

## United States of America Department of Homeland Security United States Coast Guard

Certification Date: 25 Sep 2020 Expiration Date: 25 Sep 2025

of Inchection

For ships on international voyages this certificate fulfills the requirements of SOLAS 74 as amended, regulation V/14, for a SAFE MANNING DOCUMENT

| Vessel Name  | Official Numb  | er                        | iMO Numb                  | per  | Call Sign                     | Service                          |                                   |                |
|--|--|---------------------------|---------------------------|--|-------------------------------|----------------------------------|-----------------------------------|----------------|
| FMT 5054   | 1266913  |                           |                           |  |                               | Tank B                           | arge                              |                |
| Hailing Port NEW ORLEANS, LA   |  | Material                  | Horse                     | power  | Propulsion                    |                                  |                                   |                |
| ,  | Ste  | el                        |                           |  |                               |                                  |                                   |                |
| UNITED STATES  |  |                           |                           |  |                               |                                  |                                   |                |
| Place Built  | Delivery   | Date Kee                  | el Laid Date              | Gross Tons   | Net Tons                      | DWT                              | Length                            |                |
| JEFFERSONVILLE, IN   | 20Apr  | 2016 07                   | 'Nov2015                  | R-1619   | R-1619                        |                                  | R-297.5<br>I-0                    |                |
| UNITED STATES  |  |                           |                           |  |                               |                                  | e e                               |                |
| Owner<br>ST TAMMANY PARISH<br>21489 KOOP DRIVE, SU<br>MANDEVILLE, LA 7047<br>UNITED STATES | JITE 7   | RICT                      | 2360<br>MAN               | or<br>RIDA MARI<br>FIFTH STI<br>IDEVILLE,<br>TED STATE | REET<br>LA 70741              |                                  |                                   |                |
| This vessel must be man 0 Certified Lifeboatmen,   | ned with the following lid<br>0 Certified Tankermen, | ensed and<br>0 HSC Ty     | d unlicense<br>pe Rating, | d Personne<br>and 0 GMD                                | l. Included in SS Operators   | which there m                    | ust be                            |                |
| 0 Masters  | 0 Licensed Mates                                     | 0 Chief Eng               |                           |  | Dilers                        |                                  |                                   |                |
| 0 Chief Mates  | 0 First Class Pilots                                 | 0 First Assi              | stant Enginee             | rs   |                               |                                  |                                   |                |
| 0 Second Mates   | 0 Radio Officers                                     | 0 Second A                | ssistant Engi             | neers  |                               |                                  |                                   |                |
| 0 Third Mates  | 0 Able Seamen  | 0 Third Ass               | istant Engine             | ers  |                               |                                  |                                   |                |
| 0 Master First Class Pilot   | 0 Ordinary Seamen                                    | 0 Licensed                | Engineers                 |  |                               |                                  |                                   |                |
| 0 Mate First Class Pilots  | 0 Deckhands  |                           | Member Engi               |  |                               |                                  |                                   |                |
| In addition, this vessel ma<br>Persons allowed: 0  | ay carry 0 Passengers,                               | Other Pe                  | ersons in cr              | ew, 0 Perso  | ons in addition               | to crew, and r                   | no Others. Tota                   | al<br>         |
| Route Permitted And (  | Conditions Of Operation                              | n:                        |                           |  |                               |                                  |                                   |                |
| Lakes, Bays, an  | d Sounds plus Li                                     | mited C                   | oastwis                   | e  |                               |                                  | *                                 |                |
| Unmanned fair weather<br>Harbor, IN may be cons<br>from shore between St                   | sidered an extension                                 | of Rivers                 | routes.                   | Unmanned   | fair weather                  | voyages les:                     | s than 20 mil                     | .es            |
| This vessel has been (2). If the vessel is inspected using salt writing as soon as the     | operated in salt wat<br>water intervals per 4        | er more t<br>6 CFR 31.    | than 6 mon                | ths in any   | 12 month pe                   | riod, the ve                     | ssel must be                      | a)             |
| ***SEE NEXT PAGE   |  |                           |                           |  |                               |                                  |                                   |                |
| With this Inspection for C<br>Inspection, Sector New C<br>the rules and regulations        | Orleans certified the ves                            | complete<br>sel, in all r | d at New O<br>espects, is | rleans, LA,<br>in conformi                             | UNITED STA<br>ty with the app | TES, the Offic<br>licable vessel | er in Charge, I<br>inspection law | Marir<br>s and |
|  | Periodic/Re-Inspection                               |                           | 1                         | his certific   | ite issued by:                | 1///                             |                                   |                |
| Date Zone  | e A/P/R  | Signature                 |                           | M.N.   | COCHRANC                      | MMANDER                          | , by direction                    |                |
|  |  |                           |                           | fficer in Charge, I                                    |                               | Now Orloans                      |                                   |                |
|  |  |                           | -                         |  | Sector                        | New Orleans                      |                                   |                |
|  |  |                           | - In                      | spection Zone  |                               |                                  |                                   |                |



## United States of America Department of Homeland Security United States Coast Guard

25 Sep 2020 Certification Date: 25 Sep 2025 **Expiration Date:** 

Certificate of Inspection

Vessel Name: FMT 5054

Thermal fluid heater may only be operated when carrying grade "E" cargoes. The vessel is inspected and approved for the carriage of grade "E" combustible liquids when transported in molten form at elevated temperatures.

### ---Hull Exams---

Exam Type

Next Exam

Last Exam

Prior Exam

DryDock

30Sep2030

23Sep2020

20Apr2016

Internal Structure

30Sep2025

23Sep2020

20Apr2016

--- Liquid/Gas/Solid Cargo Authority/Conditions ---

Authorization:

FLAMMABLE / COMBUSTIBLE LIQUIDS IN 46 CFR TABLE 30.25-1 AND SPECIFIED HAZARDOUS

CARGOES

**Total Capacity** 

Units

Highest Grade Type Part151 Regulated Part153 Regulated Part154 Regulated

28036

Barrels

Yes

No

\*Hazardous Bulk Solids Authority\*

Not Authorized

### \*Loading Constraints - Structural\*

| Tank Location Description | Max Cargo Weight per Tank (short tons) | Maximum Density (lbs/gal) |
|---------------------------|--|---------------------------|
| 1 P/S                     | 791                                    | 13.58                     |
| 2 P/S                     | 852                                    | 13.58                     |
| 3 P/S                     | 684                                    | 13.58                     |

### \*Loading Constraints - Stability\*

| Hull Type | Maximum Load (short tons) | Maximum Draft<br>(ft/in) | Max Density<br>(lbs/gal) | Route Description |
|-----------|---------------------------|--------------------------|--------------------------|-------------------|
| HI        | 4432                      | 11ft 6in                 | 13.58                    | R, LBS, LC 0-20   |
| II.       | 3523                      | 9ft 8in                  | 13.58                    | R, LBS LC 0-20    |

### \*Conditions Of Carriage\*

Only those cargoes named in the vessel's Cargo Authority Attachment (CAA), serial #C1-1602911 dated August 10, 2016, may be carried, and then only in the tanks indicated. When the vessel is carrying cargoes containing greater than 0.5% benzene, the person in charge is responsible for ensuring the provisions of 46 US Code of Federal Regulations Part 197, Subpart C are applied.

Per 46 CFR 150.130, the Person In Charge of the vessel is responsible for ensuring that the compatibility requirements of 46 CFR 150 are met. Cargoes must be checked for compatibility using the figures, tables, and appendices of 46 CFR 150 in conjunction with the reactive group numbers from the "Compat Group No" column listed in the vessel's Cargo Authority Attachment.

The maximum design density of cargo which may be filled to the tank top is 8.74 lbs/gal. Cargoes with higher densities, up to 13.58 lbs/gal, may be carried as slack loads, but shall not exceed the tank weight limits as listed.

Per 46 CFR 151.10-15(c)(2) the max. tank weights listed below reflect uniform (within 5%) loading at the deepest draft allowed. When carrying Subchapter O cargoes at shallower drafts, the barge(s) should always be loaded uniformly.



## United States of America Department of Homeland Security United States Coast Guard

Certification Date: 25 Sep 2020 Expiration Date: 25 Sep 2025

## Certificate of Inspection

Vessel Name: FMT 5054

### \*VAPOR CONTROL AUTHORIZATION\*

In accordance with 46 CFR 39, excluding 46 CFR 39.4000, this vessel's vapor control system has been inspected to the plans approved by Marine Safety Center letter Serial C1-1504812 dated November 13, 2015, and the list of authorized cargoes on the CAA, Serial C1-1602911 dated August 10, 2016, and found acceptable for collection of bulk liquid cargo vapors annotated with "Yes" in the CAA's VCS column.

In accordance with 46 CFR Part 39.1017 and 39.5000(e) this vessel's VCS has been evaluated and approved for multi-breasted tandem loading with other vessels specifically approved to tandem load with this vessel. The MSC approval letter/s must be available at the OCMI's request.

## --- Inspection Status ---

## \*Cargo Tanks\*

| -1 | -                      |               |           |            |               |      |      |
|----|------------------------|---------------|-----------|------------|---------------|------|------|
| ١  |                        | Internal Exam | )         |            | External Exar | n    |      |
|    | Tank Id                | Previous      | Last      | Next       | Previous      | Last | Next |
|    | 1 P/S                  | -             | 20Apr2016 | 20Apr2026  | -             | -    | -    |
|    | 2 P/S                  | -             | 20Apr2016 | 20Apr2026  | -             | ×    | -    |
|    | 3 P/S                  | -             | 20Apr2016 | 20Apr2026  | -             | -    | -    |
|    |                        |               |           | Hydro Test |               |      |      |
|    | Tank ld                | Safety Valves | S         | Previous   | Last          | Next |      |
|    | 1 P/S                  | -             |           | - 10       | -             | =    |      |
|    | 2 P/S                  | -             |           | -          | -             | -    |      |
|    | 3 P/S                  | -             |           | -          | -             | -    |      |
|    | *Boilers/Steam Pining* |               |           | Σ.         |               |      |      |

### \*Boilers/Steam Piping\*

Maximum Steam Pressure Allowed: 50

### \*Safety Valves\*

Serial Number Location

Bench Test Last

Next

SC59391

Machinery Deck - TFH

23Mar2016 25Sep2020

25Sep2023

## --- Conditional Portable Fire Extinguisher Requirements---

Required Only During Transfer of Cargo or Operation of Barge Machinery

## --- Fire Fighting Equipment ---

### \*Fire Extinguishers - Hand portable and semi-portable\*

Quantity

Class Type

3

40-B

\*\*\*END\*\*\*

Serial #:

C1-1602911

Dated:





## Certificate of Inspection

Cargo Authority Attachment

Vessel Name: FMT 5054

Shipyard: JEFFBOAT

INCORPORATED

Hull #: 15-2185

Official #: 1266913

| Tank Group Information    | Cargo I | dentificati | on    |             | 44000000             | 3                   | Tanks |        | Carg          |      | Enviror<br>Control |                   | Fire                   | Special Require                      | ments   |             |      |
|---------------------------|---------|-------------|-------|-------------|----------------------|---------------------|-------|--------|---------------|------|--------------------|-------------------|------------------------|--------------------------------------|---|-------------|------|
| Tnk<br>Grp Tanks in Group | Density | Press       | Temp. | Hull<br>Typ | Cargo<br>Seg<br>Tank | Туре                | Vent  | Gauge  | Pipe<br>Class | Cont | Tanks              | Handling<br>Space | Protection<br>Provided | General                              | Materials of<br>Construction                  | Elec<br>Haz | Temp |
| A #1P/S, #2P/S, #3P/S     | 13,58   | Atmos       | Elev  | П           |                      | Integral<br>Gravity | PV    | Closed | П             | G-1  | NR                 | NA                | Portable               | 40-1(f)(1), ,50-60, 50-70(a), 50-73, | 55-1(j), 56-1(a), (c),<br>(d), (e), (f), (g), | I-C         | Yes  |

Notes: 1, Under Environmental Control, Tanks, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo tanks.

- 2. Under Environmental Control, Handling Space, NR means that the tank group is suitable only for those cargoes which require no environmental control in the cargo handling space. NA means that the vessel does not have a cargo control space, and this requirement is not applied.
- 3. Under Electrical Hazard Class, NA means that the tank group is suitable only for those cargoes which have no electrical hazard class requirement. NR means that the vessel has no electrical

| Cargo Identificatio   | n            |                    |                |       |              |               |                               | Condi           | tions of Carriage   |                |
|---|--------------|--------------------|----------------|-------|--------------|---------------|-------------------------------|-----------------|---|----------------|
| Name  | Chem<br>Code | Compat<br>Group No | Sub<br>Chapter | Grade | Hull<br>Type | Tank<br>Group | Vapor Re<br>App'd<br>(Y or N) | vCS<br>Category | Special Requirements in 46 CFR<br>151 General and Mat'ls of | Insp.<br>Perio |
| Authorized Subchapter O Cargoes   |              |                    |                |       |              |               |                               |                 |   |                |
| Acetonitrile  | ATN          | 37                 | 0              | С     | III          | Α             | Yes                           | 3               | No  | G              |
| Adiponitrile  | ADN          | 37                 | 0              | E     | П            | Α             | Yes                           | 1               | No  | G              |
| Alkyl(C7-C9) nitrates   | AKN          | 34 2               | 0              | NA    | 111          | Α             | No                            | N/A             | 50-81, 50-86  | G              |
| Anthracene oil (Coal tar fraction)  | AHO          | 33                 | 0              | NA    | Ш            | Α             | No                            | N/A             | No  | G              |
| Benzene   | BNZ          | 32                 | 0              | С     | 111          | Α             | Yes                           | 1               | .50-60  | G              |
| Benzene or hydrocarbon mixtures (having 10% Benzene or more)                        | внв          | 32 2               | 0              | С     | Ш            | Α             | Yes                           | 1               | 50-60   | G              |
| Benzene, Toluene, Xylene mixtures (10% Benzene or more)                             | BTX          | 32                 | 0              | B/C   | (11          | Α             | Yes                           | 111             | 50-60   | G              |
| Butyl acrylate (all isomers)  | BAR          | 14                 | 0              | D     | Ш            | Α             | No                            | N/A             | 50-70(a), 50-81(a), (b)                                     | G              |
| Butyl methacrylate  | BMH          | 14                 | 0              | D     | H            | Α             | No                            | N/A             | 50-70(a), 50-81(a), (b)                                     | G              |
| Butyraldehyde (all isomers)   | BAE          | 19                 | 0              | С     | 111          | Α             | Yes                           | 1               | _55-1(h)  | G              |
| Camphor oil (light)   | CPO          | 18                 | 0              | D     | П            | Α             | No                            | N/A             | No  | G              |
| Carbon tetrachloride  | CBT          | 36                 | 0              | NA    | 111          | Α             | No                            | N/A             | No  | G              |
| Caustic potash solution   | CPS          | 5 <sup>2</sup>     | 0              | NA    |              | Α             | No                            | N/A             | 50-73, 55-1(j)  | G              |
| Caustic soda solution   | CSS          | 5 2                | 0              | NA    | Ш            | А             | No                            | N/A             | 50-73, 55-1(j)  | G              |
| Chemical Oil (refined, containing phenolics)  | COL          | 21                 | 0              | Е     | II           | A             | No                            | N/A             | 50-73   | G              |
| Chlorobenzene   | CRB          | 36                 | 0              | D     | III          | Α             | Yes                           | . 1             | No  | G              |
| Chloroform  | CRF          | 36                 | 0              | NA    | Ш            | Α             | Yes                           | 3               | No  | G              |
| Coal tar naphtha solvent  | NCT          | 33                 | 0              | D     | 111          | Α             | Yes                           | 1               | 50-73   | G              |
| Coal tar pitch (molten)   | CTP          | 33                 | 0              | Е     | Ш            | Α             | No                            | N/A             | 50-73   | G              |
| Creosote  | CCV          | V 21 <sup>2</sup>  | 0              | Е     | III          | А             | Yes                           | 1               | No  | G              |
| Cresols (all isomers)   | CRS          | 21                 | 0              | Ε     | 111          | Α             | Yes                           | . 1             | No  | G              |
| Crotonaldehyde  | CTA          | 19 2               | 0              | С     | 11           | А             | No                            | N/A             | 55-1(h)   | G              |
| Crude hydrocarbon feedstock (containing Butyraldehydes and<br>Ethylpropyl acrolein) | CHC          | 3 19 <sup>2</sup>  | 0              | С     | HI           | Α             | Yes                           | 1               | No  | G              |
| 1,1-Dichloroethane  | DCF          | 36                 | 0              | С     | Ri           | Α             | Yes                           | 1               | No  | G              |
| Dichloromethane   | DCN          | ń 36               | 0              | NA    | 111          | Α             | No                            | N/A             | No  | G              |
| 1,1-Dichloropropane   | DPE          | 36                 | 0              | С     | - 111        | Α             | Yes                           | 3               | No  | G              |
| 1,2-Dichloropropane   | DPF          | 36                 | 0              | С     | 111          | Α             | Yes                           | 3               | No  | G              |
| 1,3-Dichloropropane   | DPC          | 36                 | 0              | С     | HI           | Α             | Yes                           | 3               | No  | G              |
| 1,3-Dichloropropene   | DPL          | J 15               | 0              | D     | II           | Α             | No                            | N/A             | , No  | G              |
| Dichloropropene, Dichloropropane mixtures   | DM2          | < 15               | 0              | С     | 11           | Α             | Yes                           | 3 1             | No  | G              |
| Dodecyl diphenyl ether disulfonate solution   | DOS          | 3 43               | 0              | #     | - II         | Α             | No                            | N/A             | No  | 13.            |
| EE Glycol Ether Mixture   | EEC          | 40                 | 0              | Đ     | 111          | Α             | No                            | N//             | \ No  | (3             |
| Ethyl acrylate  | EAC          | 14                 | 0              | Ö     | 10.          | 100           | No                            | 14//            | ( .50-ro(a), 50-fr(a), (b)                                  | 13:            |



Serial #: C1-1602911

Dated: 10-Aug-16

## Certificate of Inspection

Cargo Authority Attachment

Vessel Name: FMT 5054

Official #: 1266913

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Shipyard: JEFFBOAT INCORPORATED

Hull #: 15-2185

| Cargo Identification  |              |                    |     |       |              |               |                   |     | ions of Carriage  |                |
|---|--------------|--------------------|-----|-------|--------------|---------------|-------------------|-----|---|----------------|
| Non-  | Chem<br>Code | Compat<br>Group No | Sub | Grade | Hull<br>Type | Tank<br>Group | App'd<br>(Y or N) | VCS | Special Requirements in 46 CFR<br>151 General and Mat'ls of | Insp.<br>Perio |
| Name<br>Ethylene cyanohydrin  | ETC          | 20                 | O   | Е     | III          | А             | Yes               | 1   | No  | G              |
| Ethylene dichloride   | EDC          | 36 <sup>2</sup>    | 0   | С     | 111          | А             | Yes               | 1   | No  | G              |
| Ethylene glycol hexyl ether   | EGH          | 40                 | 0   | E     | 111          | A             | No                | N/A | No  | G              |
| Ethylene glycol monoalkyl ethers  | EGC          | 40                 | 0   | D/E   | III          | Α             | Yes               | 1   | No  | G              |
| Ethylene glycol propyl ether  | EGP          | 40                 | 0   | Е     | HI           | А             | Yes               | 1   | No  | G              |
| 2-Ethylhexyl acrylate   | EAI          | 14                 | 0   | E     | III          | A             | No                | N/A | 50-70(a), 50-81(a), (b)                                     | Ğ              |
| Ethyl methacrylate  | ETM          | 14                 | 0   | D/E   | 111          | A             | No                | N/A | 50-70(a)  | G              |
|   | EPA          | 19 <sup>2</sup>    | 0   | E     | 111          | A             | Yes               | 1   | No  | G              |
| 2-Ethyl-3-propylacrolein<br>Furfural  | FFA          | 19                 | 0   | D     | III          | A             | Yes               | 1   | 55-1(h)   | G              |
|   | GTA          | 19                 | 0   | NA    | 111          | A             | No                | N/A | No  | G              |
| Glutaraldehyde solution (50% or less)   | HFN          | 31                 | 0   | C     | III          | A             | Yes               | 1   | 50-70(a), 50-81(a), (b)                                     | G              |
| Hydrocarbon 5-9   | IPR          | 30                 | 0   | A     | 111          | A             | No                | N/A | 50-70(a) 50-81(a), (b)                                      | G              |
| Isoprene  | KPL          | 5                  | 0   | NA    | III          | A             | No                | N/A | 50-73, 56-1(a), (c), (g)                                    | G              |
| Kraft pulping liquors (free alkali content 3% or more)(including: Black,<br>Green, or White liquor) |              |                    |     |       |              |               |                   |     |   | G              |
| Mesityl oxide   | MSO          |                    | 0   | D     | - 181        | A             | Yes               | 1   | No  | G              |
| Methyl acrylate   | MAM          | 14                 | 0   | С     | III          | A             | No                | N/A | 50-70(a), 50-81(a), (b)                                     |                |
| Methyl methacrylate   | MMN          | 1 14               | 0   | С     | 101          | Α             | No                | N/A |   | G              |
| alpha-Methylstyrene   | MSR          | . 30               | 0   | D     | III          | A             | No                | N/A |   | G              |
| Naphthalene (molten)  | NTM          | 32                 | 0   | С     | 111          | Α             | Yes               | 1   | No  | G              |
| 1- or 2-Nitropropane  | NPM          | 42                 | 0   | D     | Ш            | Α             | Yes               | 1   | 50-81   | G              |
| 1,3-Pentadiene  | PDE          | 30                 | 0   | Α     | 111          | Α             | No                | N/A | 50-70(a), 50-81   | G              |
| Perchloroethylene   | PER          | 36                 | 0   | NA    | - 181        | Α             | No                | N/A | No  | G              |
| Phthalic anhydride (molten),  | PAN          | 11                 | 0   | E     | III          | Α             | Yes               | 1   | No  | G              |
| Sodium acetate, Glycol, Water mixture (3% or more Sodium Hydroxide)                                 | SAP          | 5                  | 0   |       | 111          | Α             | No                | N/A | _50-73, 55-1(j)   | G              |
| Sodium chlorate solution (50% or less)  | SDD          | 0 1,2              | 2 0 | NA    | III          | Α             | No                | N/A | 50-73   | G              |
| Styrene (crude)   | STX          | 30 -               | 0   | D     | []]          | Α             | No                | N/A | No  | G              |
| Styrene monomer   | STY          | 30                 | 0   | D     | 111          | Α             | No                | N/A | 50-70(a), 50-81(a), (b)                                     | G              |
| 1,1,2,2-Tetrachloroethane   | TEC          | 36                 | 0   | NA    | Ш            | А             | No                | N/A | No  | G              |
| Tetrahydrofuran   | THE          | 41                 | 0   | С     | 111          | Α             | Yes               | 1   | 50-70(b)  | G              |
| 1,2,4-Trichlorobenzene  | TCB          | 36                 | 0   | E     | - 111        | Α             | Yes               | 1   | No  | G              |
| 1,1,2-Trichloroethane   | TCM          |                    | 0   | NA    | 111          | Α             | Yes               | 1   | 50-73, 56-1(a)  | G              |
| Trichloroethylene   | TCL          | 36 <sup>2</sup>    | 0   | NA    | Ш            | Α             | Yes               | 1   | No  | G              |
| 1,2,3-Trichloropropane  | TCN          | 36                 | 0   | E     | - 11         | A             | Yes               | 3   | 50-73, 56-1(a)  | G              |
| Trisodium phosphate solution  | TSP          |                    | 0   | NA    | III          | A             | No                | N/A | 50-73, 56-1(a), (c)   | G              |
| Vanillin black liquor (free alkali content, 3% or more)   | VBL          | 5                  | 0   | NA    | 111          | А             | No                | N/A | 50-73 56-1(a), (c), (g)                                     | G              |
|   | VAN          |                    | 0   | С     | 111          | Α             | No                | N/A | 50-70(a), 50-81(a), (b)                                     | G              |
| Vinyl neodecanate   | VNE          |                    | 0   | E     | III          | Α             | No                | N/A | 50-70(a), 50-81(a) (b)                                      | G              |
| Subchapter D Cargoes Authorized for Vapor Contr   | ol lo        |                    |     |       |              | -             |                   |     |   |                |
| Acetone   | ACT          | 18 <sup>2</sup>    | D   | С     |              | Α             | Yes               | - 1 |   |                |
| Acetophenone  | ACP          | 18                 | D   | E     |              | Λ             | Yes               | 1   |   |                |
| Alcohol(C12-C16) poly(1-6)ethoxylates   | APU          | 20                 | D   | E     |              | Α             | Yes               | 1   |   |                |
| Alcohol(C6-C17)(secondary) poly(7-12)ethoxylates  | AEB          | 20                 | Ð   | E     |              | А             | Yes               | 1   |   |                |
| Amyl acetate (all isomers)  | AEC          | 34                 | D   | D     |              | A             | Yes               | 1   |   |                |
|   | AAI          | 20                 | D   | D     |              | A             | Yes               | 1   |   |                |
| Amyl alcohol (iso-, n-, sec-, primary)  | BAL          | 21                 | D   | E     |              | A             | Yes               | 1   |   |                |
| Benzyl alcohol Brake fluid base mixtures (containing Poly(2-8)alkylene(C2-C3)                       | BFX          | 20                 | - D | E     |              | = A           | Yes               | 1   |   |                |
| glycols, Polyalkylene(C2-C10) glycol monoalkyl(C1-C4) ethers, and their borate esters)              |              |                    |     |       |              |               |                   |     |   |                |

Serial #: C1-1602911

Dated: 10-Aug-16



## Certificate of Inspection

Cargo Authority Attachment

Vessel Name: FMT 5054

Shipyard: JEFFBOAT

INCORPORATED

Hull #: 15-2185

Official #: 1266913

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| Cargo Identific                                | cation       |                    |   |     |              |      |                   | Condi | tions of Carriage   |              |
|--|--------------|--------------------|---|-----|--------------|------|-------------------|-------|---|--------------|
| Name   | Chem<br>Code | Compal<br>Group No |   | 1.  | Hull<br>Type | 10.0 | App'd<br>(Y or N) |       | Special Requirements in 46 CFR<br>151 General and Mat'ls of | Insp<br>Peri |
| Butyl acetate (all isomers)                    | BAX          | 34                 | D | D   |              | A    | Yes               | 1     |   |              |
| Butyl alcohol (iso-)                           | IAL          | 20 2               | D | D   |              | Α    | Yes               | 1     |   |              |
| Butyl alcohol (n-)                             | BAN          | 20 2               | D | D   |              | Α    | Yes               | 1     |   |              |
| Butyl alcohol (sec-)                           | BAS          | 20 <sup>2</sup>    | D | С   |              | Α    | Yes               | 1     |   | _            |
| Butyl alcohol (tert-)                          | BAT          | 20 <sup>2</sup>    | D | С   |              | Α    | Yes               | 1     |   |              |
| Butyl benzyl phthalate                         | BPH          | 34                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Butyl toluene                                  | BUE          | 32                 | D | D   |              | A    | Yes               | 1     |   |              |
| Caprolactam solutions                          | CLS          | 22                 | D | Е   |              | Α    | Yes               | 11    |   |              |
| Cyclohexane                                    | CHX          | 31                 | D | С   |              | A    | Yes               | 11    |   |              |
| Cyclohexanol                                   | CHN          | 20                 | D | E   |              | Α    | Yes               | 1     |   |              |
| o-Cymene                                       | CMP          | 32                 | D | D   |              | A    | Yes               | 1     |   |              |
| so-Decaldehyde                                 | IDA          | 19                 | D | E   |              | Α    | Yes               | 1     |   |              |
| n-Decaldehyde                                  | DAL          | 19                 | D | Е   |              | Α    | Yes               | 1     |   |              |
| Decene   | DCE          | 30                 | D | D_  |              | Α    | Yes               | 1     |   |              |
| Decyl atcohol (all isomers)                    | DAX          | 20 <sup>2</sup>    | D | E   |              | Α    | Yes               | 1     |   |              |
| n-Decylbenzene, see Alkyl(C9+)benzenes         | DBZ          | 32                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Diacetone alcohol                              | DAA          | 20 2               | D | D   |              | Α    | Yes               | 1     |   |              |
| ortho-Dibutyl phthalate                        | DPA          | 34                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Diethylbenzene                                 | DEB          | 32                 | D | D   |              | Α    | Yes               | 1     |   |              |
| Diethylene glycol                              | DEG          | 40 2               | D | E   |              | Α    | Yes               | 1     |   |              |
| Diisobutylene                                  | DBL          | 30                 | D | С   |              | Α    | Yes               | 1     |   |              |
| Diisobutyl ketone                              | DIK          | 18                 | D | D   |              | Α    | Yes               | 1     |   |              |
| Diisopropylbenzene (all isomers)               | DIX          | 32                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Dimethyl phthalate                             | DTL          | 34                 | D | Е   |              | Α    | Yes               | 1     |   |              |
| Dioctyl phthalate                              | DOP          | 34                 | D | Е   |              | Α    | Yes               | 1     |   |              |
| Dipentene                                      | DPN          | 30                 | D | D   |              | Α    | Yes               | 1     |   |              |
| Diphenyl                                       | DIL          | 32                 | D | D/E |              | Α    | Yes               | 1     |   |              |
| Diphenyl, Diphenyl ether mixtures              | DDO          | 33                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Diphenyl ether                                 | DPE          | 41                 | D | {E} |              | Α    | Yes               | 1     |   |              |
| Dipropylene glycol                             | DPG          |                    | D | E   |              | Α    | Yes               | 1     |   |              |
| Distillates: Flashed feed stocks               | DFF          | 33                 | D | E   |              | Α    | Yes               | 1     |   |              |
| Distillates: Straight run                      | DSR          | 19957.5            | D | E   |              | А    | Yes               | 1     |   |              |
| Dodecane (all isomers)                         | DOZ          |                    | D | D   | 1/2          | Α    | Yes               |       |   |              |
| Dodecylbenzene, see Alkyl(C9+)benzenes         | DDB          |                    | D | E   |              | Α'   | Yes               |       |   |              |
|  | EEA          | 34                 | D | D   |              | A    | Yes               |       |   |              |
| 2-Ethoxyethyl acetate Ethoxy triglycol (crude) | ETG          | 40                 | D | E   |              | A    | Yes               |       |   |              |
|  | ETA          | 34                 | D | C   |              | A    | Yes               |       |   |              |
| Ethyl acetate                                  | EAA          | 34                 | D | E   |              | A    | Yes               |       |   |              |
| Ethyl acetoacetate                             | EAL          | 20 2               | D | С   |              | A    | Yes               |       |   |              |
| Ethyl alcohol                                  | ETB          | 32                 | D | C   |              | A    | Yes               |       |   |              |
| Ethylbenzene                                   | EBT          | 20                 | D | D   |              | A    | Yes               |       |   |              |
| Ethyl butanol                                  |              |                    | D | C   |              | A    | Yes               |       |   |              |
| Ethyl tert-butyl ether                         | EBE          |                    |   | D   |              | A    | Yes               |       |   |              |
| Ethyl butyrate                                 | EBR          |                    | D |     |              |      |                   | ***   |   |              |
| Ethyl cyclohexane                              | ECY          |                    | D | D   |              | A    | Yes               |       |   |              |
| Ethylene glycol                                | EGL          |                    | D | E   |              | A    | Yes               |       |   |              |
| Ethylene glycol butyl ether acetate            | EMA          |                    | D | E   |              | Α    | Yes               |       |   |              |
| Ethylene glycol diacetate                      | EGY          | 34                 | D | E   |              | Α    | Yes               | 1 _   |   |              |

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Cargo Authority Attachment

Vessel Name: FMT 5054

Shipyard: JEFFBOAT

INCORPORATED

Hull #: 15-2185

Official #: 1266913

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| Cargo Identification  | n            |                    |                |       |              |               | (                             | Condi | tions of Carriage   |       |
|---|--------------|--------------------|----------------|-------|--------------|---------------|-------------------------------|-------|---|-------|
| Name  | Chem<br>Code | Compat<br>Group No | Sub<br>Chapter | Grade | Hull<br>Type | Tank<br>Group | Vapor Ri<br>App'd<br>(Y or N) | VCS   | Special Requirements in 46 CFR<br>151 General and Mat'ls of | Insp. |
| Ethyl-3-ethoxypropionate  | EEP          | 34                 | D              | D     |              | Α             | Yes                           | 3     |   |       |
| 2-Ethylhexanol  | EHX          | 20                 | D              | E     |              | Α             | Yes                           | _ 1   |   |       |
| Ethyl propionate  | EPR          | 34                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Ethyl toluene   | ETE          | 32                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Formamide   | FAM          | 10                 | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Furfuryl alcohol  | FAL          | 20 <sup>2</sup>    | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Gasoline blending stocks: Alkylates                                     | GAK          | 33                 | D              | A/C   |              | Α             | Yes                           | 1     |   |       |
| Gasoline blending stocks: Reformates                                    | GRF          | 33                 | D              | A/C   |              | Α             | Yes                           | 1     |   |       |
| Gasolines: Automotive (containing not over 4.23 grams lead per gallon)  | GAT          | 33                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Gasolines: Aviation (containing not over 4,86 grams of lead per gallon) | GAV          | 33                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Gasolines: Casinghead (natural)   | GCS          | 33                 | D              | A/C   |              | À             | Yes                           | 1     |   |       |
| Gasolines: Polymer  | GPL          | 33                 | D              | A/C   |              | Α             | Yes                           | 1     |   |       |
| Sasolines: Straight run   | GSR          | 33                 | D              | A/C   |              | Α             | Yes                           | 1     |   |       |
| Glycerine   | GCR          | 20 2               | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Heptane (all isomers), see Alkanes (C6-C9) (all isomers)                | HMX          | 31                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Heptanoic acid  | HEP          | 4                  | D              | E     |              | A             | Yes                           | 1     |   |       |
| Heptanol (all isomers)  | HTX          | 20                 | D              | D/E   |              | Α             | Yes                           | 1     |   | _     |
| Heptyl acetate  | HPE          | 34                 | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Hexane (all isomers), see Alkanes (C6-C9)                               | HXS          | 31 2               | D              | B/C   |              | Α             | Yes                           | 1     |   |       |
| Hexanoic acid   | HXO          | 4                  | D              | Е     |              | Α             | Yes                           | 1     |   |       |
| Hexanol   | HXN          | 20                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Hexylene glycol   | HXG          | 20                 | D              | E     |              | Α             | Yes                           | 11    |   |       |
| sophorone   | IPH          | 18 <sup>2</sup>    | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Jet fuel: JP-4  | JPF          | 33                 | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Jet fuel: JP-5 (kerosene, heavy)  | JPV          | 33                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Kerosene  | KRS          | 33                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Methyl acetate  | MTT          | 34                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Methyl alcohol  | MAL          | 20 2               | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Methylamyl acetate  | MAC          | 34                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Methylamyl alcohol  | MAA          | 20                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Methyl amyl ketone  | MAK          | 18                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Methyl tert-butyl ether   | MBE          | 41 2               | D              | С     |              | A             | Yes                           | 1     |   |       |
| Methyl butyl ketone   | MBK          | 18                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Methyl butyrate   | MBU          | 34                 | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Methyl ethyl ketone   | MEK          | 18 <sup>2</sup>    | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Methyl heptyl ketone  | MHK          | 18                 | D              | D     |              | A             | Yes                           | 1     |   |       |
| Methyl isobutyl ketone  | MIK          | 18 2               | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Methyl naphthalene (molten)   | MNA          | 32                 | D              | E     |              | Α             | Yes                           | 1     |   |       |
| Mineral spirits   | MNS          | 33                 | Đ              | D     |              | Α             | Yes                           | 1     |   |       |
| Myrcene   | MRE          | 30                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Naphtha: Heavy  | NAG          | 33                 | D              | #     |              | Α             | Yes                           | 1     |   |       |
| Naphtha: Petroleum  | PTN          | 33                 | D              | #     |              | А             | Yes                           | - (1  |   |       |
| Naphtha: Solvent  | NSV          | 33                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Naphtha: Stoddard solvent   | NSS          | 33                 | D              | D     |              | Α             | Yes                           | 1     |   |       |
| Naphtha: Varnish makers and painters (75%)                              | NVN          | 1 33               | D              | С     |              | Α             | Yes                           | 1     |   |       |
| Nonane (all isomers), see Alkanes (C6-C9)                               | NAX          | 31                 | D              | D     |              | А             | Yes                           | 1     |   |       |
| Nonyl alcohol (all isomers)   | NNS          |                    | D              | E     |              | А             | Yes                           | 1     |   |       |

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Cargo Authority Attachment

Vessel Name: FMT 5054

Shipyard: JEFFBOAT

INCORPORATED

Hull #: 15-2185

Official #: 1266913

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| Cargo Identifica  | tion |                 |         |     |      |       |                  | Condi           | tions of Carriage              |       |
|---|------|-----------------|---------|-----|------|-------|------------------|-----------------|--------------------------------|-------|
|   | Chem | Compat          | Sub     |     | Hull | Tank  | Vapor F<br>App'd | Recovery<br>VCS | Special Requirements in 46 CFR | Insp. |
| Name  | Code | Group No        | Chapter |     |      | Group | (Y or N)         | Calegory        | 151 General and Mat'ls of      | Perio |
| Nonyl phenol  | NNP  | 21              | D       | E   |      | A     | Yes              | 1               |                                |       |
| Nonyl phenol poly(4+)ethoxylates                        | NPE  | 40              | D       | Е   |      | A     | Yes              | 1               |                                |       |
| Octane (all isomers), see Alkanes (C6-C9)               | OAX  | 31              | D       | С   |      | Α     | Yes              | 1               |                                |       |
| Octanoic acid (all isomers)                             | OAY  | 4               | D       | Е   |      | Α     | Yes              | 1               |                                | _     |
| Octanol (all isomers)                                   | OCX  | 20 2            | D       | Ε   |      | Α     | Yes              | 1               |                                |       |
| Oil, fuel: No. 2  | OTW  | 33              | D       | D/E |      | Α     | Yes              | 1               |                                |       |
| Oil, fuel: No. 2-D                                      | OTD  | 33              | D       | D   |      | Α     | Yes              | 1               |                                |       |
| Oil, fuel: No. 4  | OFR  | 33              | D       | D/E |      | Α     | Yes              | 1               |                                |       |
| Oil, fuel: No. 5  | OFV  | 33              | D       | D/E |      | Α     | Yes              | 1               |                                |       |
| Oil, fuel: No. 6  | OSX  | 33              | D       | E   |      | Α     | Yes              | 11              |                                |       |
| Oil, mísc: Crude  | OIL  | 33              | D       | A/D |      | Α     | Yes              | 1               |                                |       |
| Oil, misc: Diesel                                       | ODS  | 33              | D       | D/E |      | Α     | Yes              | 1               |                                |       |
| Oil, misc: Gas, high pour                               | OGP  | 33              | D       | Е   |      | Α     | Yes              | 1               |                                |       |
| Oil, misc: Lubricating                                  | OLB  | 33              | D       | E   |      | Α     | Yes              | 1               |                                |       |
| Oil, misc: Residual                                     | ORL  | 33              | D       | Е   |      | Α     | Yes              | 1               |                                |       |
| Oil, misc: Turbine                                      | OTB  | 33              | D       | E   |      | Α     | Yes              | 1               |                                |       |
| n-Pentyl propionate                                     | PPE  | 34              | D       | D   |      | Α     | Yes              | 1               |                                |       |
| alpha-Pinene  | PIO  | 30              | D       | D   |      | Α     | Yes              | 1               |                                |       |
| beta-Pinene   | PIP  | 30              | D       | D   |      | Α     | Yes              | 1               |                                |       |
| Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether         | PAG  | 40              | D       | E   |      | Α     | Yes              | 1               |                                |       |
| Poly(2-8)alkylene glycol monoalkyl(C1-C6) ether acetate | PAF  | 34              | D       | E   |      | Α     | Yes              | 1               |                                |       |
| Polybutene  | PLB  | 30              | D       | E   |      | Α     | Yes              | 1               |                                |       |
| Polypropylene glycol                                    | PGC  | 40              | D       | Е   |      | Α     | Yes              | 1               |                                |       |
| iso-Propyl acetate                                      | IAC  | 34              | D       | С   |      | À     | Yes              | 1               |                                |       |
| n-Propyl acetate  | PAT  | 34              | D       | С   |      | Α     | Yes              | 1               |                                |       |
| iso-Propyl alcohol                                      | IPA  | 20 <sup>2</sup> | D       | С   |      | Α     | Yes              | 1               |                                |       |
| n-Propyl alcohol  | PAL  | 20 <sup>2</sup> | D       | С   |      | А     | Yes              | 1               |                                |       |
| Propylbenzene (all isomers)                             | PBY  | 32              | D       | D   |      | Α     | Yes              | 1               |                                |       |
| Iso-Propylcyclohexane                                   | IPX  | 31              | D       | D . |      | Α     | Yes              | 1               |                                |       |
|   | PPG  |                 | D       | Ė   |      | A     | Yes              | 1               |                                |       |
| Propylene glycol Propylene glycol methyl ether acetate  | PGN  |                 | D       | D   |      | A     | Yes              | 1               |                                |       |
|   | PTT  | 30              | D       | D   |      | A     | Yes              | 1               |                                |       |
| Propylene tetramer                                      | SFL  | 39              | D       | E   |      | A     | Yes              | 71              |                                |       |
| Sulfolane   | TTG  | 40              | D       | E   |      | A     | Yes              | 1               |                                |       |
| Tetraethylene glycol                                    | THN  |                 | D       | E   |      | A     | Yes              | 1               |                                |       |
| Tetrahydronaphthalene                                   | TOL  | 32              | D       | C   |      | A     | Yes              | 1               |                                |       |
| Toluene   |      | 34              | D       | E   |      | A     | Yes              | -               |                                |       |
| Tricresyl phosphate (less than 1% of the ortho isomer)  | TCP  |                 |         |     | -    |       |                  | 1               |                                |       |
| Triethylbenzene   | TEB  | 32              | D       | E   |      | A     | Yes<br>Yes       |                 |                                |       |
| Triethylene glycol                                      | TEG  |                 | _ D     |     |      |       |                  |                 |                                |       |
| Triethyl phosphate                                      | TPS  |                 | D       | E   |      | A     | Yes              |                 | en ee                          |       |
| Trimethylbenzene (all isomers)                          | TRE  |                 | . D     | {D} | -    | A     | Yes              |                 |                                |       |
| Trixylenyl phosphate                                    | TRP  |                 | D       | E   |      | ΑΑ    | Yes              |                 |                                |       |
| Undecene  | UDC  |                 | D       | D/E |      | Α.    | Yes              |                 |                                |       |
| 1-Undecyl alcohol                                       | UND  |                 | D       | E   |      | Α     | Yes              |                 |                                |       |
| Xylenes (ortho-, meta-, para-)                          | XLX  | 32              | D       | D   |      | Α     | Yes              | 1               |                                |       |

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Dated:



# Certificate of Inspection

Cargo Authority Attachment

Vessel Name: FMT 5054 Official #: 1266913

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Shipyard: JEFFBOAT IN

Hull #: 15-2185

### Explanation of terms & symbols used in the Table:

Cargo Identification

Name

Chem Code

Compatability Group No.

Note 1

Note 2

Subchapter Subchapter D

Note 3

A, B, C D, E Note 4

Grade

Hull Type

The proper shipping name as listed in 46 CFR Table 30,25-1, 46 CFR Table 151,05, and 46 CFR Part 153 Table 2

The three letter designation assigned to the cargo in the Chemical Hazards Response Information System (CHRIS) Manual

Certain mixtures of cargoes may not have a CHRIS Code assigned.

The cargo reactive group number assigned for compatibility determinations in 46 CFR Part 150 Tables I and II. In accordance with 46 CFR 150.130, the Person-in-Charge of the barge is responsible for ensuring that the compatibility requirements of 46 CFR Part 150 are met. Cargoes must be checked for compatibility using the figures, tables, and appendices of 46 CFR 150 in conjunction with the assigned reactive group number.

Because of the very high reactivity or unusual conditions of carriage or potential compatibility problems, this product is not assigned to a specific group in the Compatibility Charl, For additional compatibility information, contact Commandant (CG-3PSO-3), U.S. Coast Guard, 2100 Second Street, SW, Washington, DC 20593-0001. Telephone

See Appendix I to 46 CFR Part 150 - exceptions to the compatability chart

The subchapter in Title 46 Code of Federal Regulations under which the cargo has been classified

Those flammable and combustible liquids listed in 46 CFR Table 30 25

Those hazardous cargoes listed in 46 CFR Table 151,05 and 46 CFR Part 153 Table 2.

Those cargoes listed in 46 CFR Part 153 Table 2 are non-regulated cargoes when carried in bulk on non-oceangoing barges.

The cargo classification assigned to each flammable or combustible liquid. Grades inside of "()" indicate a provisional assignment based upon literature sources which were not verified by manufacturers data. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo.

Flammable liquid cargoes, as defined in 46 CFR 30-10-22 Combustible liquid cargoes, as defined in 46 CFR 30-10, 15

The flammability/combustibility grade of these cargoes may vary depending upon the flashpoint and Reid vapor pressure. The Person-in-Charge shall verify the cargo grade based on Manufacturers data and ensure that the barge is authorized for carriage of that grade of cargo.

Those subchapter O cargoes which are not classified as a flammable or combustible liquid.

No flammability/combustibility grade has been assigned yet as the necessary flash point/vapor pressure data for such assignments are presently not available.

The required barge hull classification for carriage of the specified Subchapter O hazardous material cargo, see 46 CFR 151.10-1.

Designed to carry products which require the maximum preventive measures to preclude the uncontrolled release of the cargo. See 46 CFR 151.10-1(b)(1). Designed to carry products which require significant preventive measures to preclude the uncontrolled release of cargo. See 46 CFR 151.10-1(b)(3). Designed to carry products of sufficeint hazard to require a moderate degree of control. See 46 CFR 151.10-1(b)(4).

Not applicable to barges certificated under Subchapter D.

## Conditions of Carriage

Tank Group Vapor Recovery Approved (Y or N) The vessel's tank group (as defined in Section 4) which is authorized for carriage of the named cargo.

Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo., No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

#### Conditions of Carriage

Tank Group Vapor Recovery Approved (Y or N) The vessel's tank group (as defined under the "46 CFR Tank Group Characteristics" listed on page 1) which is authorized for carriage of the named cargo.

Yes: The vessel's VCS has been reviewed and approved by the MSC to control vapors of the specified cargo. No: The vessel's VCS has been reviewed and is not approved by the MSC to control vapors of the specified cargo.

VCS Category: Category 1

The specified cargo's provisional classification for vapor control systems.

(No additional VCS requirements above those for benzene, gasolines and crude oil). All requirements applying to the handling of oil and hazardous materials in Titles 33 and 46 Code of Federal Regulations (CFR) apply to these cargoes. Those specifically dealing with vapor control systems are in 33 CFR 155.750, 33 CFR 156.120, 33 CFR 156.170, 46 CFR 35.35 and 46 CFR 39. The cargo tank venting system calculations (46 CFR 39.20-11) and the pressure drop calculations (46 CFR 39.30-1(b)) must use appropriate friction factors, vapor densities and vapor growth rales

Category 2

(Polymerizas) Polymerization and residue build-up of these cargoes can adversely affect the vessel by fouling safety components and restricting vapor flow which could lead to cargo tank overpressurization. The vessel's owner must develop a method of ensuring all VCS safety components are functional and polymer build-up is not causing an unsafe condition due to increased pressure in the vapor control piping and cargo tanks. The method shall be acceptable to the local officer in charge, Marine Inspection. This is in addition to the requirements of Category 1. Please note that a material not normally considered a monomer can be a problem in detonation arrester.

Category 3

(Highly toxic) VCSs for these toxic cargoes cannot use a spill valve or rupture disk as the primary means to meet the overfill protection requirement of 46 CFR 39.20-9 This requirement is in addition to the requirements of Category 1.

Category 4

(Polymerizes and highly toxic) Must comply with requirements of Categories 1, 2 and 3,

Category 5

(High vapor pressure) VCS pressure drop calculations for cargoes with a vapor pressure greater than 14.7 psia at 115 F must take into account increased vapor-air mixture densities and vapor growth rates as compared to Category 1 cargoes. Consult the Marine Safety Center's VCS Guidelines for further information. This requirement is in addition to the requirements of Category 1

(High vapor pressure and highly toxic) Must comply with requirements of Categories 1, 3 and 5 (High vapor pressure and polymerizes) Must comply with requirements of Categories 1, 2 and 5.

Category 7

The cargo has not been evaluated/classified for use in vapor control systems