ADDRESSING THE IMPACTS 0F INDUSTRIAL STORMWATER COMPLIANCE

NEWEA 2018 ANNUAL CONFERENCE AND EXHIBIT

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FIRST, WHO IS RAMBOLL???

- Based in Denmark
- Merged with Environ in 2015
- 13,000 Employees in 300 Offices
  - Water
  - Environment & Health
  - Buildings
  - Energy
  - Urban Design

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OVERVIEW OF PRESENTATION

- What is Industrial Stormwater?
- How is it Regulated?
- Pollutant Types and Sources
- Compliance Steps
- Practical and Effective BMPs

INDUSTRIAL STORMWATER

Defined by the facility Standard Industrial Classification (SIC) code(s)

Typically governed by a NPDES permit (state or federal)

Requires an Industrial Stormwater Pollution Prevention Plan (SWPPP)

HOW IS INDUSTRIAL STORMWATER DISCHARGE REGULATED??

- Typically by NPDES permit for surface water or MS4 discharge
- No Exposure Exclusion
- No discharge
  - 100% containment, and/or
  - Infiltration

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INDUSTRIAL GENERAL STORM WATER PERMIT – NO EXPOSURE CERTIFICATION (NEC)

"No exposure" means no industrial materials or activities exposed to stormwater. Exempts:

- Final products
- Sealed containers
- Adequately maintained vehicles

Exempts facility from:

- SWPPP
- Sampling and monitoring

Facility still requires:

- Annual inspections, re-certifications, and fees

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TYPES AND SOURCES OF INDUSTRIAL POLLUTANTS

BONEYARDS

WASTE MATERIALS

EXPOSED RAW MATERIALS

EXPOSED FINISHED PRODUCT

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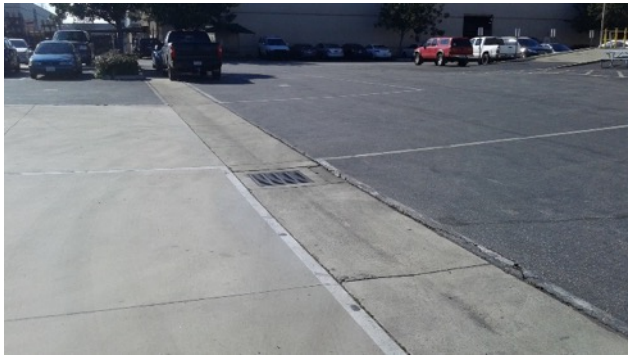
TYPES AND SOURCES OF NON-INDUSTRIAL POLLUTANTS

GALVANIZED ROOF



PARKING AREAS

LANDSCAPE EROSION

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IDENTIFYING SOURCES OF POLLUTANTS

OBVIOUS!!!!!

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IDENTIFYING SOURCES OF POLLUTANTS

BUT NOT SO OBVIOUS

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SO I HAVE AN INDUSTRIAL GENERAL STORM WATER PERMIT AND MY SWPPP, I'M IN COMPLIANCE, RIGHT?

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STORMWATER

COMPLIANCE

ONCE UPON A TIME IN THE NOT-TOO-DISTANT PAST

SWPPPs were stagnant documents because there was no analytical monitoring or effluent standards, but

- *The EPA and many states have pollutant specific* "benchmark" effluent standards in their general permit
- Benchmark effluent standards are not effluent limits, but….
- If you exceed benchmarks you must revise BMPs to address

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INDUSTRIAL STORMWATER

EXAMPLE OF EPA 2015 BENCHMARK CONCENTRATIONS

Subsector N1. Scrap Recycling and Waste Recycling Facilities	Benchmark Monitoring Concentration (mg/l)
Aluminum	0.75
Copper	0.006 (FW) 0.005 (SW)
Lead	0.023 (FW) 0.210 (SW)
Iron	1.0
Zinc	0.050 (FW) 0.090 (SW)
TSS	100
COD	120

EPA Drinking Water Standards	Primary MCL Concentration (mg/l)
Aluminum	None
Copper	1.3
Lead	0.015
Iron	0.3 (sec)
Zinc	5.0 (sec)
TSS	None
COD	None

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INDUSTRIAL GENERAL STORM WATER PERMIT BENCHMARK SAMPLING

- Parameters based on SIC code, impaired constituents, TMDLs
- Typically quarterly sampling and reporting
- Exceedances occur when:
  - Average of all samples in reporting year > benchmark

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SAMPLING COLLECTION IS CRITICAL IN COMPLIANCE

Representative Stormwater:

- No foreign settled sediment
- No floating debris
- Collect before comingling with offsite stormwater

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SAMPLING COLLECTION IS CRITICAL IN COMPLIANCE

Samplers need training. Foreign debris in your sample can ruin your results!!

SAMPLING THE OUTFALLS

Some outfalls are obvious and sample collection is straightforward

But some are not

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TRACKING PRECIPITATION FOR A QUALIFYING STORM EVENT

Invest in your own rain gauge, or track on a weather website:

Hourly Weather History & Observations

Time [EDT]	Temp.	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust Speed	Precip	Events	Conditions
12:53 AM	75.0 °F	63.0 °F	66%	30.03 in	10.0 mi	East	4.6 mph	-	N/A		Clear
1:53 AM	75.0 °F	64.0 °F	69%	30.02 in	10.0 mi	SE	5.8 mph	-	N/A		Clear
2:53 AM	73.9 °F	64.9 °F	73%	30.01 in	10.0 mi	Variable	4.6 mph	-	N/A		Scattered Clouds
3:53 AM	73.9 °F	66.0 °F	76%	30.00 in	10.0 mi	SE	3.5 mph	-	N/A		Overcast
4:53 AM	73.9 °F	66.0 °F	76%	29.99 in	10.0 mi	Calm	Calm	-	N/A		Overcast
5:53 AM	73.9 °F	66.0 °F	76%	29.99 in	10.0 mi	Calm	Calm	-	N/A		Overcast
6:53 AM	72.0 °F	66.9 °F	84%	30.00 in	10.0 mi	Calm	Calm	-	0.00 in	Rain	Light Rain
7:53 AM	72.0 °F	68.0 °F	87%	30.01 in	10.0 mi	Calm	Calm	-	0.00 in		Mostly Cloudy
8:53 AM	73.0 °F	68.0 °F	84%	30.01 in	10.0 mi	Calm	Calm	-	N/A		Overcast
9:43 AM	72.0 °F	69.1 °F	91%	30.07 in	10.0 mi	Calm	Calm	-	0.12 in	Rain	Heavy Rain
9:53 AM	72.0 °F	70.0 °F	93%	30.03 in	10.0 mi	Calm	Calm	-	0.14 in	Rain	Rain
10:40 AM	72.0 °F	70.0 °F	93%	30.08 in	10.0 mi	ESE	3.5 mph	-	0.13 in	Rain	Light Rain
10:44 AM	73.0 °F	71.1 °F	93%	30.07 in	10.0 mi	Calm	Calm	-	0.13 in	Rain	Light Rain
10:53 AM	73.0 °F	70.0 °F	90%	30.04 in	10.0 mi	ESE	3.5 mph	-	0.13 in	Rain	Light Rain
11:04 AM	73.0 °F	71.1 °F	93%	30.08 in	10.0 mi	Variable	3.5 mph	-	0.00 in		Overcast
11:53 AM	73.0 °F	71.1 °F	93%	30.03 in	10.0 mi	ESE	5.8 mph	-	0.03 in	Rain	Light Rain
12:00 PM	73.0 °F	71.1 °F	93%	30.07 in	10.0 mi	Variable	3.5 mph	-	0.01 in	Rain	Light Rain
12:36 PM	73.0 °F	71.1 °F	93%	30.07 in	5.0 mi	SSE	4.6 mph	-	0.01 in		Overcast
12:53 PM	73.0 °F	71.1 °F	93%	30.03 in	3.0 mi	Calm	Calm	-	0.05 in	Rain	Light Rain
1:53 PM	75.0 °F	71.1 °F	87%	30.00 in	10.0 mi	SE	6.9 mph	-	0.02 in		Overcast
2:53 PM	75.0 °F	71.1 °F	87%	29.98 in	10.0 mi	Variable	3.5 mph	-	N/A		Overcast
3:19 PM	75.0 °F	70.0 °F	84%	30.01 in	10.0 mi	SE	4.6 mph	-	N/A	Thunderstorm	Overcast

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SELECTING PRACTICAL AND EFFECTIVE BMPS

Benchmarks have been exceeded, but we don't need to go right to this

Take a look at the SWPPP best management practices (BMPs)

- Typically developed around what the facility HAS, not necessarily what the facility NEEDS
- First improve the simple stuff

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REVIEW THE EXISTING BMPS

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ADVANCED BMPS – FIRST LEVEL

If the simple stuff doesn't get you where you where you need to be, continue it, it helps. But you can also consider these common BMPs:

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MORE ADVANCED BMPS – FIRST LEVEL

But you have to maintain them

MORE ADVANCED BMPS – FIRST LEVEL

Advantages

Typically low capital costs

Visually easy to assess performance

Easy access for replacement/repair

Disadvantages

May be easily displaced or destroyed

Performance can be easily compromised

Do not effectively remove dissolved pollutants – regardless of what vendors tell you.

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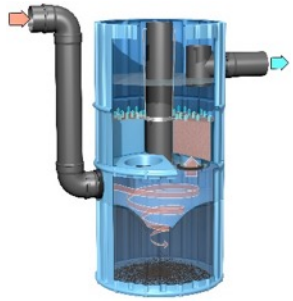
ADVANCED BMPS – SECOND LEVEL

If the first level of advanced BMPs still don’t get you where you where you need to be, continue it, it helps. But these type of advanced BMPs may be necessary :



MORE ADVANCED BMPS – SECOND LEVEL

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MORE ADVANCED BMPS – SECOND LEVEL

Advantages

- Designed specifically for the facility's pollutants and flow
- Higher consistent performance
- Long operating life

Disadvantages

- Expensive to implement and operate
- Typically require facility land to be set aside
- Long periods of dormancy can effect performance.

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THANK YOU

QUESTIONS???

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