



DUNDALK MARINE TERMINAL REMEDIATION

Dundalk CMAA Community Working Group

December 11, 2018

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Agenda

- Surface Cover Maintenance
- Storm Drain Rehabilitation of 15th street north and south trunk lines
- NPDES Storm Drain Monitoring
- Pre-design Groundwater and Geotechnical investigations
- Air Monitoring



COPR Fill Area and Storm Drains



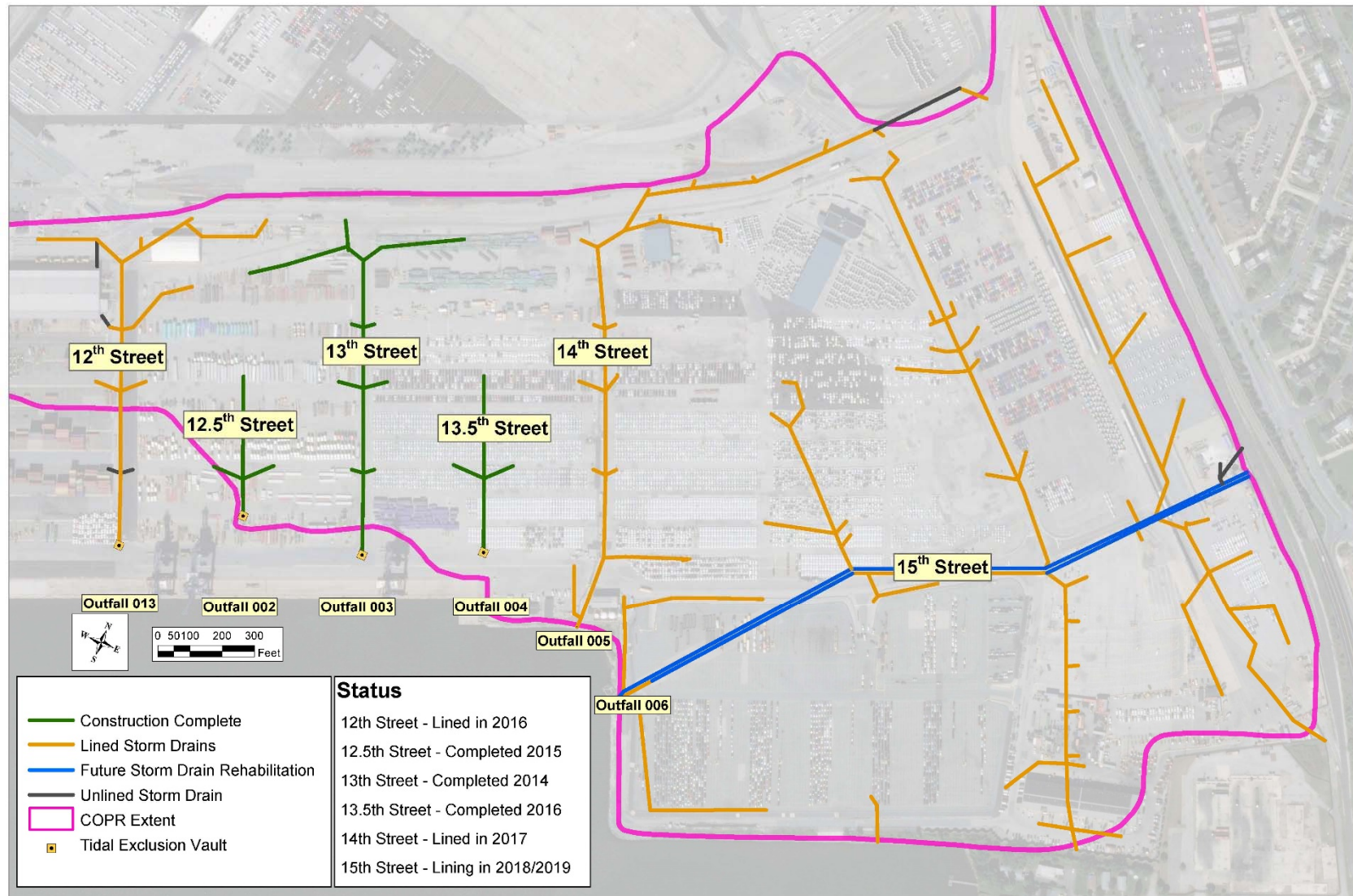
Surface Cover Maintenance

- 36.5 acres paved since 2005
- 28 miles of surface cover cracks sealed since 2005
- Surface Cover Maintenance and Repair Program effective in containing COPR at Dundalk Marine Terminal

New asphalt surface cover being prepared at location in Area 1600



Priority Storm Drain Lining Status



Storm Drain Rehabilitation to Date

- 3.2 miles of storm drains lined and extensive rehabilitation of inlet and manhole structures

125
structures
relined or
replaced
to date



*Structure grout injection
prior to relining*



Inlet relining in progress



*Transition strip from lined
pipe to inlet*

39
manholes
relined or
replaced
to date



*Areas of heavy
traffic*



NPDES Storm Drain Monitoring Schedule

OUTFALL NUMBER	MONITORING START DATE
Outfall 002 (12.5 Street Storm Drain)	Permit effective date
Outfall 004 (13.5 Street Storm Drain)	Permit effective date
Outfall 013 (12 Street Storm Drain)	November 1, 2019
Outfall 005 (14 Street Storm Drain)	November 1, 2022
Outfall 006 (15 Street Storm Drain)	November 1, 2022



NPDES Storm Drain Monitoring

- Surface Water discharge limit - 1.1 mg/L hexavalent chromium
- Lined Storm Drain Action Level - 0.55 mg/L hexavalent chromium

Outfall 12.5 St.(002)

Date	Feb-18	March-18	April-18	July-18	Oct-18
Total Cr	ND	ND	ND	ND	ND
Hexavalent Cr	ND	ND	ND	ND	ND

Outfall 13.5 St. (004)

Date	Feb-18	March-18	April-18	June-18	July-18	Oct-18
Total Cr	0.76	ND	0.30	ND	ND	ND
Hexavalent Cr	0.81	ND	0.29	ND	ND	ND



Groundwater Treatment Plant Monitoring Cyanide at Outfall (001)



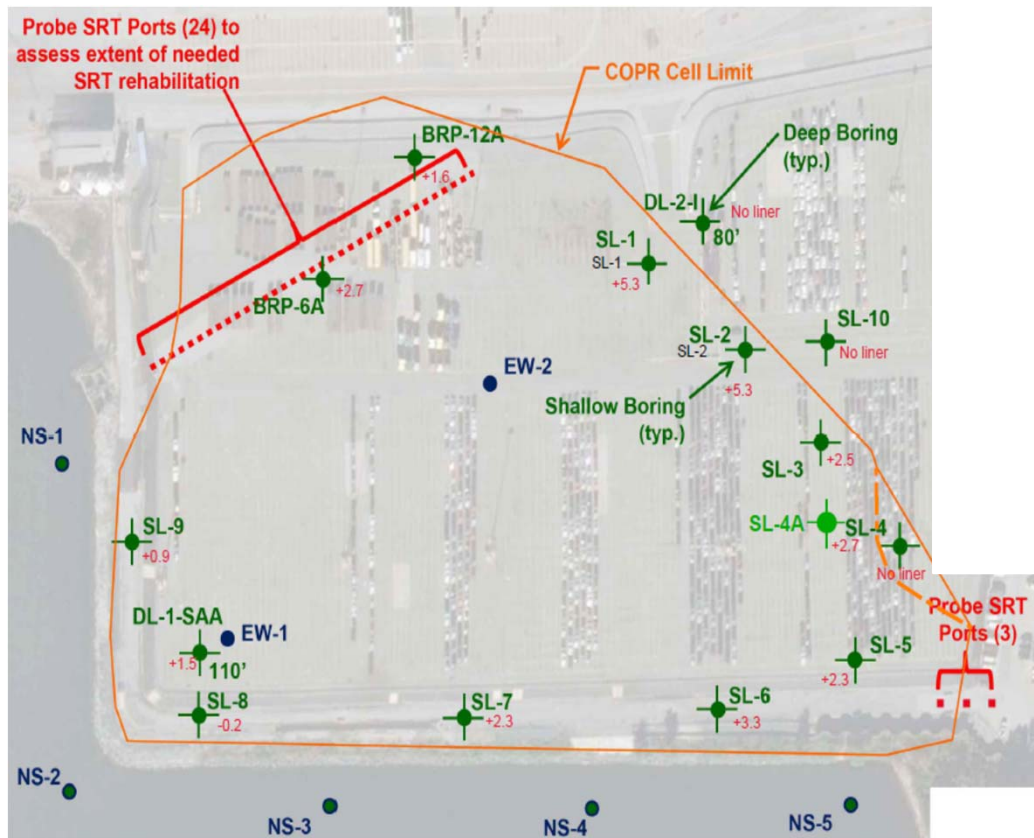
Groundwater Treatment Plant

Monitoring Cyanide at Outfall (001) Cont'd

- Cyanide (CN) effluent limit
 - 0.049 mg/L limit for Available CN
 - Monitor for Total Cyanide
 - Limit becomes effective three years after Effective Date of Permit
 - MPA has two years to determine if source of CN is from treatment plant process
 - Semi-annual reporting to MDE on investigation status



Area 1501 1602 Geotechnical Investigation



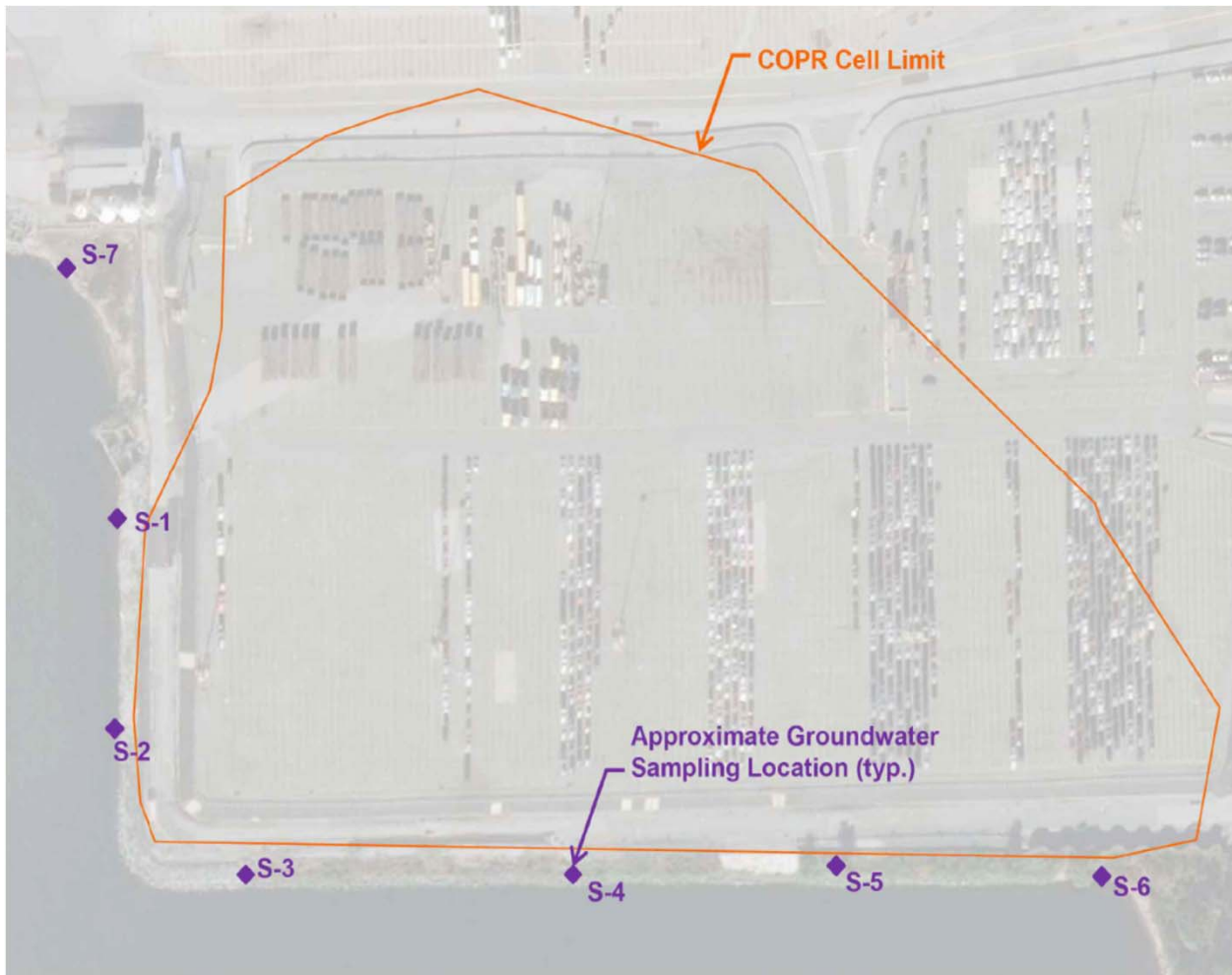
LEGEND

- DL-1-xxx**
 - Deep Land Boring for Geotechnical Testing (2)
 - "I" or "SAA" suffix indicates inclinometer or ShapeAccelArray installed in boring, respectively
- SL-1**
 - Shallow Land Boring for liner elevation verification, liner clay sampling, and/or new piezometers (10-12)
- DW-1**
 - Deep Water Boring for geotechnical testing and shoreline protection design (3)
- SW-1**
 - Shallow Water Boring for shoreline protection design (2)
- NS-1**
 - Near Shore Boring
- Shoreline Boring

- 13 shallow and 2 deep land borings completed
- 26 SRT borings completed
- 5 near shore geotechnical borings drilled during 12-2018



Area 1501/1602 Shoreline Well Points



Status:

- Completion of well point installation during 12-2018
- Monitoring data available in Q1 2019



Perimeter Air Monitoring

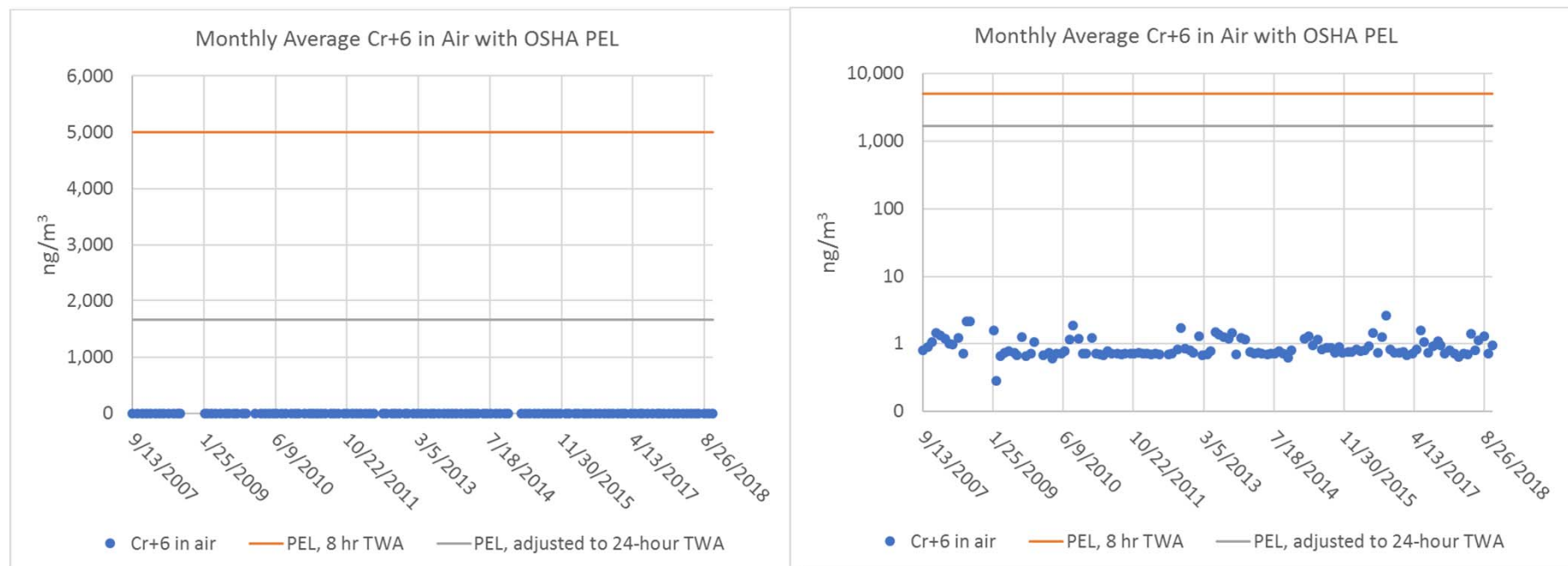


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DMT Air Monitoring

Concentrations detected in air fell well below occupational exposure limits for hexavalent chromium using the OSHA PEL of 5,000 ng/m³ based on an 8-hour Time-Weighted Average (TWA). PEL adjusted to a 24-hour TWA.



Normal scale

Log scale

1,282 air samples collected between September 2007 and October 2018 from nine sampling stations



Summary

- Continued Progress on Consent Order Requirements
- Preparing Area 1501/ 1602 Containment Remedy
- Site Containment by April 2023
 - Rehabilitation of storm drains
 - Containment system for Area 1501/1602
- Post Containment Monitoring & Maintenance
 - Surface cover Inspection and Maintenance Program
 - Storm Drain Inspection and Maintenance Program

