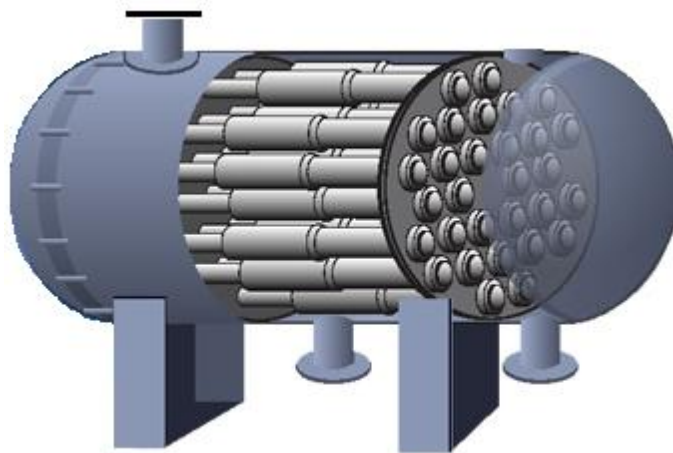


Introducing:



**maxis**

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Canadian technology  
development company  
based in Calgary,  
Canada



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We provide innovative systems to the oil and gas industry for greater efficiency and productivity.

GenOil currently owns 12 technologies & intellectual property, that are protected under 22 patents or patents pending



# Key GenOil Technologies

- Oil/Water/Gas/Solids Separation Systems
- Hydrogen Addition Upgrading (Hydrocracking and Hydrotreatment)
  - For Bitumen and Heavy Oil
  - Tar Sands
  - Refinery Residue and Tank Bottoms
- Solids Removal Systems for Hydrocarbon Storage Tanks





# Research Facility

Testing and demonstration units of:

GenOil Crystal Separator

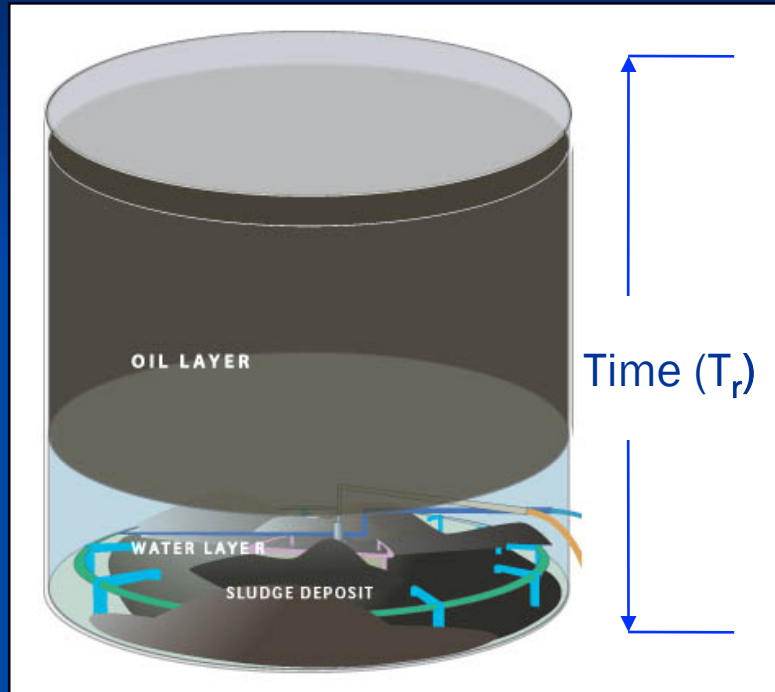
GenOil MAXIS Multiphase Dewatering/De-oiling  
Systems

GenOil Solids Removal Systems

GenOil Heavy Oil Upgrader Pilot Plant



Conventional separating processes are based on gravity settling and the *gravity difference* between oil and water.



These processes follow a convention based on *Stokes Law*, which determines the minimum amount of residence time ( $T_r$ ) necessary for liquids to separate from one another.

Result: Typically very large and expensive equipment

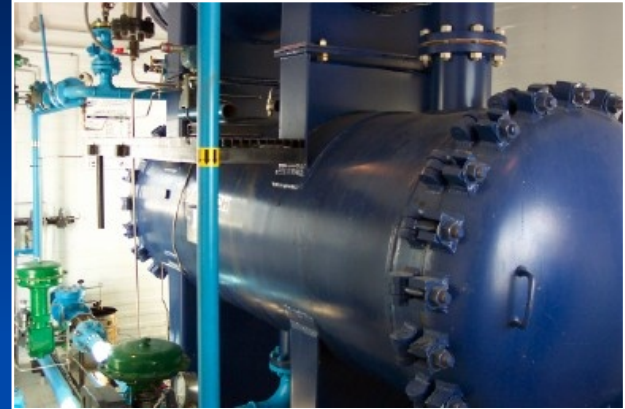
The Genoil MAXIS system, by contrast, uses cyclonic separation principles that rely primarily upon *centrifugal force to more effectively separate the mixture.*

- Combines Gravity, Accelerated Coalescence and Centripetal Vortex Separation in One Unit
- Lower Capital Costs
- Lower Operating Costs
- Oil/Water Separations can normally be accomplished with little or no thermal energy addition.
- No Chemicals



# Design Features

- Complete skid mounted system
- Minimal site preparation
- Easily relocated – If required, the skid mounted package can be relocated and moved to alternate sites.
- Expandable – Additional fluid capacity can be designed into the system for future projected increases in production volumes.
- Small Footprint – as compared to conventional Dewatering vessels handling similar volumes.
- Remote Control & Automatic Operation





# Design Features

- Innovative Design
- Specialized inlet device
- Simplified oil path
- Removable orifices
- Gas handling capability
- Single or multi stage
- Patented Technology

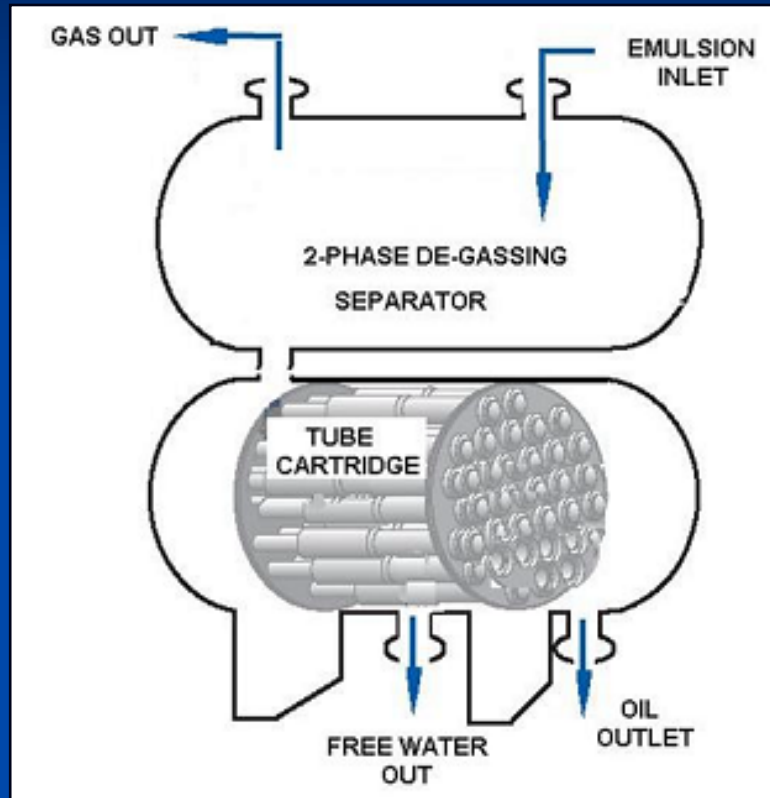


# MAXIS Design Features

- MAXIS can be adapted to suit production changes,
- The compact design and high hydraulic loading capability provide capital and operating savings over conventional processes.

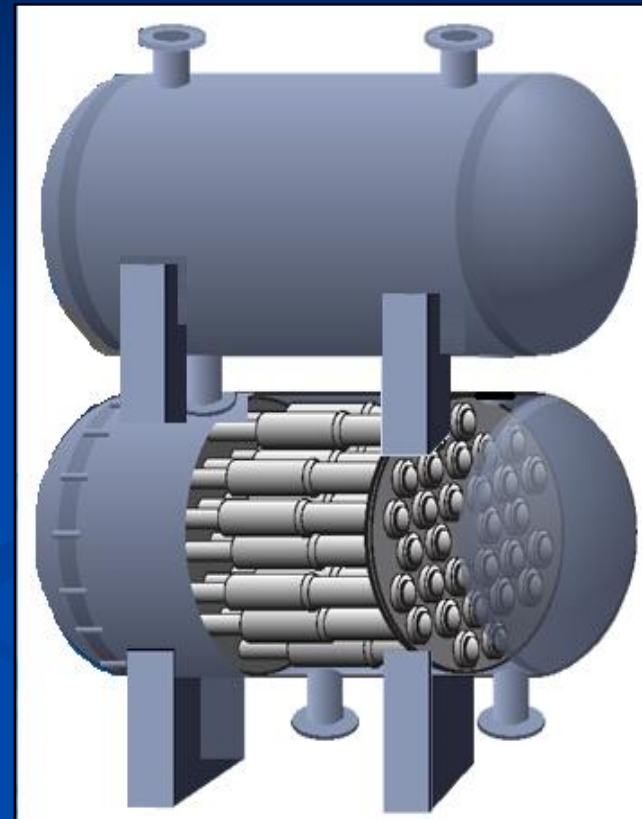
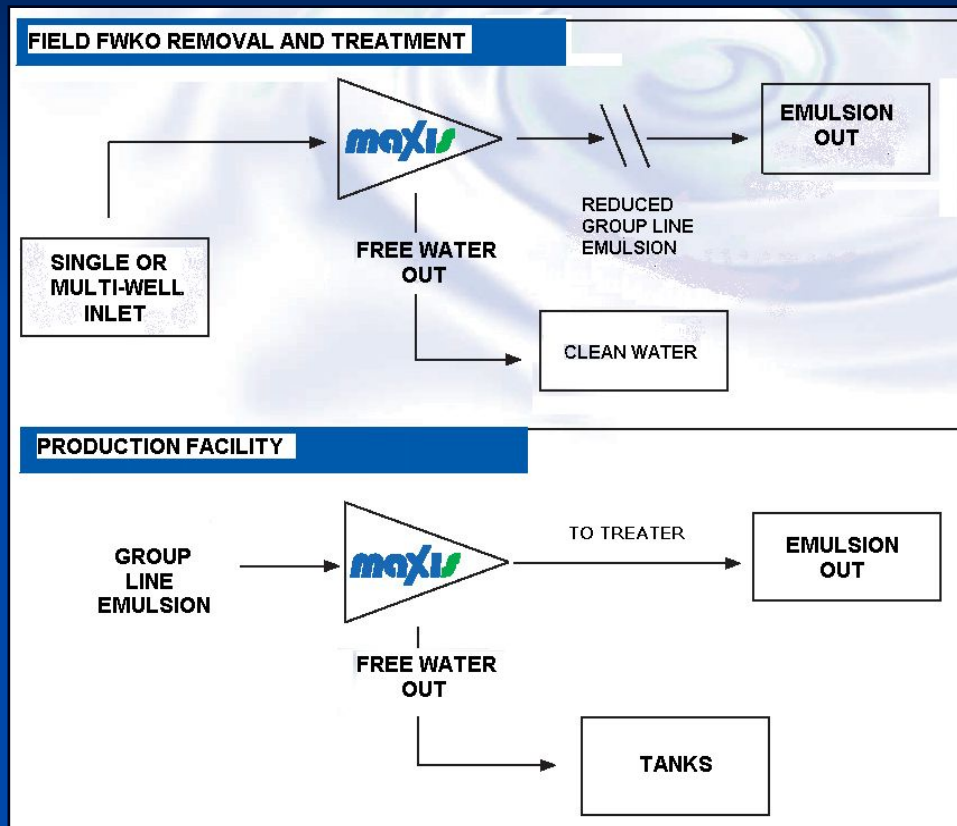
MAXIS is ideal for the following applications:

# MAXIS Multiphase Dewatering



- High Throughput Capacity
- Cyclonic Action – Allows separations to complete in seconds NOT minutes or hours
- Continuous Flow

# MAXIS Multiphase Dewatering



FREE WATER can be treated and removed prior to Group Line shipment or after

# MAXIS Multiphase Dewatering

MAXIS Cyclonic Separation has several advantages over gravity based settling systems.

Here are just a few to consider:



# MAXIS Multiphase Dewatering

- No Process Heat Required
- Efficient separation can normally be accomplished in a single pass unit at ambient well conditions, offering significant operating savings

# MAXIS Multiphase Dewatering

- No Chemicals Required
- Separations can normally be performed without the use of water clarifier or demulsifier chemical additives

# MAXIS Multiphase Dewatering

## Compact

- Small diameter pressure vessels provide efficient high volume loading with a small footprint



## GENOIL MAXIS MAX-0-36



6,300 TO 18,900 BBL/D CAPACITY

**(DEWATERING UNIT)**

[www.genoil.net](http://www.genoil.net)



# MAXIS Multiphase Dewatering

- Low Operation & Differential Pressures
- Process driven by existing system energy – no additional pumps are required
- Operating Differential Pressures typically ranging from 0.25 bar (3.5 psi) to 0.75 bar (10 psi)

# MAXIS Dewatering Performance

- MAXIS is best utilized in Dewatering flows located close to producing wells prior to Group Line transport or as an Inlet Separation (FWKO) means ahead of Oil Treaters
- In either application, Dewatering using the MAXIS technology is targeted at removing a minimum of 85% to 95% of free water volumes.
- This results in a significant reduction in fluid volumes to existing facilities.



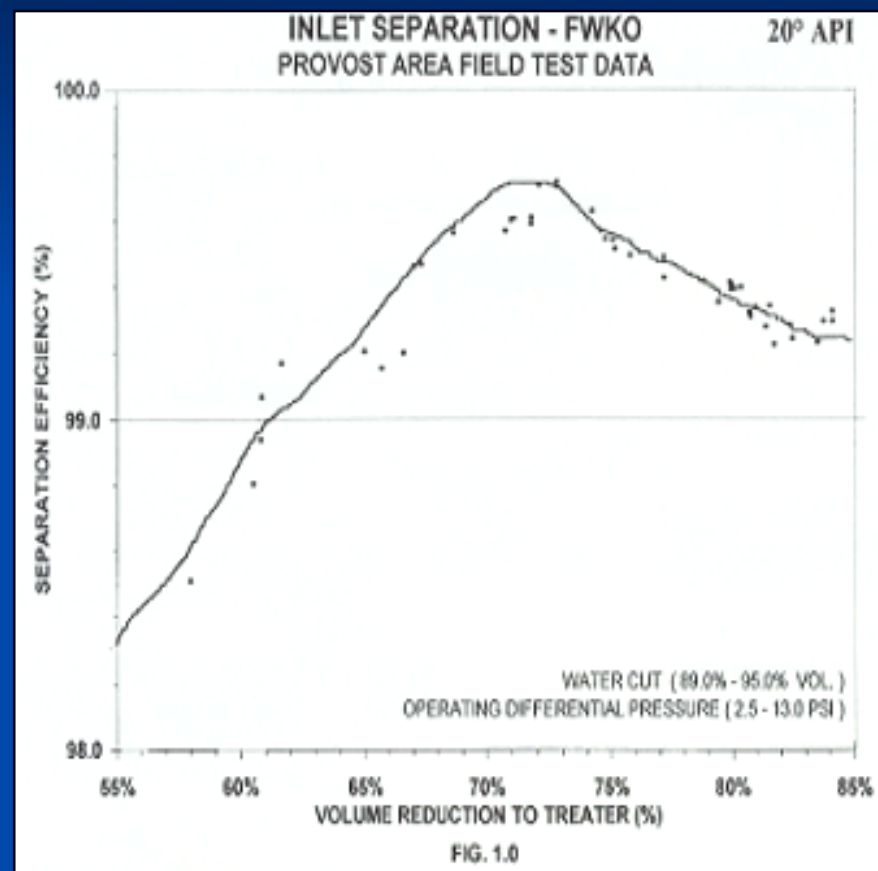
# MAXIS Dewatering Performance

- Typically a single pass system, the MAXIS is able to achieve the following:

- For Medium to Light (18-30 ° API) Crude containing 80% or more H<sub>2</sub>O Outlet Water Qualities are typically in the range of 40 to 70 ppm

- For Light Crude (+30 ° API) containing 80% or more H<sub>2</sub>O Outlet Water Qualities are typically less than 20 ppm

- Additional passes can reduce the Oil in Water content to TRACE (< 5 ppm) amounts



# De-Oiling

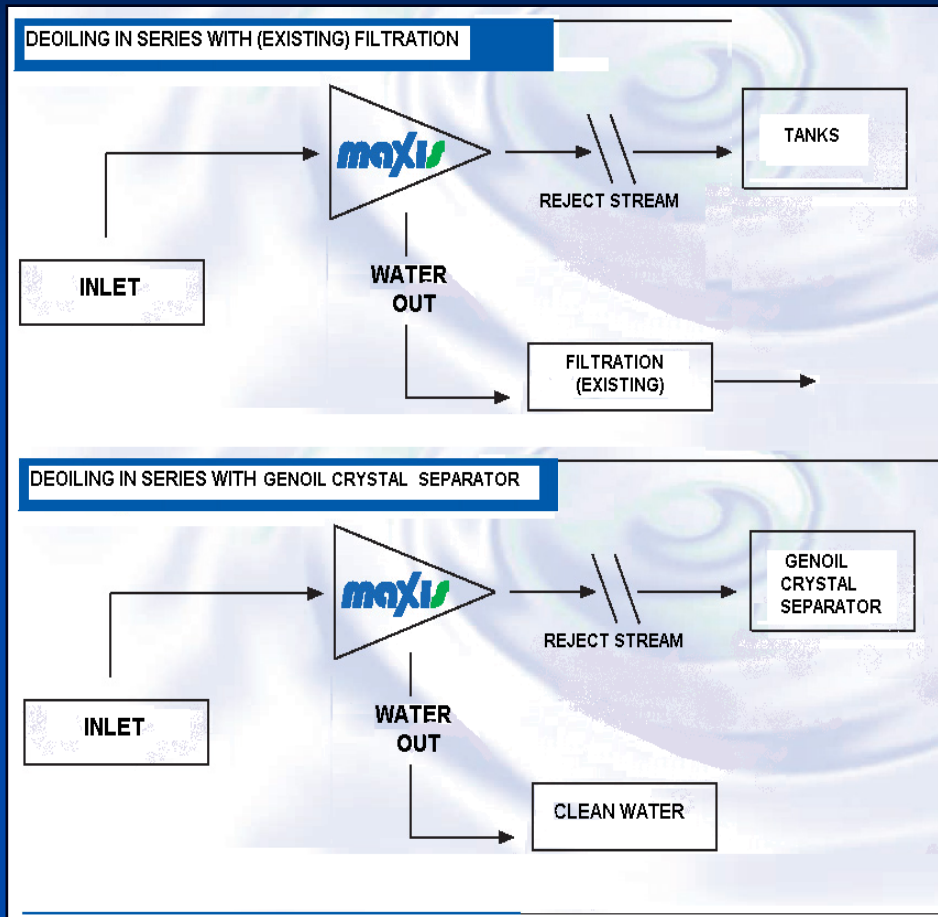


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# MAXIS De-Oiling



Oily Water can be treated  
prior to injection

OR

In series with or without  
other water treatment  
technology.

**MAXIS System Capacities range from :  
50 BBL/DAY TO 500,000 BBL/DAY**

- High Throughput Capacity

MAXIS offers the benefits of cyclonic action versus gravity settling

- Available in Single or Multi-Unit Modules for Field Installation, Maritime Platforms, Industrial Wastewater Treatment or Refineries
- Reliable and Ready for Installation

MAXIS Systems are Available with Mechanical Designs including:

ANSI 150, 300, 600, 900, 1500 & 2500 Ratings

**GENOIL MAXIS MAX-O-48**



**15,000 TO 35,000 BBL/D CAPACITY  
(DEWATERING UNIT)**

[www.genoil.net](http://www.genoil.net)



# PROVEN TECHNOLOGY

The Genoil MAXIS Separator is fully tested and has been operational in Canadian oilfields since 1995

Tested and Proven with 12°-40° API Crude



# Benefits

- Lower Capital Costs
- Lower Operating Costs
  - Reduced Chemical Cost
  - No Consumables (filter cartridges/media)
- Reduced Fuel gas consumption
- Normally the MAXIS cyclonic separation unit requires no added thermal energy in order to perform liquid/liquid separations.

*As a result, an added side benefit to lower thermal requirements is lower NOX emissions.*

# Benefits

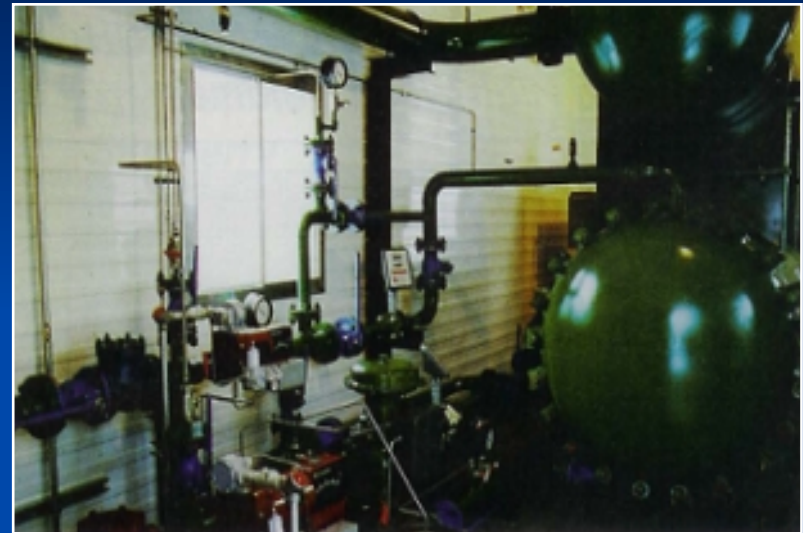
- Reduced Downtime – High Quality fabrication and materials ensure durability and long life
- Ease of Access for Maintenance
- No Moving Parts - ensures durability and minimal downtime

# Benefits

- Removable parts & interchangeability allow the MAXIS to be:
  - Adjustable to varying production volumes and oil concentrations
  - Adaptable to variable inlet flow rates
  - Easily maintained

# Packaging

Complete skid mounted system



MAXIS units come complete with all required piping, valves and controls and if required, buildings and/or site enclosures.

# Quality Control Specifications

## Design Codes and Standards

All Genoil MAXIS Installations are designed to be in accordance with:

- NEMA, IEEE, Underwriters Laboratories (UL)
- Federal Occupational Safety and Health Act (OSHA) regulations
- ASME Boiler and Pressure Vessel Code Sections I, VIII, IX and B31.4
- NACE RP-01-75-75 MR-01-75 (if required)
- Genoil Engineering and Design Specifications

### •ASTM (American Society for Testing of Materials) Standards Institute)

- |         |        |
|---------|--------|
| •SA-36  | SA53   |
| •SA-105 | SA-106 |
| •SA-193 | SA194  |
| •SA234  | SA-283 |
| •SA-285 | SA516  |

### ANSI (American National

- |       |       |
|-------|-------|
| B16.5 | B16.9 |
| B31.1 | B31.3 |
| B31.4 | B31.8 |

### •SSPC (Steel Structures Painting Council)

- |            |           |
|------------|-----------|
| •SSPC-SP-5 | SSPC-SP7  |
| •SSPC-SP6  | SSPC-SP10 |

# Dimensions & Capacity Specs

Model No.	DIMENSIONS						MIN. CAPACITY		MAX. CAPACITY		APPROX. WEIGHT*	
	Diameter (mm)	Diameter (inches)	Length (mm)	Length (inches)	Height to Centerline (mm)	Height to Centerline (inches)	(m <sup>3</sup> /day)	bbl/day	m <sup>3</sup> /day	bbl/day	kg	pounds
MAX-O-18	457	18,0	2500	98,4	900	35	300	1,887	400	2,516	570	1,254
MAX-O-24	610	24,0	2500	98,4	1000	39	500	3,145	800	5,031	810	1,782
MAX-O-30	762	30,0	2500	98,4	1,075	42	900	5,660	1,800	11,320	1,340	2,948
MAX-O-36	915	36,0	2500	98,4	1,370	54	1,900	11,949	3000	18,867	2,050	4,510
MAX-O-48	1220	48	2500	98,4	1,500	59	3,100	19,496	4400	27,672	2,900	6,380
MAX-O-54	1370	54	2500	98,4	1,675	66	4,500	28,301	6100	38,363	3,600	7,920
MAX-O-60	1524	60	2500	98,4	2,050	81	6,200	38,992	8500	53,457	4,650	10,230
MAX-O-66	1676	66	2500	98,4	2,125	84	8,600	54,085	10000	62,890	5,300	11,660

\*Vessel only.



# Offices

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