Lunar Water Logistics – Agency Brief

Safe, Sustainable, and Scalable Mass Transport for Lunar Orbit Infrastructure
aegisstation.com/waterlogistics

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1. Mission Context

The Aegis Station project requires the in-orbit delivery of **406,848 metric tons of water** for radiation shielding, life support, and thermal mass—an amount equivalent to **163 Olympic swimming pools**.

Rather than lifting this from Earth, the project will rely entirely on **in-situ lunar resources**, transported by a fleet of **20 reusable autonomous tankers** operating between the lunar surface and Aegis Station in orbit.

This system is designed to meet mission objectives while adhering to **international safety, sustainability, and environmental protocols**.

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2. Safety and Redundancy

System Characteristics

- **Uncrewed operations**: no crew exposure to launch/landing cycles
- **Distributed architecture**: no single-point-of-failure in fleet or ISRU chain
- **Daily turnover**: constant flow allows for immediate anomaly detection
- **Station interface**: monitored fluid transfer, containment, and sensor redundancy

Shielding System

- Water is stored within **shield-integrated bladders**
- Gradual fill protects against structural stress
- Shielding layer doubles as thermal and radiation buffer

[diagram here: Aegis shielding fill overview + system checkpoints]

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3. Environmental Considerations

- **No atmospheric exhaust**
- **Dust mitigation protocols** in place for surface launches

- **Closed-loop processing** for water separation and vapor management
- **Thermal shielding** prevents ice contamination or boil-off
- Water delivery architecture minimizes **lunar regolith disruption**

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4. International Compliance

The system adheres to principles outlined in:

- The **Artemis Accords**
- The **Outer Space Treaty**
- Draft standards for **ISRU operations and deconfliction**

All operations are:

- **Non-weaponized**
- **Transparent and auditable**
- **Available for international collaboration**

[diagram here: compliance checklist and operating zones]

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5. Post-Completion Operations

Upon completion of Aegis Station's water shield, infrastructure remains active to support:

- Fuel depots in lunar orbit or LEO
- Emergency life support supply for orbital assets
- Long-term lunar surface operations

This aligns with **agency goals** for:

- **Space sustainability**
- **Orbital infrastructure readiness**
- **Deep space mission preparation**

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6. Public Benefit

- Demonstrates scalable ISRU without Earth dependence
- Advances **closed-loop logistics** for deep space exploration
- Supports future **interoperable logistics networks** across allied platforms

7. Learn More

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