CETCO
ENERGY SERVICES
A MINERALS TECHNOLOGIES COMPANY

Go with the Hi-Flow™:

Unlocking Production Hidden Behind Your Process Constraints

Bennie Eldred
Global Applications Engineering Manager
May 5, 2026

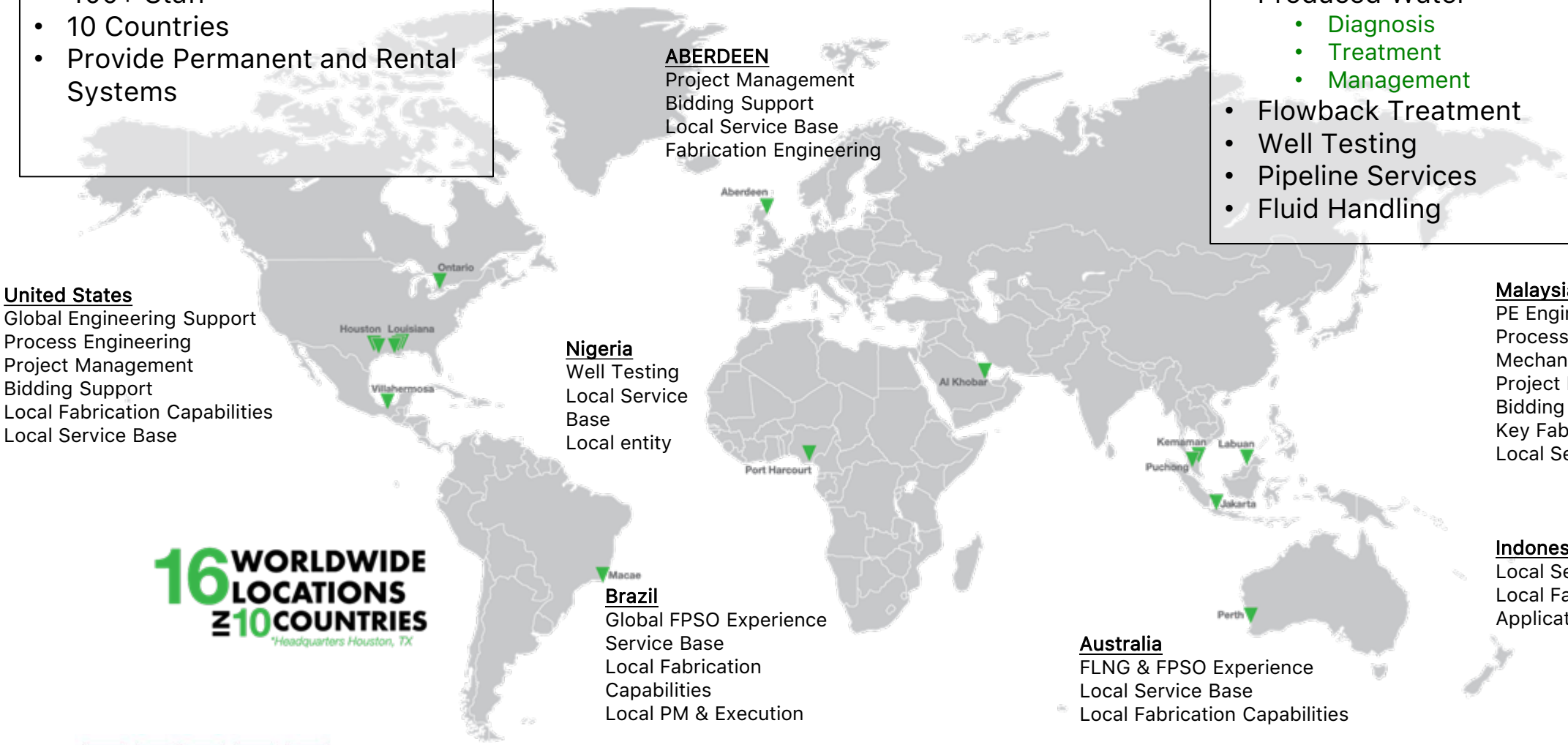
Global Expertise

Company Overview

- 400+ Staff
- 10 Countries
- Provide Permanent and Rental Systems

Services

- Produced Water
  - Diagnosis
  - Treatment
  - Management
- Flowback Treatment
- Well Testing
- Pipeline Services
- Fluid Handling



United States
Global Engineering Support
Process Engineering
Project Management
Bidding Support
Local Fabrication Capabilities
Local Service Base

ABERDEEN
Project Management
Bidding Support
Local Service Base
Fabrication Engineering

Nigeria
Well Testing
Local Service Base
Local entity

Brazil
Global FPSO Experience
Service Base
Local Fabrication Capabilities
Local PM & Execution

Australia
FLNG & FPSO Experience
Local Service Base
Local Fabrication Capabilities

Malaysia
PE Engineering Office
Process Engineering Design
Mechanical Design
Project Management
Bidding & Proposals
Key Fabrication Partnerships
Local Service Base

Indonesia
Local Service Base
Local Fabrication Capabilities
Applications Engineering / CFD

16 WORLDWIDE LOCATIONS IN 10 COUNTRIES
*Headquarters Houston, TX

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Hi-Flow Hydrocarbon Removal Media

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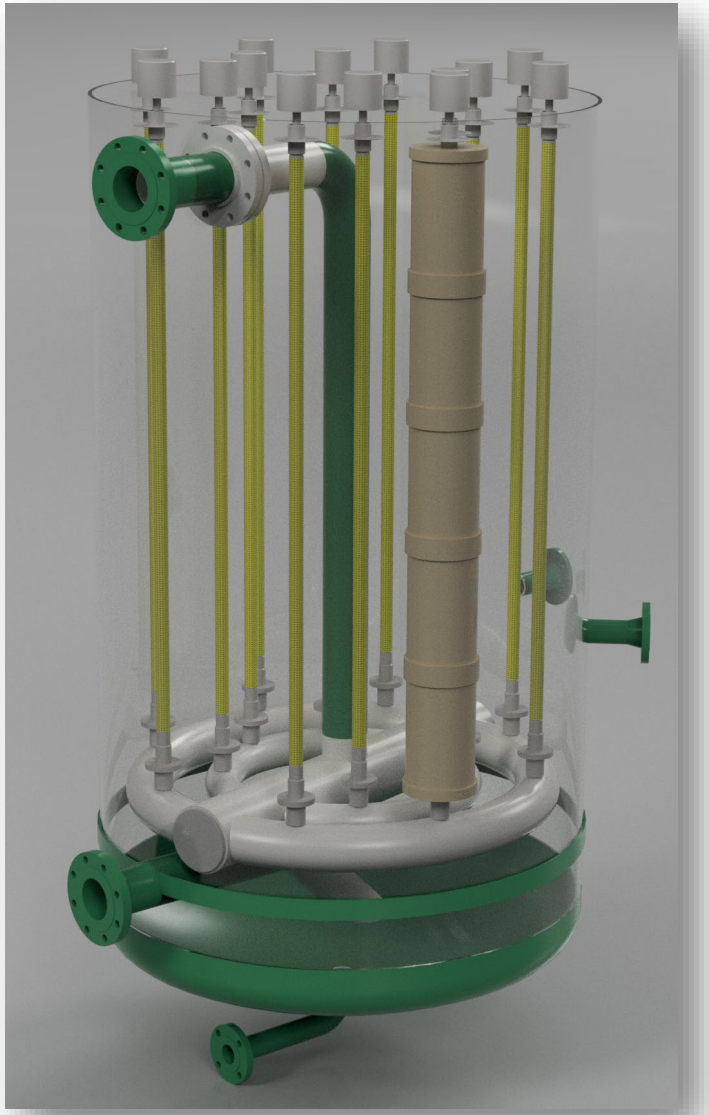
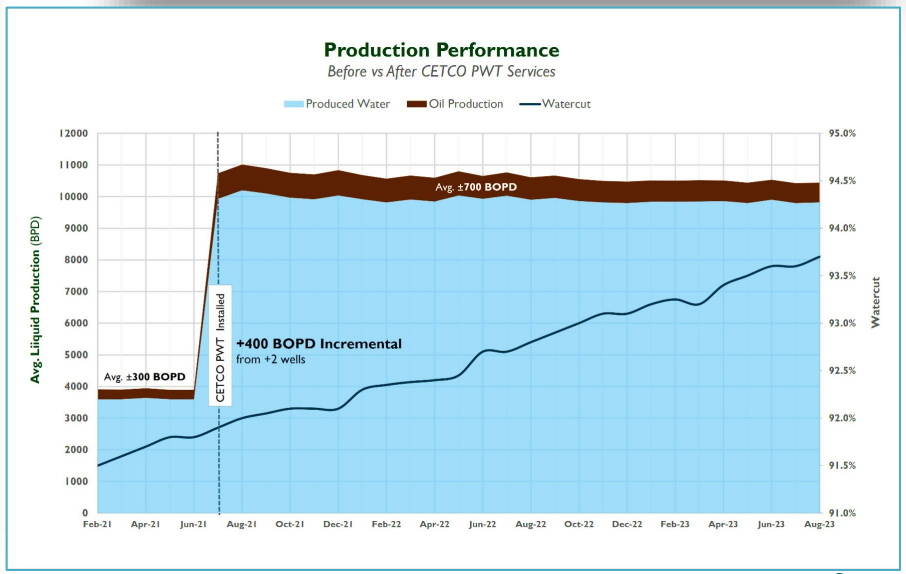
Hi-Flow Media Overview

- Polymer Coated Non-Woven Fiber
- Canisterized Coalescing Media
- Long Media Life and High Flowrate
- Vessel Flowrate up to 40,000 BWPD
  - Rental
  - Capital Builds
- Robust Application Window
  - Inlet OiW Fluctuations
  - Flowrate Changes
  - Pressure Fluctuations
  - Temperature
  - Droplet Size
- Varied Project Applications
  - Produced Water
  - Flowbacks
  - Pipeline Operations

Performance Benefits

- Increased Production Rates
- Reduced Well Shut-ins
- Low OPEX
- Disposal and Compliance Cost Reduction





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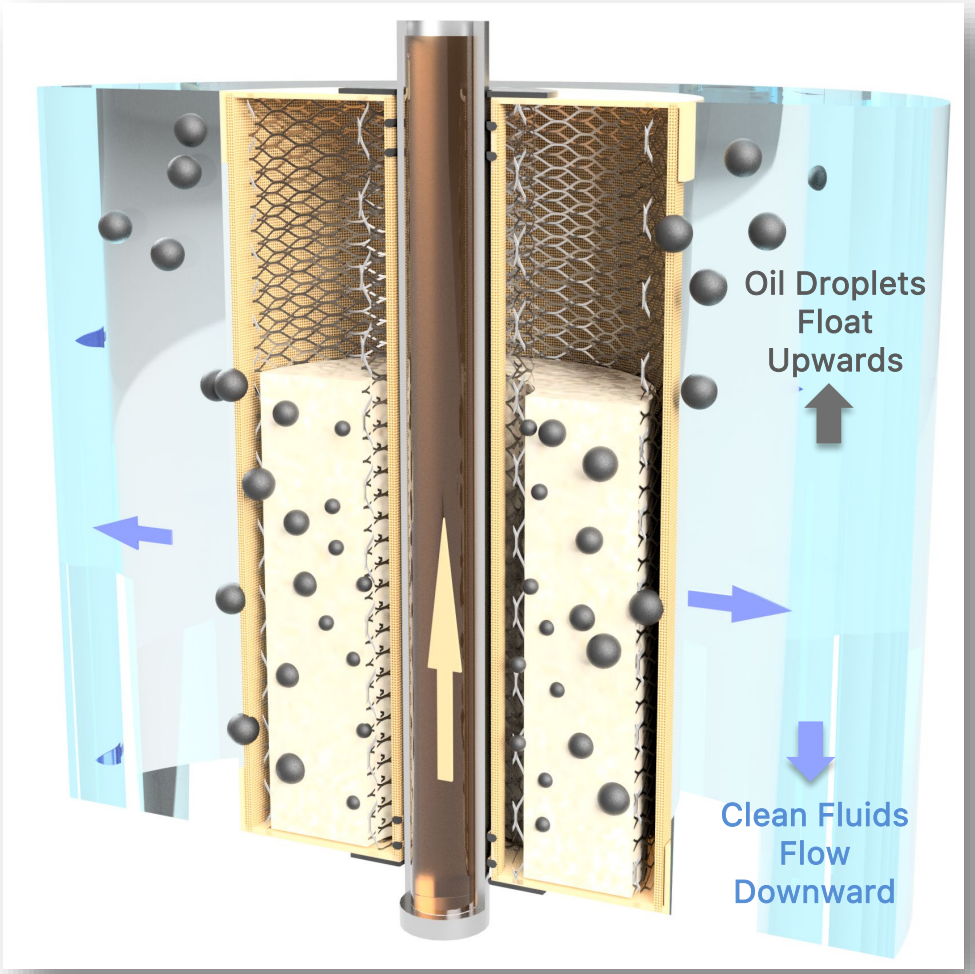
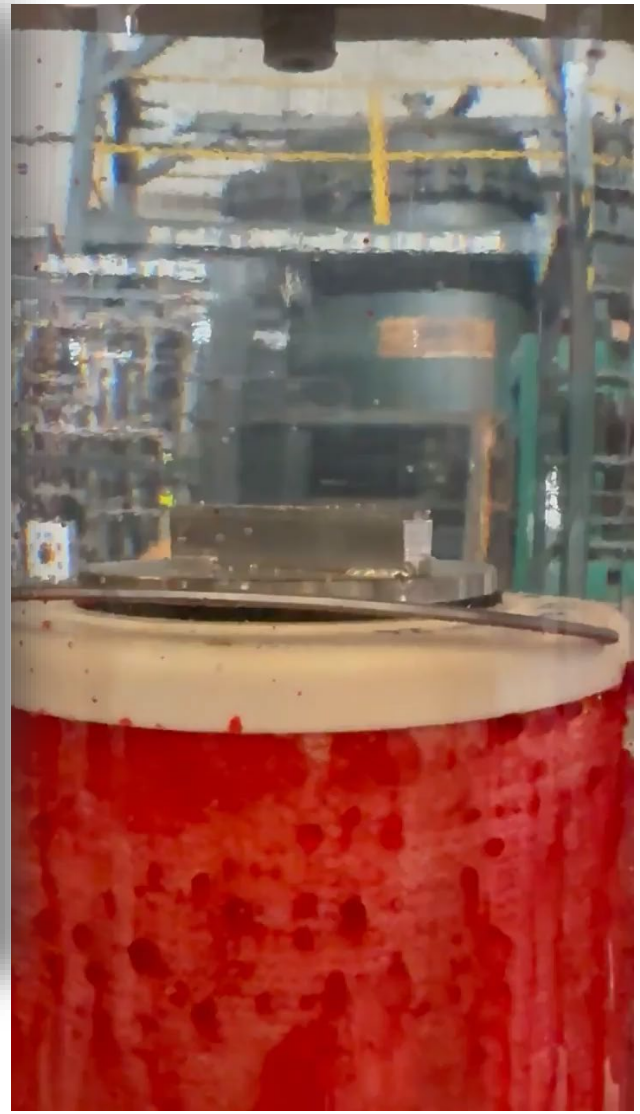
Mechanics of Operation





Operation

- Canisters installed on Internal Risers
- Flow from Inside Riser through Filter to Vessel
- Polymeric Media adsorbs Oil Droplets onto the Media Fibers
- Droplets move Outward through Media Bed, Droplet size increases
- Droplets float away from Canister Shell
- Oil Coalesces at Vessel Head for Return to Production

Operational Practices

- Vessel Design Pressure: 8-17 barg
- Vessel Operating Pressure: 1.4 – 4 barg
- Low Pressure Differential: <0.3 barg
- Empty Bed Contact Time (EBCT) of 20 sec
- 20µ Solids Filters upstream for Media Protection
- Backwash to Replenish Media
- Unlimited Turndown

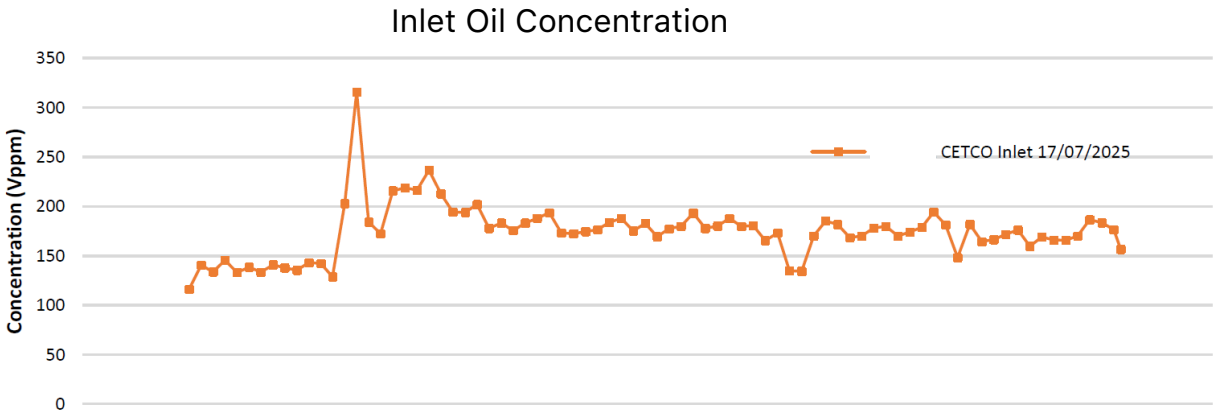
ORCA

Objective Root Cause Analysis (ORCA)

- Scientific Solutions through Personalized Analytical Study
- Holistic Analysis of On-Site Process Systems
- Determination of System Functionality and Efficiency
- Root Cause Investigation of System Problems
- Benchtop Trials of Filtration Technologies
- Scalable to Client's Needs

Hi-Flow Application

- Real-Time Data Direct from Technology Application on Live Fluids
- Quantification of Efficiency Data
- Performance Optimization
  - Fluid Changes
  - Flowrates
  - Pressures
  - Chemicals
  - Solid Loading



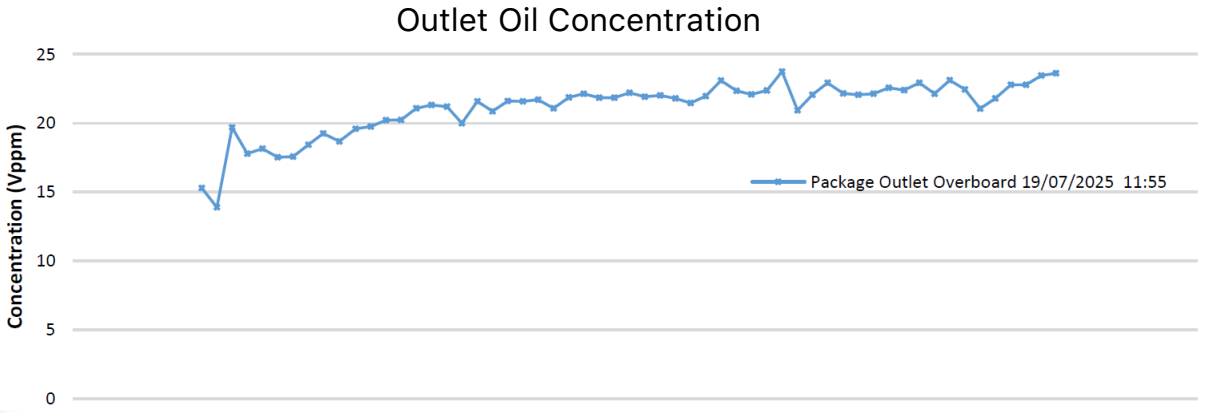


Table 3-4 Benchtop Oil in Water Removal Results and Package Performance Assessment

Date & Time	Package Feed OIW (mg/L)	10micron Filter Pod Outlet OIW (mg/L)	Benchtop Hi-Flow Package Outlet OIW (mg/L)	Package Efficiency (%)
17/07/2025 09:05	397.7	518.8	9.0	98%
17/07/2025 09:45	466.5	491.2	43.9	91%

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Questions?

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Description	Skid Dimensions			Weights			Pressure and Temperature		Calculated Flow per Vessel		
	L	W	H	Empty	Operating	Deck Loading	Design Pres.	Design Temp.	BPD	BPM	m^3/hr
Malaysia	**m**	**m**	**m**	**kg**	**kg**	**kg/m²**	**barg**	**°C**			
IFV-RFV 2000	3.30	2.40	3.40	7,500	10,500	1,321	10	0 / 100	4,000	2.8	26.5
IFV/RFV 4000	4.90	2.30	3.90	21,800	31,980	2,838	17.2	10 / 100	21,012	14.6	139.2
IFV/RFV 4000	4.90	2.30	3.90	21,800	31,980	2,838	17.2	10 / 100	21,012	14.6	139.2
IFV/RFV 4000	4.90	2.40	3.00	10,500	17,000	1,456	17.2	0 / 100	21,012	14.6	139.2
RFV 4000	4.91	2.38	3.94	10,500	17,000	1,456	17.2	0 / 100	13,596	9.4	90.1
IFV 4000	4.90	2.30	3.90	16,000	24,000	2,129	17.2	-10 / 100	21,012	14.6	139.2
IFV 4000	4.90	2.30	3.90	16,000	32,000	2,839	17.2	-10 / 100	21,012	14.6	139.2
IFV 5000	5.60	2.80	3.80	19,600	30,000	1,910	17.2	-10 / 100	29,664	20.6	196.5
IFV 5000	5.60	2.80	3.80	21,140	30,000	1,910	17.2	-10 / 100	29,664	20.6	196.5
IFV 5000	5.60	2.80	3.80	19,300	30,000	1,910	17.2	-10 / 100	29,664	20.6	196.5
IFV 5000	5.80	2.80	3.80	16,330	28,000	1,724	17.2	-10 / 100	29,664	20.6	196.5
Indonesia	**m**	**m**	**m**	**kg**	**kg**	**kg/m²**	**barg**	**°C**			
IFV 4000	4.90	2.30	3.90	16,000	24,000	2,129	17.2	-10 / 100	21,012	14.6	139.2
HI FLOW TEST SKID	1.70	1.70	1.80	1,135	1,335	460	10		325	0.2	2.2

Description	Skid Dimensions			Weights			Pressure and Temperature		Calculated Flow per Vessel		
	L	W	H	Empty	Operating	Deck Loading	Design Pres.	Design Temp.	BPD	BPM	m^3/hr
Aberdeen	**m**	**m**	**m**	**kg**	**kg**	**kg/m²**	**barg**	**°C**			
IFV 1000 #1	2.35	1.16	2.02	1,500	2,750	1,009	10.34	-20 / 65	210	0.15	1.4
IFV 1000 #2	2.20	1.15	2.11	1,230	2,050	810	34	-20 / 60	210	0.15	1.4
IFV 1800	2.45	2.39	3.35	5,600	5,300	907	10.3	-10 / 100	2,500	1.7	16.6
IFV 4000 #1	4.92	2.38	3.36	9,530	17,000	1,448	16.5	0 / 100	21,012	14.6	139.2
IFV 4000 #2	4.90	2.38	3.70	12,250	18,750	1,608	16.5	-10 / 100	21,012	14.6	139.2
IFV 4000 #3	4.91	2.38	3.95	12,250	20,500	1,754	17.2	0 / 65	21,012	14.6	139.2

Description	Skid Dimensions			Weights			Pressure and Temperature		Calculated Flow per Vessel		
	L	W	H	Empty	Operating	Deck Loading	Design Pressure	Design Temp.	BPD	BPM	m^3/hr
US	**ft**	**ft**	**ft**	**lb**	**lb**	**psf**	**psi**	**°F**			
IFV-2000	11'-0"	7'-0"	9'-6"	13,200	18,539	241	120	-20 / 250	4,000	2.8	26.5
IFV-4000	16'-0"	7'-10"	11'-6"	18,000	28,422	227	120-150	-20 / 250	13,596	9.4	90.1
IFV / RFV - 4000	16'-0"	8'-0"	11'-6"	18,000	28,422	222	150	-20 / 250	17,304	12.0	114.6