



## Product Specification Sheet

### # 1 HS FUEL OIL - ARCTIC GRADE ASTM D396 / ASTM D975

| <u>Test</u>                                           | <u>Units</u>                                                        | <u>Specification</u> | <u>Test Method</u> |
|-------------------------------------------------------|---------------------------------------------------------------------|----------------------|--------------------|
|                                                       |                                                                     | Degrees C (F)        |                    |
| Visual Inspection                                     | "Visually free of undissolved water, sediment and suspended matter" |                      | PASS               |
| Water and Sediment                                    | Vol %                                                               | max                  | 0.05               |
| Density at 15C                                        | kg/m <sup>3</sup>                                                   | max                  | 850                |
| Flash Point                                           | Celsius                                                             | min                  | 38 (100)           |
| Cloud Point                                           | Celsius                                                             | max                  | -48.5 (-55)        |
| Pour Point                                            | Celsius                                                             | max                  | -48.5 (-55)        |
| Distillation, Auto                                    |                                                                     |                      |                    |
| IBP                                                   | Celsius                                                             |                      | Report             |
| 10% Recovery                                          | Celsius                                                             | max                  | 215(419)           |
| 20% Recovery                                          | Celsius                                                             |                      | Report             |
| 50% Recovery                                          | Celsius                                                             |                      | Report             |
| 90% Recovery                                          | Celsius                                                             | max                  | 288 (550)          |
| Final Boiling Pt                                      | Celsius                                                             |                      | Report             |
| Kinematic Viscosity, @ 40C                            | mm <sup>2</sup> /S                                                  |                      | 1.1* - 2.4         |
| Ash                                                   | wt%                                                                 | max                  | 0.01               |
| Sulfur                                                | wt%                                                                 | max                  | 0.1^ / 0.5         |
| Copper strip corrosion rating                         | Code                                                                | max                  | 3                  |
| Cetane Index (4 variable)                             | Number                                                              | min                  | 40                 |
| Cetane Index                                          | Number                                                              | min                  | 40                 |
| Ramsbottom carbon residue on 10% distillation residue | wt%                                                                 | max                  | 0.15               |
| Gross Heat of Combustion                              | Btu/Gallon                                                          |                      | Report             |
| Lubricity, HFRR @ 60C                                 | micron                                                              | typical              | 520                |
| Conductivity**                                        | pS/m                                                                | min                  | 25                 |

Note:

\*Minimum Viscosity specification relaxed to 1.1cSt for Arctic Grade fluidity.

\*\*Fuel loading does not exceed conditions of D396 Table 5. No conductivity improver added

^Sulfur limit is 0.1 wt% max (1000ppm max) for fuel distributed within FNSB non-attainment area