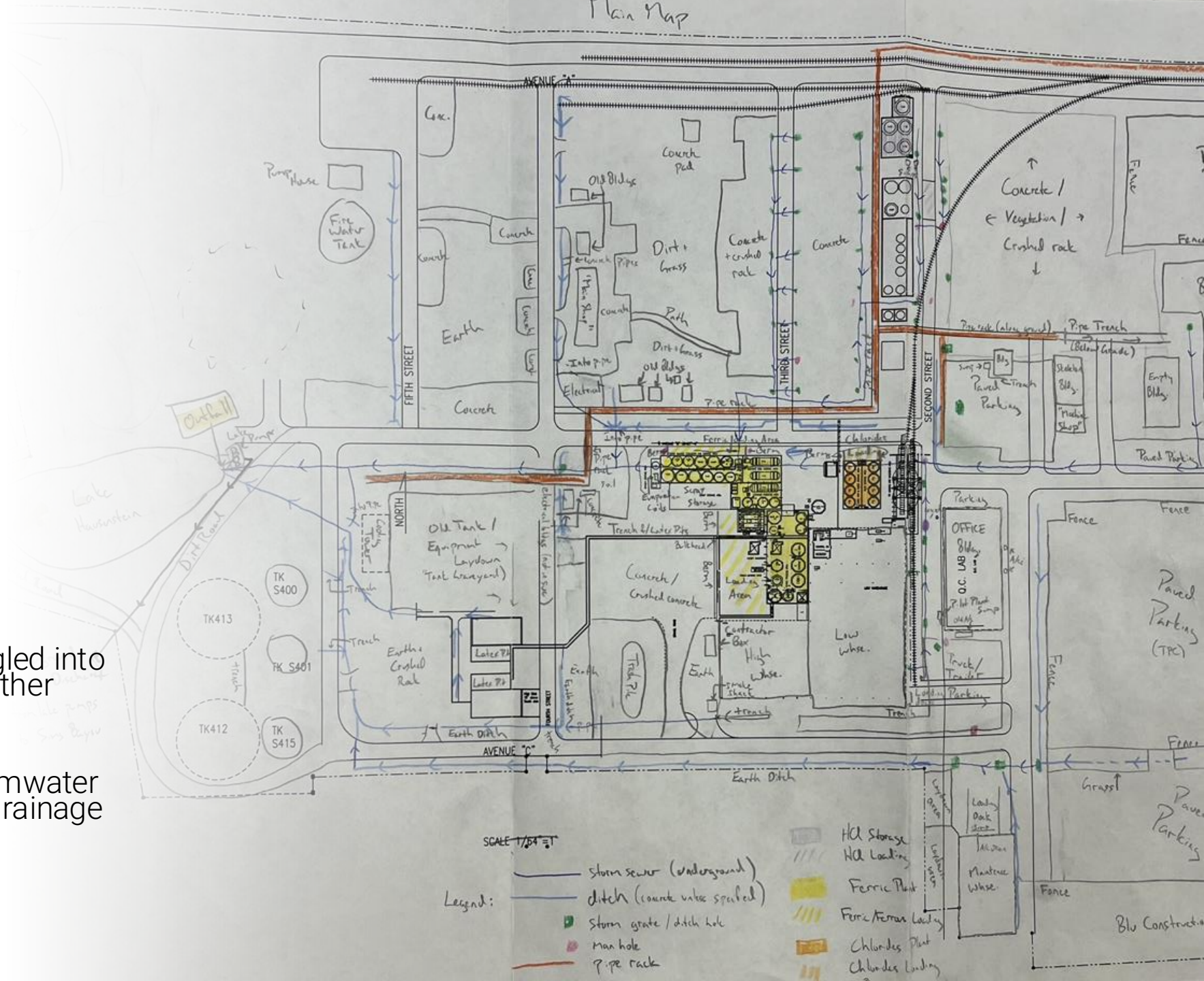
Site History

- Operations dating back to 1944
- 6 known owners
- Many industrial processes
- Alterations were made within and around the facility
- Current owner purchased the facility in 2021


Property Boundary

Challenges

- Old facility
- New ownership
- Hand drawn maps
- Many unknowns:
  - Pipe discharge locations
  - If stormwater flows co-mingled into sanitary sewer line (Dry weather flows)
  - If neighboring facilities' stormwater utilized site's underground drainage network
  - Various unknown features

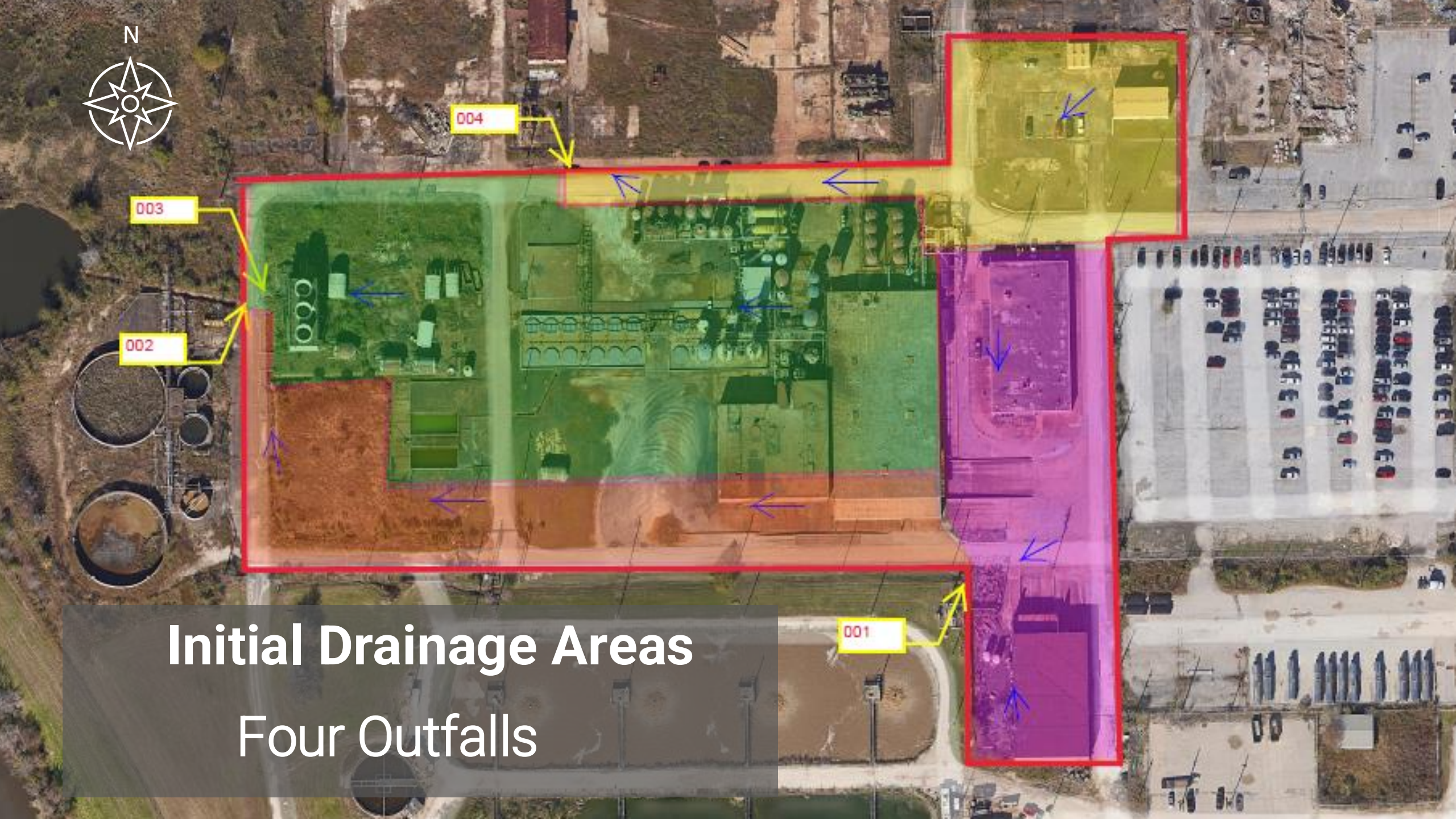


Unknown Features

Outlet/Overflow drainage

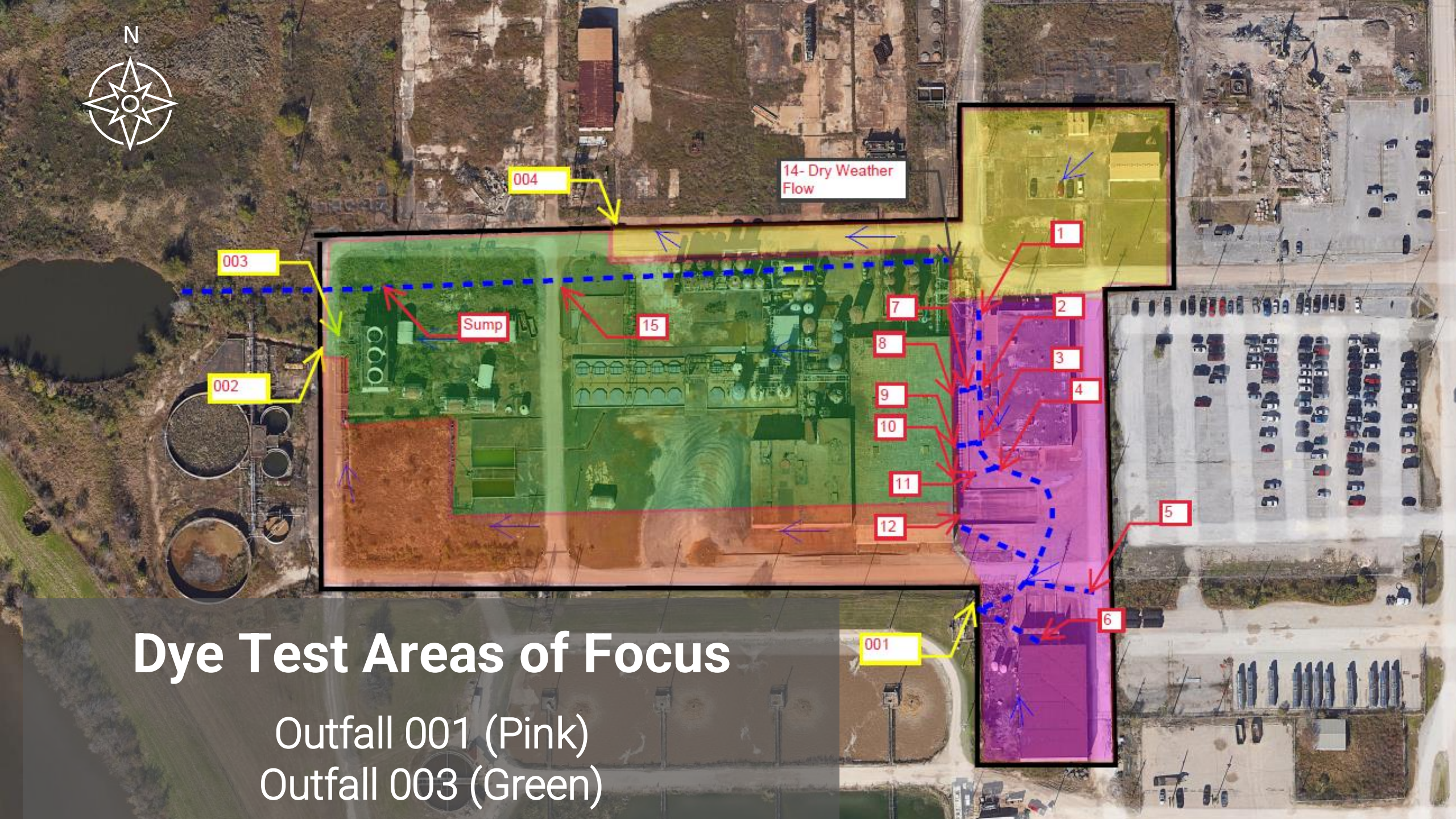
Sump

Pipes



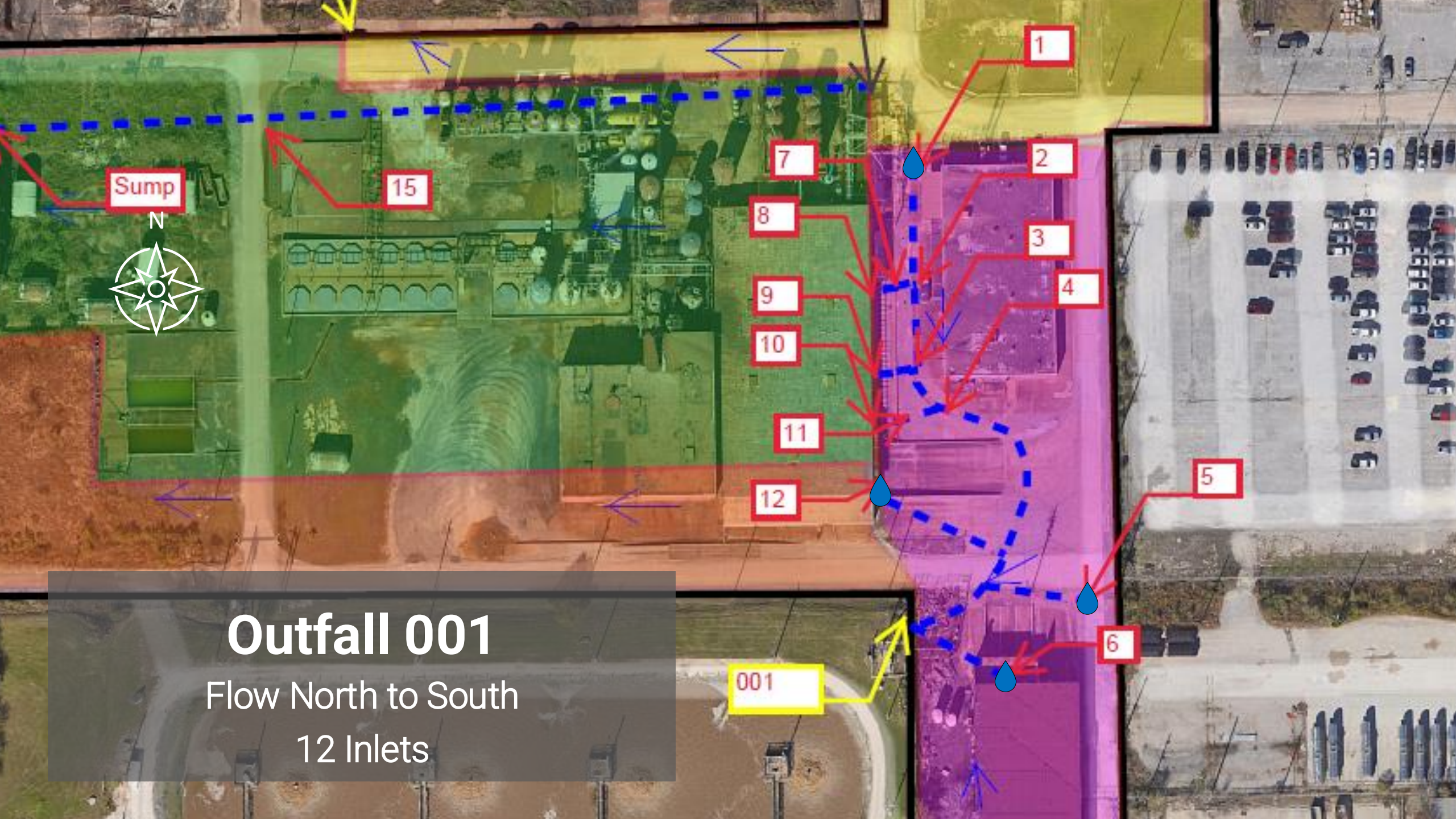
Initial Drainage Areas

Four Outfalls



Dye Test Areas of Focus

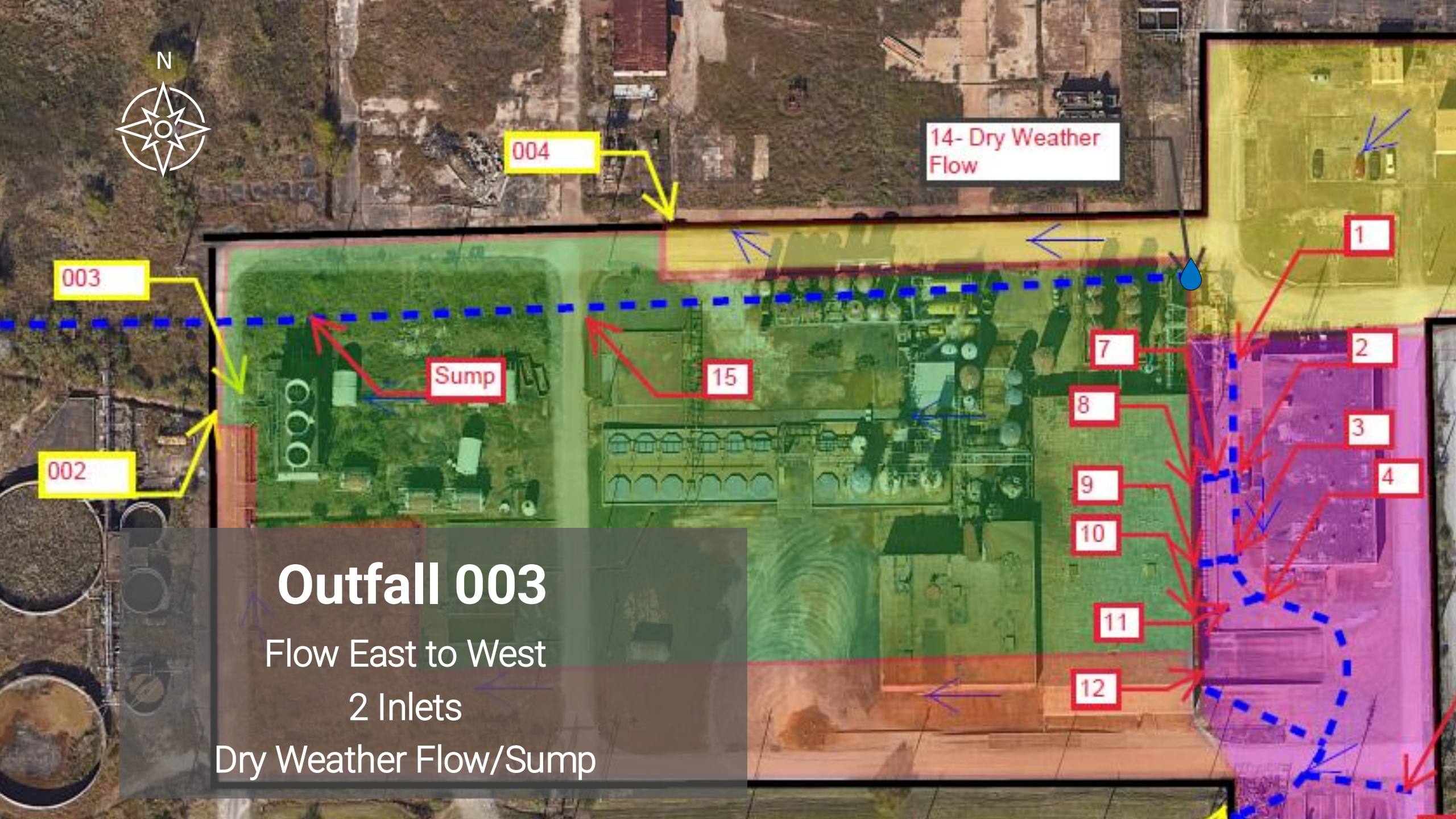
Outfall 001 (Pink)
Outfall 003 (Green)



Outfall 001

Flow North to South

12 Inlets



Outfall 003

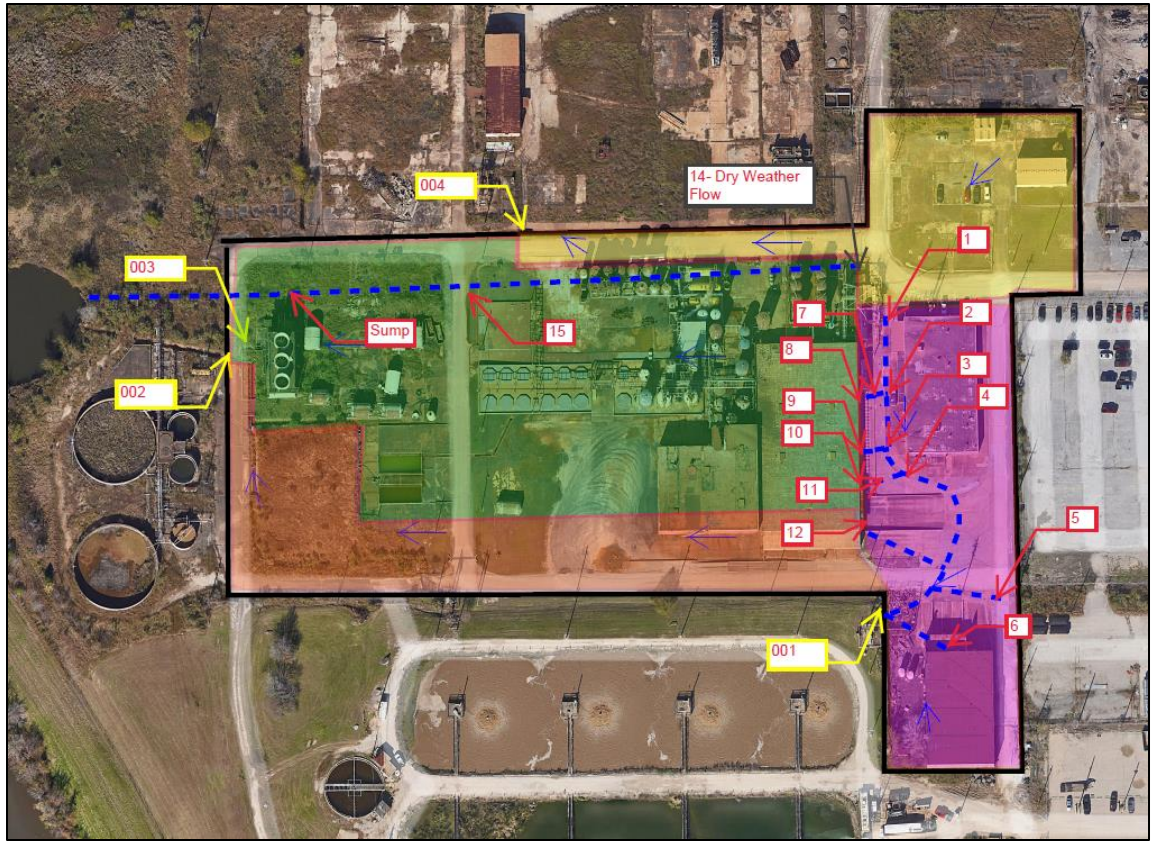
Flow East to West

2 Inlets

Dry Weather Flow/Sump

Anticipated Flow Pattern

INLET	DESCRIPTION	DRY WEATHER FLOW OBSERVED	ADD DYE	ORDER OF ADDING DYE	DYE COLOR	INLETS/OUTFALLS TO CHECK FOR DYE	ZONE
1	Northern drain inlet in corridor between offices and rail line. Anticipated path to flow south.	-	Yes	2	Yellow/Green	Inlets 2, 3, 4, 5, 6, 14 Outfall 001, Sump	1
2	Drain inlet in corridor between offices and rail line. Anticipated path to flow south.	-	-	-	-	Inlets 3, 4, 5, 6 Outfall 001	1
3	Drain inlet in corridor between offices and rail line. Anticipated path to flow south.	-	-	-	-	Inlets 4, 5, 6 Outfall 001	1
4	Drain inlet in corridor between offices and rail line. Anticipated path to flow south.	-	-	-	-	Inlets 5, 6 Outfall 001	1
5	Potential drain Inlet located in driveway north of Maintenance Shop. Anticipated path to flow south.	-	-	-	-	Inlets 6 Outfall 001	1
6	Drain inlet in dock bay of Maintenance Shop. Anticipated path to flow west.	-	Yes	3	Red	Outfall 001	1



Dye Testing Supplies & Techniques

Clean Totes

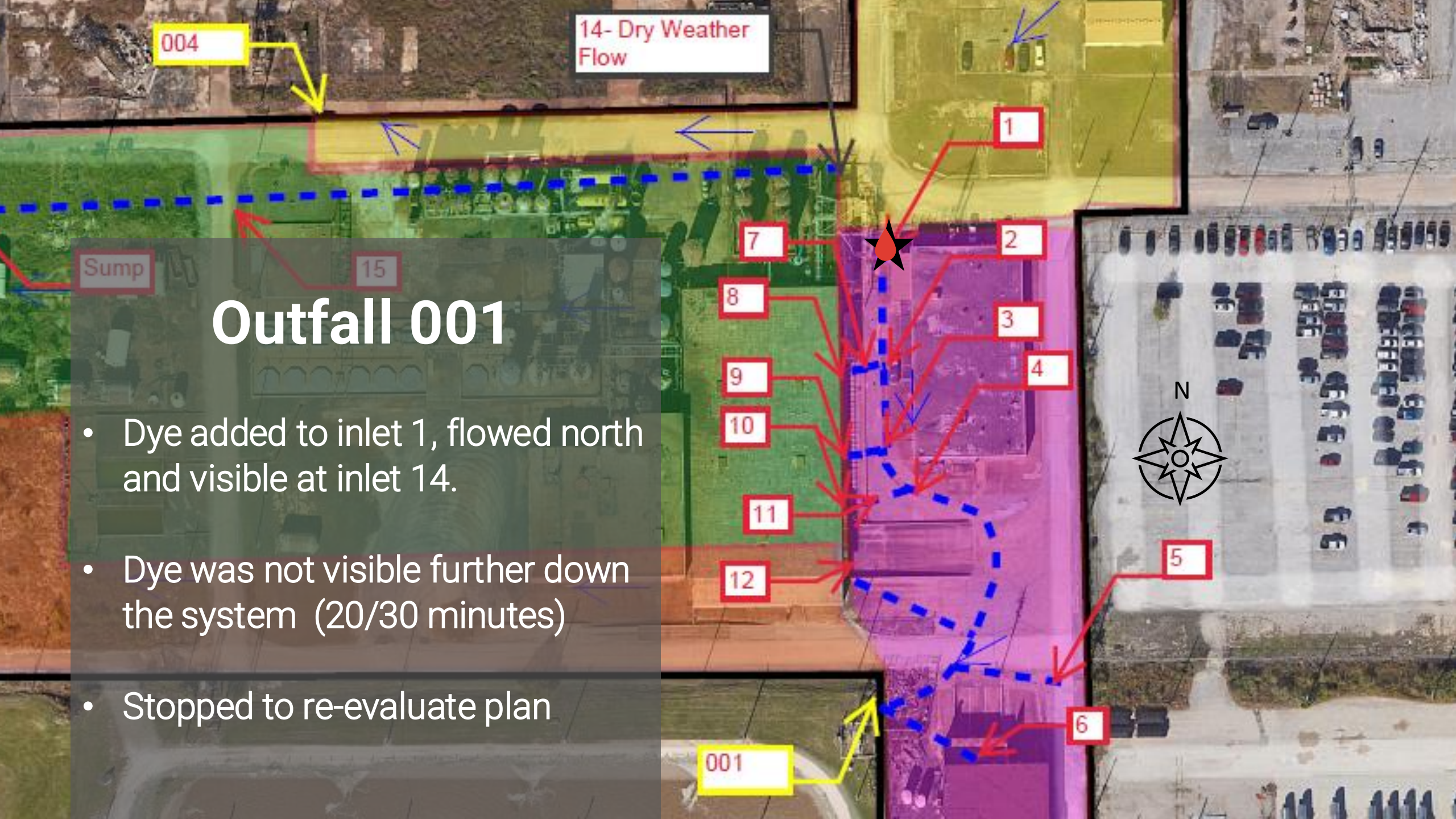
Flourescent Dyes (green/yellow & red)

UV Flashlights

Crowbar

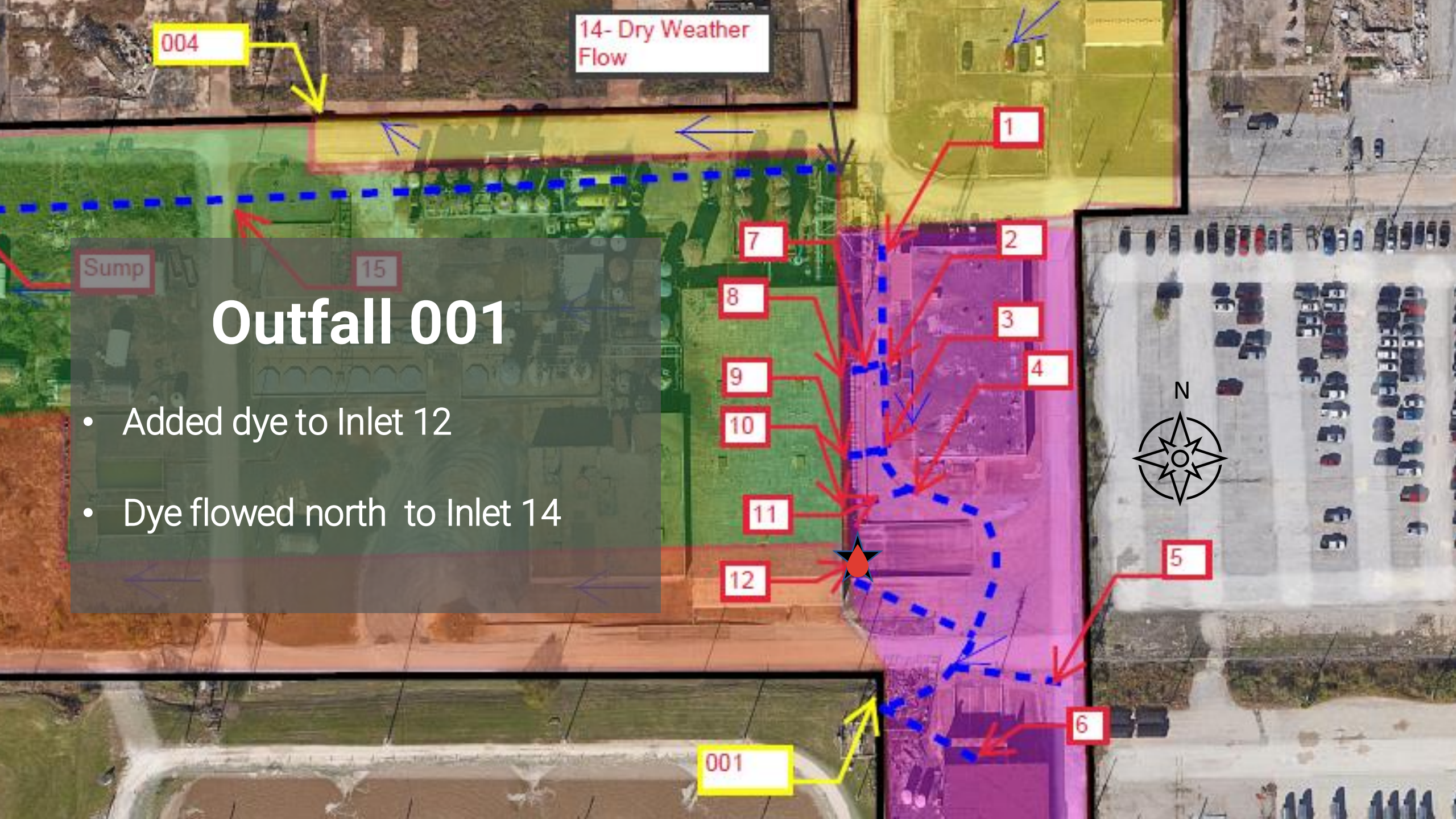
Mobile Generator

Water Pump



Outfall 001

- Dye added to inlet 1, flowed north and visible at inlet 14.
- Dye was not visible further down the system (20/30 minutes)
- Stopped to re-evaluate plan

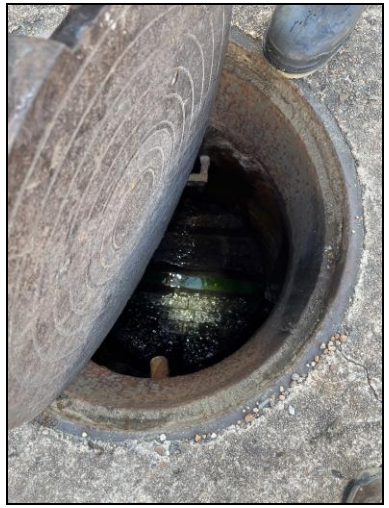


Outfall 001

- Added dye to Inlet 12
- Dye flowed north to Inlet 14

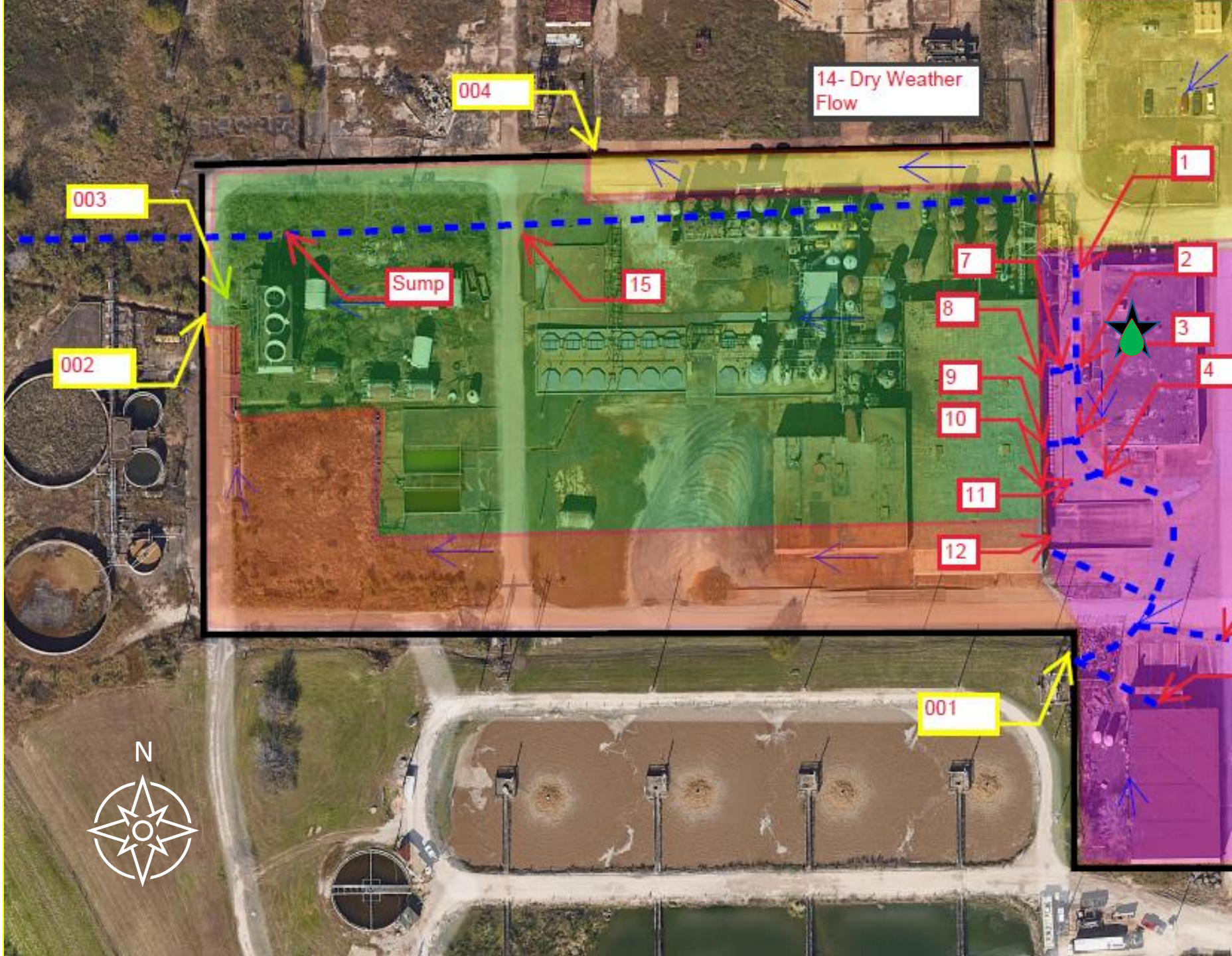
Outfall 001

- Dye added to inlet 6 (Dock)
- Anticipated discharge at Outfall 001
- Released water into other dock by Inlet 12



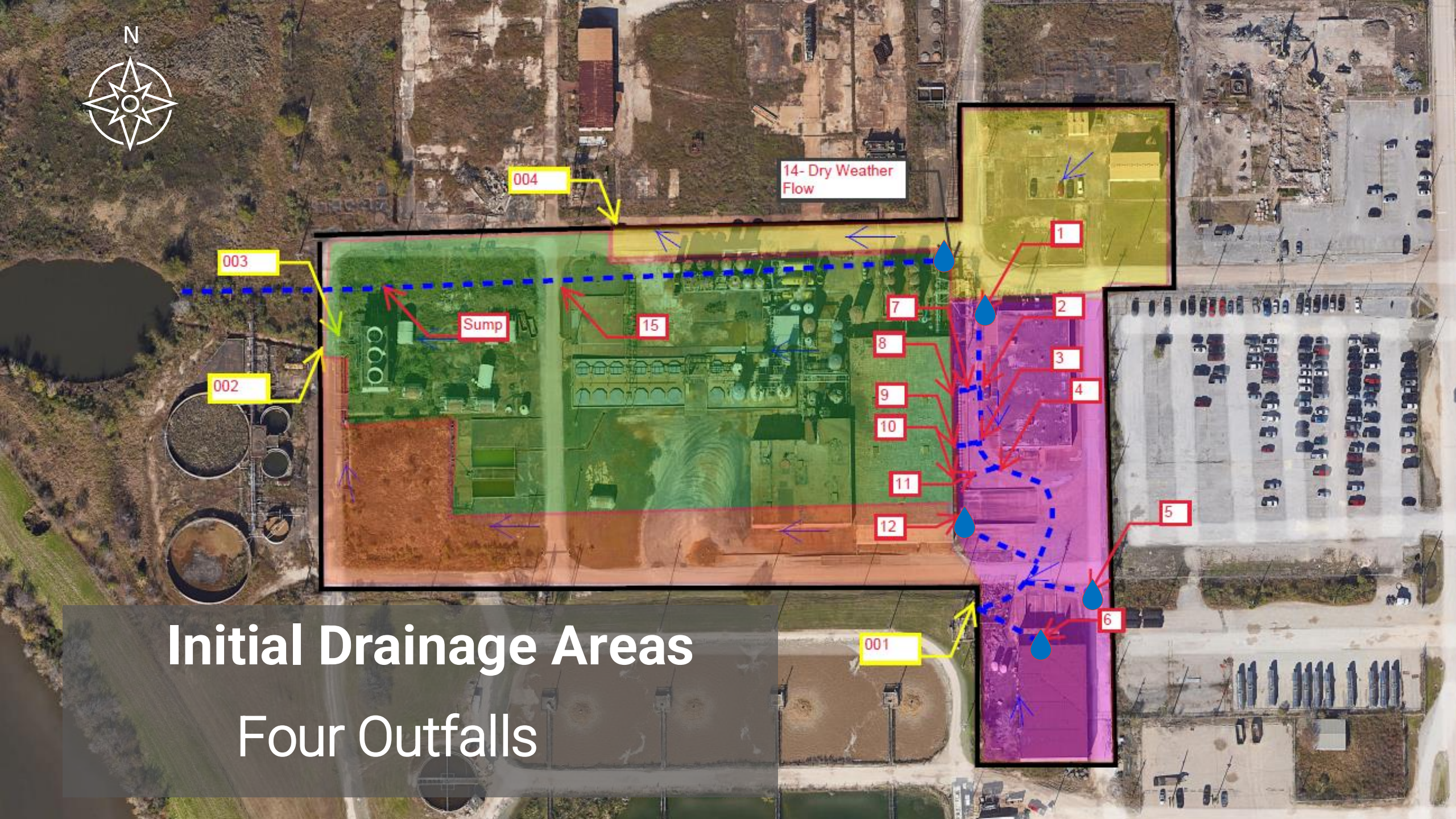
Outfall 003

- Dye added to lab sink
- Checked if site contributing to dry weather flow
- Dye was visible in Sanitary Line
- Dry weather flow determined to be from offsite source



Outfall 003

- Dye added to Inlet 14
- Dye reached sump on west side of property in approx. 1.5 hours.
- Dye observed at offsite pump station that directs water an offsite retention pond or the Bayou



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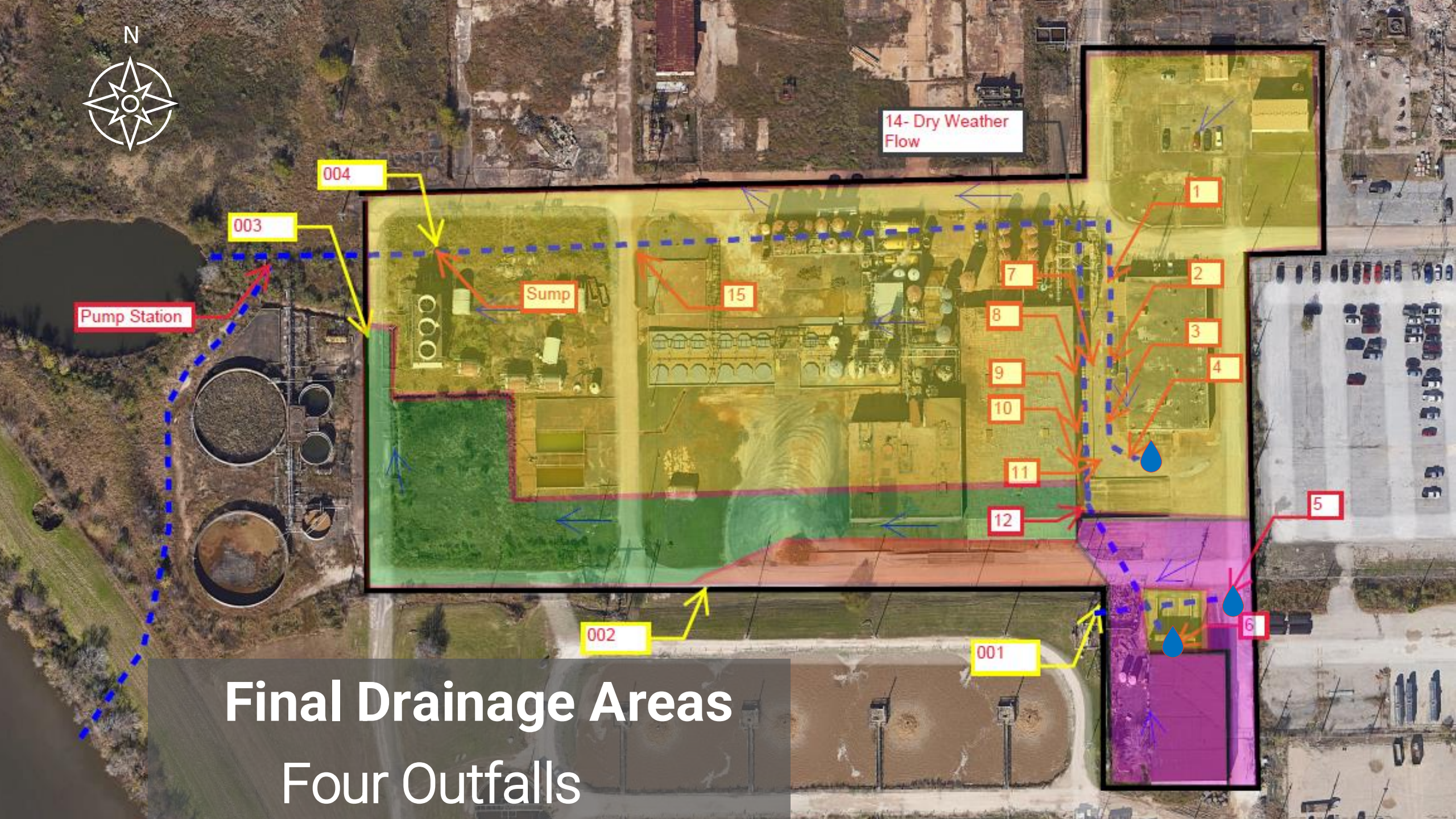
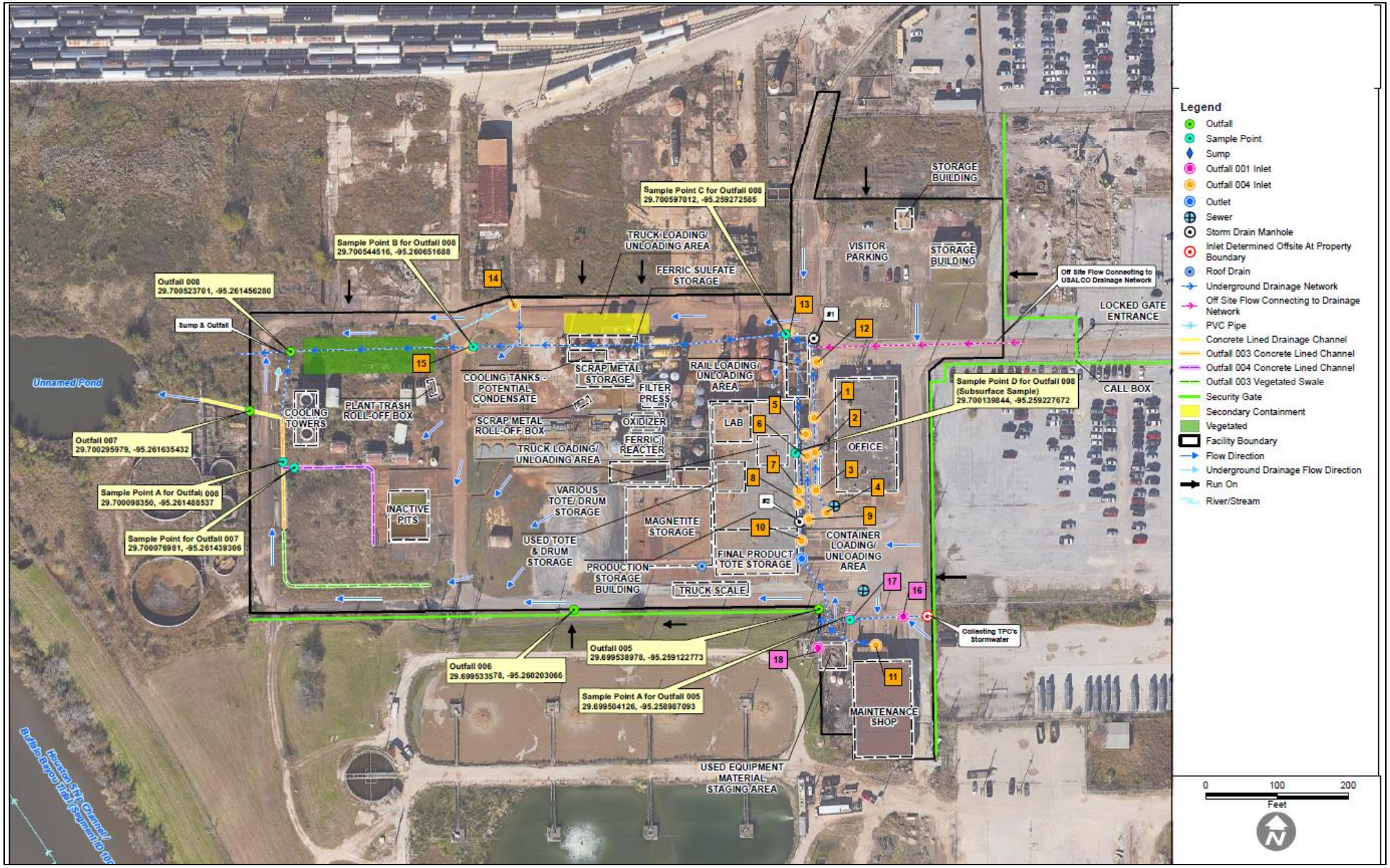


Final Drainage Areas

Four Outfalls

Updated Map

- 4 Outfalls
- 7 sample points
- Avoids commingled water
- Dry weather flow is from neighboring facility



Lessons Learned

- Old facilities are weird (Not necessarily designed with stormwater management in mind)
- Underground drainage flow direction doesn't always match surface flow direction
- Patience! Some inlets may take time
- Be prepared to modify dye testing plan

Questions?

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