CLAIMS

~~What is claimed is:~~

1. A marine fuel composition for use in marine engines, the marine fuel composition comprising:

a fuel component, the fuel component selected from the group consisting of high sulfur fuel oil (HSFO), low sulfur fuel oil (LSFO), slurry oil from a fluid catalytic cracker, heavy coker gas oil (HCGO), light cycle oil (LCO) from a fluid catalytic cracker, vacuum tower bottoms (VTB), atmospheric tower bottoms (ATB), low sulfur straight run (LSSR), high sulfur straight run (HSSR), distillate base stock (DBS), low sulfur vacuum gas oil (LSVGO), high sulfur vacuum gas oil (HSVGO), cracked or straight run fuel oil (m100), straight run gas oil (SRGO), ultra low sulfur heating oil (ULSHO), residues, and combinations of the same,

wherein the fuel component is present in an amount between 10 vol% and 99.9 vol%; and

a lubricity component operable to increase the lubricity of the fuel component, the lubricity component ~~selected from the group consisting of~~ comprises a base oil~~, an aromatic extract, and combinations of the same~~,

wherein a sulfur content is between 0.101 wt % and 5 wt %,

wherein a carbon residue – micro method is greater than 2.5 wt%.

2. The marine fuel composition of claim 1, wherein the lubricity component is present in an amount between 0.1 vol % and 90 vol %.

3. The marine fuel composition of claim 1, wherein the base oil is selected from the group consisting of group II base oils, group III base oils, group IV base oils, group V base oils, and combinations of the same.

4. The marine fuel composition of claim 1, further comprising fuel additives.

5. The marine fuel composition of claim 1, wherein the residues are selected from the group consisting of straight run residue, thermal residue, cracked residue, and combinations of the same.

6. The marine fuel composition of claim 1, wherein an API gravity is between 11.2 and 40.

7. The marine fuel composition of claim 1, wherein a viscosity is between 3 cSt and 400 cSt at 122 deg F.

8. The marine fuel composition of claim 1, wherein an amount of calcium is less than 30 mg/kg.

9. The marine fuel composition of claim 1, wherein an amount of zinc is less than 15 mg/kg.

10. The marine fuel composition of claim 1, wherein an amount of phosphorus is less than 15 mg/kg.

11. The marine fuel composition of claim 1, wherein the lubricity component further comprises a group I base oil.

~~12. A method of making a marine fuel composition, the method comprising the steps of:~~

~~developing a computer blend model for a fuel component and a lubricity component based on a desired value for a target property, wherein the computer blend model comprises a volumetric ratio of the fuel component, wherein the computer blend model comprises a volumetric ratio of the lubricity component;~~

~~preparing a physical sample of the fuel component based on the volumetric ratio of the computer blend model;~~

~~mixing the lubricity component with the fuel component to produce the marine fuel composition;~~

~~testing the target property of the marine fuel composition for conformance with the desired value; and~~

~~preparing a commercial volume of the marine fuel composition.~~

~~13. The method of claim 12, further comprising the step of mixing a fuel additive into the marine fuel composition.~~

~~14. The method of claim 12, wherein the computer blend model comprises a value for each target property of the fuel component and the lubricity component.~~

~~15. The method of claim 12, wherein the fuel component is selected from the group consisting of high sulfur fuel oil (HSFO), low sulfur fuel oil (LSFO), slurry oil from a fluid catalytic cracker,~~

heavy coker gas oil (HCGO), light cycle oil (LCO) from a fluid catalytic cracker, vacuum tower bottoms (VTB), atmospheric tower bottoms (ATB), low sulfur straight run (LSSR), high sulfur straight run (HSSR), distillate base stock (DBS), low sulfur vacuum gas oil (LSVGO), high sulfur vacuum gas oil (HSVGO), cracked or straight run fuel oil (m100), straight run gas oil (SRGO), ultra low sulfur heating oil (ULSHO), residues, and combinations of the same.

16. The method of claim 12, wherein the lubricity component is selected from the group consisting of a base oil, an aromatic extract, and combinations of the same.

17. The method of claim 12, wherein the target property is selected from the group consisting of amount of sulfur, the API gravity, the kinematic viscosity, the flash point, the amount of hydrogen sulfide, the amount and types of metal components, the acid number, the total sediment by hot filtration, the oxidation stability, the amount of fatty acid methyl ester, the cloud point, the cold filter plugging point, the pour point, the lubricity, the amount of calcium and zinc, the amount of calcium and phosphorus, and combinations of the same.

18. The method of claim 12, wherein the target property is API gravity, and wherein the desired value of the API gravity is between 11.2 and 40.

19. The method of claim 12, wherein the target property is viscosity, and wherein the desired value of the viscosity is between 3 cSt and 400 cSt at 122 deg F.

20. The method of claim 12, wherein the target property is an amount of sulfur, and wherein the amount of sulfur is between 0.101 wt % and 5 wt %.