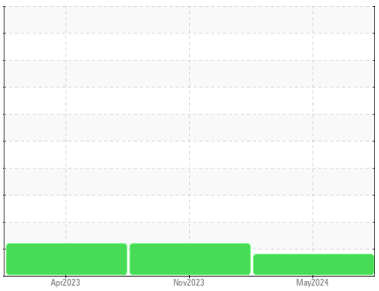
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Marcus Hook/Cryogenic/Compressor
Machine Id
CRYOGENIC COMPRESSOR 20-C-301A
Component
Rotary Compressor
Fluid
SHELL TURBO S4 GX 46 (220 GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**TO90002168**	TO60001810	TO90003024
Sample Date		Client Info		**09 May 2024**	05 Nov 2023	25 Apr 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ATTENTION**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>70	**0**	0	<1
Chromium	ppm	ASTM D5185m	>10	**0**	0	0
Nickel	ppm	ASTM D5185m		**0**	0	0
Titanium	ppm	ASTM D5185m		**0**	0	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>3	**0**	0	0
Lead	ppm	ASTM D5185m	>4	**0**	0	6
Copper	ppm	ASTM D5185m	>20	**<1**	0	<1
Tin	ppm	ASTM D5185m	>3	**0**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	0	0
Barium	ppm	ASTM D5185m	0	**0**	0	0
Molybdenum	ppm	ASTM D5185m	0	**0**	0	0
Manganese	ppm	ASTM D5185m	0	**0**	0	0
Magnesium	ppm	ASTM D5185m	0	**0**	0	<1
Calcium	ppm	ASTM D5185m	0	**0**	<1	0
Phosphorus	ppm	ASTM D5185m	75	**52**	75	69
Zinc	ppm	ASTM D5185m	10	**0**	0	<1
Sulfur	ppm	ASTM D5185m	75	**0**	75	67

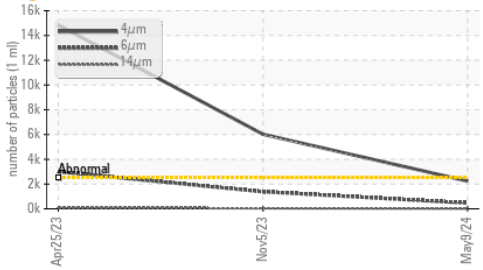
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>45	**<1**	0	0
Sodium	ppm	ASTM D5185m		**2**	<1	0
Potassium	ppm	ASTM D5185m	>20	**0**	0	<1
Water	%	ASTM D6304	>0.6	**0.001**	0.003	0.004
ppm Water	ppm	ASTM D6304		**15**	30.8	45.6

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**2235**	▲ 6022	▲ 14844
Particles >6µm		ASTM D7647	>320	● **467**	▲ 1381	▲ 2996
Particles >14µm		ASTM D7647	>80	**10**	39	69
Particles >21µm		ASTM D7647	>20	**2**	11	9
Particles >38µm		ASTM D7647	>4	**0**	0	1
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>18/15/13	● **18/16/10**	▲ 20/18/12	▲ 21/19/13

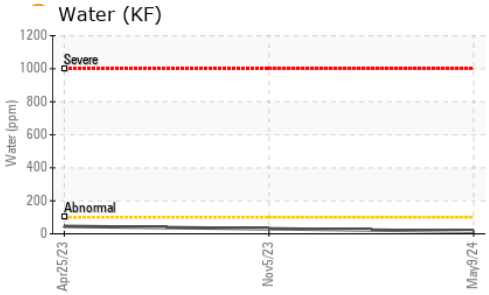
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.15	**0.108**	0.119	0.086

OIL ANALYSIS REPORT

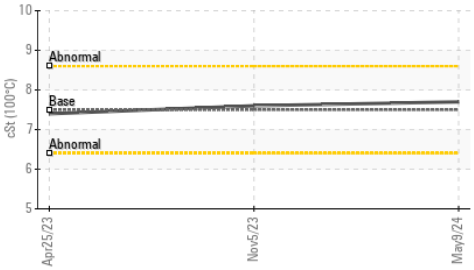
Particle Trend



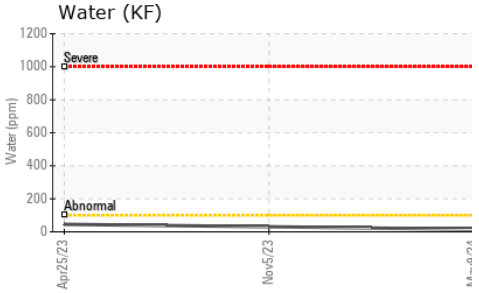
Water (KF)



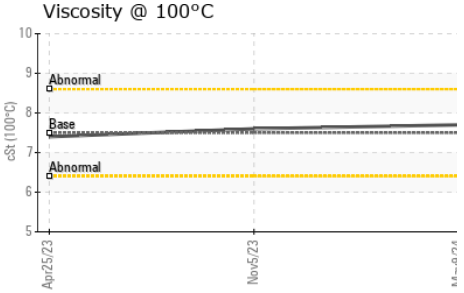
Viscosity @ 100°C



Water (KF)



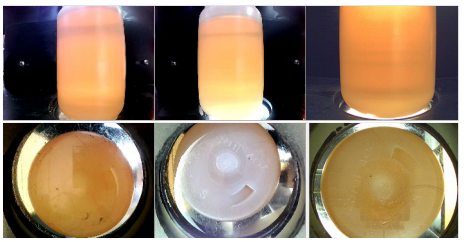
Viscosity @ 100°C



VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.6	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

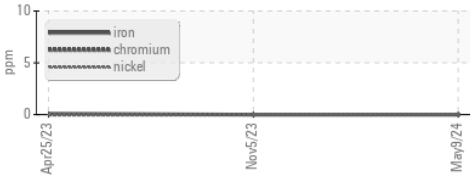
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	43.5	**44.0**	43.9	43.7
Visc @ 100°C	cSt	ASTM D445	7.50	**7.7**	7.6	7.4
Viscosity Index (VI)	Scale	ASTM D2270	139	**144**	141	134

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

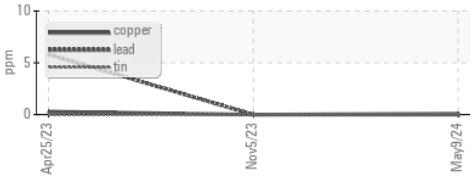


GRAPHS

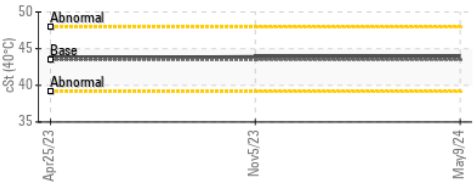
Ferrous Alloys



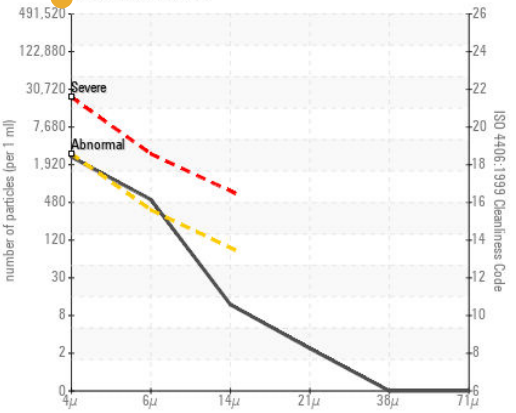
Non-ferrous Metals



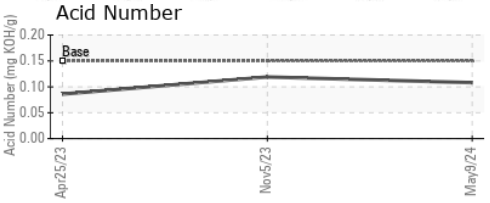
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TO90002168
Lab Number : 06182935
Unique Number : 11034261
Test Package : IND 2 (Additional Tests: KF, KV100, PrtCount, VI)

Received : 17 May 2024
Tested : 20 May 2024
Diagnosed : 21 May 2024 - Don Baldridge

ENERGY TRANSFER - MARCUS HOOK
2ND & GREEN STREETS
MARCUS HOOK, PA
US 19061
Contact: CHRISTOPHER HOFFA
christopher.hoffa@energytransfer.com
T:
F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.
** - Denotes test methods that are outside of the ISO 17025 scope of accreditation.*
Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: ETCMHOOK [WUSCAR] 06182935 (Generated: 05/21/2024 11:53:12) Rev: 1

Submitted By: ERIC THORNTON