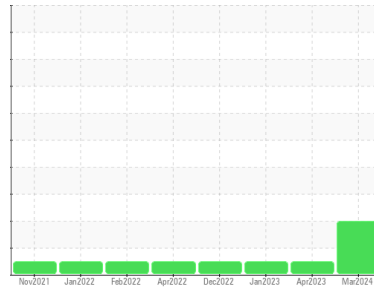




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

BARGE TRANSPORTATION

Machine Id

ROGER WILLIAMSON - SGB (S/N 2253016)

Component

Starboard Gearbox

Fluid

PETRO CANADA PRODURO TO-4 SAE 30 (--- 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 no indication of any contamination in the oil.

Fluid Condition

The oil viscosity is lower than normal. Additive levels indicate the addition of a different brand, or type of oil. Confirm oil type.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		KFS0002996	KFS0003170	KFS0002850
Sample Date	Client Info		14 Mar 2024	24 Apr 2023	24 Jan 2023
Machine Age	hrs	Client Info	40839	41762	39812
Oil Age	hrs	Client Info	1000	1400	1000
Oil Changed	Client Info		Diff Oil	Not Changd	Not Changd
Sample Status			ATTENTION	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>200	3	4	2
Chromium	ppm	ASTM D5185m	>10	<1	0	0
Nickel	ppm	ASTM D5185m	>10	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	<1	<1
Lead	ppm	ASTM D5185m	>50	<1	0	<1
Copper	ppm	ASTM D5185m	>200	8	3	8
Tin	ppm	ASTM D5185m	>10	1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	2	0	61	217
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	0	<1	7	22
Manganese	ppm	ASTM D5185m	9	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1	4	730	176
Calcium	ppm	ASTM D5185m	3131	194	1270	2085
Phosphorus	ppm	ASTM D5185m	1194	174	1020	695
Zinc	ppm	ASTM D5185m	1281	34	1191	775
Sulfur	ppm	ASTM D5185m	3811	1108	4648	3841

CONTAMINANTS

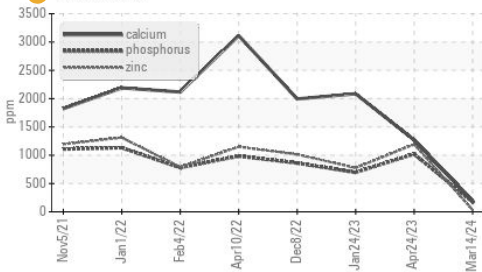
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	2	2	6
Sodium	ppm	ASTM D5185m		<1	1	3
Potassium	ppm	ASTM D5185m	>20	2	0	0

VISUAL

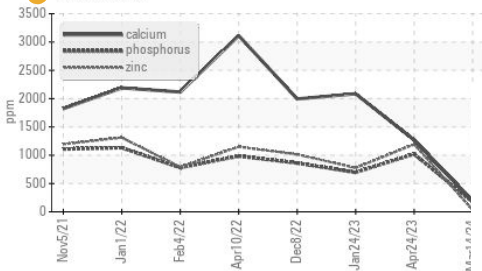
	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	MODER	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

OIL ANALYSIS REPORT

Additives



Additives



FLUID PROPERTIES

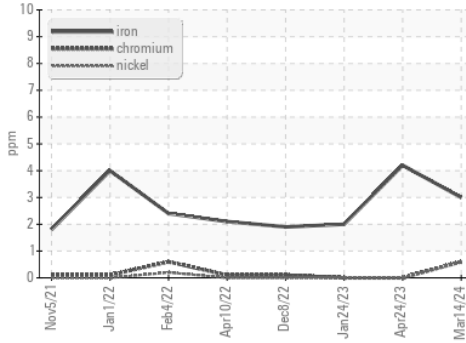
method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D445 88.5	96.8	128	129

SAMPLE IMAGES

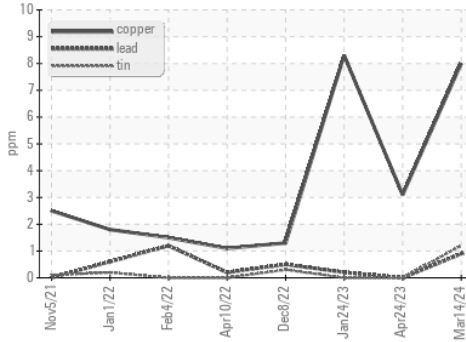
method	limit/base	current	history1	history2	
Color			no image	no image	no image
Bottom			no image	no image	no image

GRAPHS

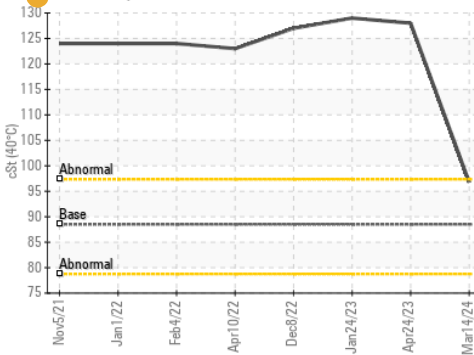
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KFS0002996 **Received** : 09 Apr 2024
Lab Number : **06143437** **Tested** : 10 Apr 2024
Unique Number : 10968245 **Diagnosed** : 12 Apr 2024 - Jonathan Hester
Test Package : FLEET

M/V ROGER WILLIAMSON
 3501 STARLITE DR
 PADUCAH, KY
 US 42003
 Contact: Service Manager

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)

T:
F: