



5<sup>th</sup> in US Tonnage 130 million Tons 2015  
86% Petroleum/Refined/Chemical  
40 % Export  
Bulk Commodities, Grain, Minerals  
Break bulk – Wind Power



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# BALLAST WATER CONSIDERATIONS

## PRESENTATION TO GULF AND SOUTHEAST ATLANTIC REGIONAL PANEL

### APRIL 5, 2016 ORANGE BEACH, ALABAMA

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## Disclaimer

The contents reflect the views of the presenter. The contents do not necessarily reflect the official view or policies of the Port of Corpus Christi Authority or any other Port Administration. This report does not constitute a standard, specification, or regulation and is not intended for construction, bidding, or permit purposes.



Purpose: Provide broad overview on topics related to ballast water, treatment technology, standards and implementation discussed during recent 3<sup>rd</sup> Ballast Water Management Summit, February 9-11, 2016, Long Beach, California.

Agenda and information available at:

<http://bit.ly/PreSummit-Ballast>

<http://bit.ly/MainSummit-Ballast>





# Who Participated?

- Regulators, Ship Owners, Charters/Operators, shipbuilders, water treatment specialists, marine equipment manufactures and suppliers, port authorities, shipping/maritime associations, NGOs, Research, Academia

Container, Liquid and Dry Bulk, Cruise - those highly capitalized and not those not so

A highly environmentally conscientious industry with those seeking to be in compliance and those who seek beyond compliance



PDC Invited Summit Participant and Speaker

PANEL: PORT PERSPECTIVES

- Q&A (various)

## **Summit Topics that May be of Interest to GSARP**

- Ballast Water Treatment Technology
- IMO versus US “Type” Approvals
- Interim/Alternate Management: Practices - Administrative - Regulatory
- Vessel General Permit Suit in 2<sup>nd</sup> District Court of Appeals
- California Assembly and Delay of CA State BWTPS Standards
- Hull/Biofouling



## Complex Situation - Primary dilemma is linked to:

- Regulatory not technology
  - Resulting from of the lack of regulatory harmonization
  - Lack of US Type Approved BWMS
  - Perfect can be the enemy progress
- 
- Performance standards
  - Implementation schedules
  - Approval of treatment systems
  - Planning for ship building/retrofits
  - Dry dock availability
  - \$\$\$ for IMO “Type” Approved systems to meet IMO but not US and functionally /potentially obsolete upon installation. And “now” only effects new builds



## Technology Development Focus Beyond Interim BWE

Basically Two Approaches - Separation and/or Disinfection

- **Ship Board**     **99.0 %**
- **Landside**        **1.0 %**

Availability of Treatment Systems

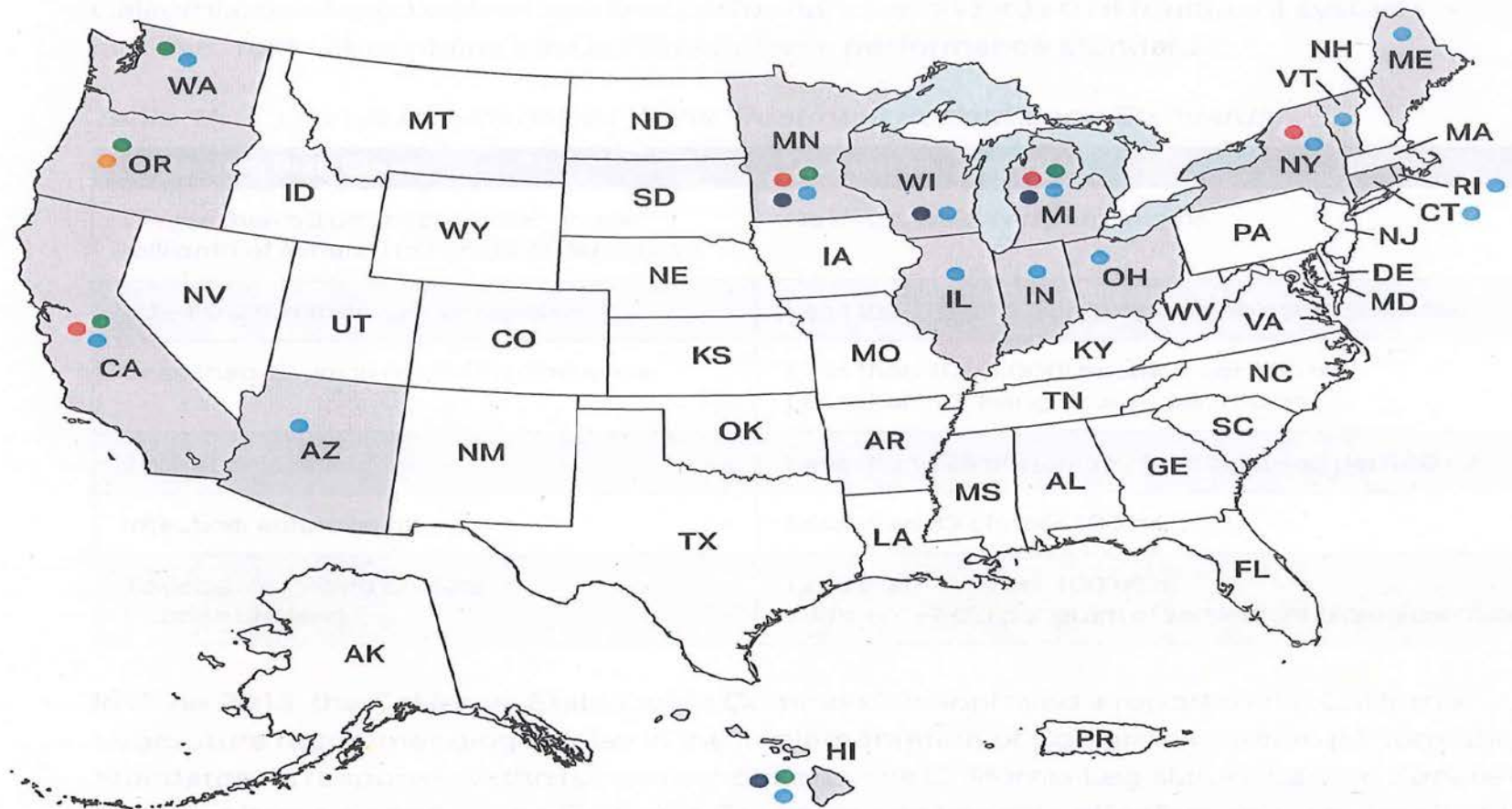
- IMO –58 systems approved
- USCG –No systems approved (as of March 2016),  
[www.uscg.mil/hq/cg5/cg5214/eqpt\\_approval.asp](http://www.uscg.mil/hq/cg5/cg5214/eqpt_approval.asp)

Note: EPA does not grant system approvals





# 16 INDIVIDUAL US STATE REQUIREMENTS



- State with specific ballast water requirements in 2013 VGP (i.e., CWS 401 Certification or state law)
- State requires separate permit
- State requiring additional reporting directly to state
- State requiring live organism monitoring
- State-specific ballast water requirements – not in 2013 VGP CWA 401 Certification

# BWT Technology (BWTT) IMO and US “Type” Approvals

## IMO

- The IMO BWT standard (BWTS) known for nearly a decade
- IMO BWTS not yet ratified/come into force (close...**BUT**.....)
- There is no “IMO Type” Approval
- Each signatory Nation/State may establish approval process (and they do)
- Many and various IMO BWT technologies approved and in use
- If IMO comes into force – US Laws & regulation will not change

## US “Type” BWTT Approval

- US BWTS mirrors IMO with key differences in endpoint and compliance verifications methods
- IMO “viable/unviable” versus US “live/dead”
- IMO has no prescribed test method (e.g. MPN) versus US does (vital stain)
- By United States Coast Guard
- Rigorous testing protocols
- **As of March 2016 no US “Type” Approved BWTT**



# US Interim Management until IMO Ratified and USCG TYPE APPROVAL : BALLAST WATER EXCHANGE

## **Ballast Water: Hard Times Await Dockyards & Classification Societies**

Dockyard and classification societies are likely to encounter a bottleneck in 2020 as numerous ship owners have decided to complete their International Oil Pollution Prevention Renewal Survey due to uncertainties on Ballast Water Management Convention of the International Maritime Organization (IMO), the United Kingdom (UK) Chamber of Shipping has said. *In this way, ship owners would conduct the IOPP survey ahead of the original survey scheduled to postpone the installation of treatment systems on their vessels as much as possible once the convention is in force* (emphasis mine). [Leadership](#)

However, the convention still has many amendments that need to be agreed upon, prior to its entry into force, which are expected to near finalization during the two IMO meetings in April and October this year. Besides the IMO's pending legislation, *the uncertainty is also related to the United States' position which could define the future of the effective implementation of the convention* (emphasis mine).

**“The lack of the United States Coast Guard (USCG) type approval systems is a major obstacle to decision making for the industry and even a potential game-changer. And if that is not enough, the US veto on the “grandfathering clause” makes it extremely difficult to see light at the end of the tunnel,” the UK Chamber of Shipping added.**





# US Interim Management- ALTERNATIVE MANAGEMENT SYSTEMS (AMS)

## Until US BWTS Approvals - AMS

- Bridging strategy (regulatory/administrative approaches). USCG temporarily accepting AMS where vessels with solutions already approved by another flag state [foreign] can discharge ballast in US waters.
- Use for 5 years from date vessel would otherwise be required to comply with USCG standards
- Provide time for BWMS vendors or manufacturers time to obtain USCG Type approval

## AMS Options to the installation of BWMS (e.g. foreign type approved BWMS)

- Transfer to onshore treatment facility or another vessel for purposes of treatment
- Use of public water
- Retention of ballast
- No discharge of ballast water into US waters

**[BUT....]**



## Shore/Barge-Based BW Treatment

Feasibility for widespread use?

- A *possible* option for fixed, same vessel, regional routes - each vessel needs refit
  - Feasibility studies at U.S. ports indicate *not feasible or practicable compared to shipboard BWT*
  - Commission funded study for California ports (See California AB 1312)
  - U.S. EPA review for 2018 VGP (2<sup>nd</sup> Circuit Decision)
- Pilot facilities
  - Engage ports/treatment vendors in discussion

PDC/Port perspective ----- if a vendor believes it has a business case to justify their investment decision .... and they can get permits and licenses to operate in the Port ... see Panel Q&A.



# BUT.....

Having said all THAT.....

Briefly discuss AMS and why BWE prevails for near term future

Issue: AMS applicable if IMO ratified AND no US Type approval. NO IMO-NO US Type approval = BWE





## **Court - Ballast Water Management**

The US Court of Appeals for the Second Circuit issued an amended version of its October 5, 2015 decision regarding the challenge to the Environmental Protection Agency (EPA) ballast water management provisions of its Vessel General Permit (VGP) program. The result remains the same, with those provisions deemed arbitrary and capricious, but allowed to remain in effect until new provisions can be promulgated. Frustratingly, the amended decision does not indicate what changes have been made in the text. NRDC v EPA, No. 13-1745(L) (2nd Circuit, December 18, 2015). See it here: [Appeal Notice](#) (Source: Bryant's Maritime Consulting)

NOTE: VGP renewal every 5 years – Next is 2018 and the opportunity to promulgate “new provisions”.



## What's at issue?

- That EPA elected to adopt the IMO standard w/o justification
- That EPA did not include onshore treatments systems as “available” technology

PDC Perspective: In context of CWA “available” [technology] does not have to be available in any commercial or practicable sense.

PDC sense of EPA's take:

- We did analysis but did not clearly provide in the admin record
- EPA in court records stated: “proceeded methodically and reasonably” toward its conclusions, rather than focus on methods “destined not to play a role at the present time in redressing aquatic nuisance species in ballast water”

VGP Per Ballast Water

- EPA stated position: A “low enforcement priority”



# CALIFORNIA BWSPS IMPLEMENTATION DELAYED

## 2015 California Assembly Bill 1312

- Delays Implementation of CA Ballast Water Discharge Performance Standards (BWDPs) to 2020 and final “no detectable living organism” standard till 2030.
- **WHY? Lack of BWT equipment that could met CA’s standard**
- Next review of available technologies due to CA Legislature on July 1, 2018

California Coastal Commission Representative:

- “since BWE...no new introductions [since 2006] into San Francisco Bay...”;  
“...High industry compliance with [CA] BW regulations...” [Good News]

Note: Similar BWE compliance rates for vessels calling GoM/SE Atlantic. Also see recent reporting that no new confirmed AIS in Great Lakes since 2006. [More Good News ]





# MISCONCEPTION: BW TREATMENT EFFICACY NOT STRINGENT ENOUGH Perspective

## Research and Environmental Practice Suggest...

- [US] BWTS are overly protective

“The current biological efficacy of ballast water treatment outpaces the other well documented environmental quality success stories by 2-4 orders of magnitude (e.g. catalytic converters -nitrogen oxide/Vehicle Smog, stack gas SO<sub>2</sub> and NO<sub>x</sub> scrubbers/Acid Rain, fluorocarbons/The Ozone Layer). A 1,000,000x reduction in zooplankton concentrations is not unusual?” Citation: Nick Welschmeyer, Moss Landing Marine Laboratories, CA (CSU) Presented: Feb 2, 2016; ETV Tech Panel, Baltimore MD, and Feb 9-11 2016 3<sup>rd</sup> BWM Summit, Long Beach, CA



## Ship Hull/Biofouling - Another Concept Elephant in the Room?

- IMO, Administration States, US, (and several US States) BW/NIS regulation and/or policy address
- Vessels required to remove **regularly\*** and submit Hull Husbandry Reporting Form once each calendar year

\***Regular** removal defined as being no longer than one of the following:

- Expiration date of the vessel's full term Safety Construction certificate
- Expiration date (or extension) of vessel USCG certificate of inspection
- 60 months (5 years) since vessel's most recent out-of water dry docking



## Ship Hull Fouling/Biofouling, cont.

In “the past” - considered a significant source. Now, in addition to cleaning, potential vector mitigated by:

- Modern coatings
- Modern Hull Designs
- Regular Dry dock Maintenance
- In-Water Hull Cleaning

### Areas of Interest

- In-Water Hull Cleaning
- Sea Chests
- Bow Thrusters
- Like spaces within hull not subjected to hydrodynamic forces/scour





**PERSPECTIVE**

**PERFECT CAN BE THE ENEMY OF PROGRESS**





# THANK YOU

QUESTIONS • COMMENTS?

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# Differing Standards + Differing Compliance Deadlines = COMPLEX SITUATION

Standards and Compliance deadlines differ between IMO, USCG BW Regulation, US EPA Vessel General Permit Regulation, and 9 different US State Standards

## IMO

- New Builds –Construction on or after entry into force
- Existing Vessels -First IOPP renewal survey

## USCG/EPA

BW Capacity	New vessels constructed on or after	All other vessels first dry dock after
< 1500 MT	Dec. 1, 2013	2016
1500 –5000 MT	Dec. 1, 2013	2014
> 5000 MT	Dec. 1, 2013	2016

## California Interim Standards as Revised in 2015 by California Assembly Bill 1312

- New Builds –Construction on or after January 1, 2020
- Existing Vessels –First scheduled dry dock on or after January 1, 2020

Note: Final CA standard schedule for implementation on January 1, 2030

