



OIL ANALYSIS REPORT

WEAR	ATTENTION
CONTAMINANTS	ABNORMAL
OIL CONDITION	NORMAL

Machine Id
PP632.010.17 STBD VOITH UNIT (S/N 3434)
 Component
Gearbox
 Fluid
PETRO CANADA ENDURATEX EP 150 (4500 LTR)

RECOMMENDATION

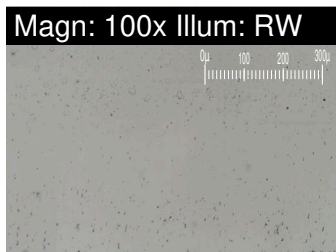
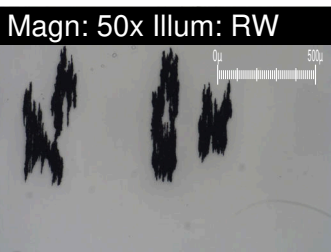
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

WEAR

Iron ppm levels are noted. All other component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0895914	WC0785222	WC0523949
Sample Date		Client Info		25 Jun 2024	06 May 2023	23 Jun 2021
Machine Age	hrs	Client Info		0	38066	35052
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	200	0
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Not Changed	Not Changed	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

PQ		ASTM D8184*		0	0	---
Iron	ppm	ASTM D5185(m)	>150	10	8	6
Chromium	ppm	ASTM D5185(m)	>10	0	0	0
Nickel	ppm	ASTM D5185(m)	>10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>5	<1	0	<1
Lead	ppm	ASTM D5185(m)	>65	1	3	2
Copper	ppm	ASTM D5185(m)	>80	20	26	21
Tin	ppm	ASTM D5185(m)	>8	2	3	3
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Large Particles		DR-Ferr*		69.2	48.6	---
Small Particles		DR-Ferr*		47.0	28.1	---
Total Particles		DR-Ferr*	>---	116.2	76.7	---
Large Particles Percentage	%	DR-Ferr*		19.1	26.7	---
Severity Index		DR-Ferr*		1536	996	---
Ferrous Rubbing	Scale 0-10	ASTM D7684*		4	3	
Ferrous Sliding	Scale 0-10	ASTM D7684*				
Ferrous Cutting	Scale 0-10	ASTM D7684*			1	
Ferrous Rolling	Scale 0-10	ASTM D7684*		2	1	
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*		1		
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*		1		
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				



CONTAMINANTS

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

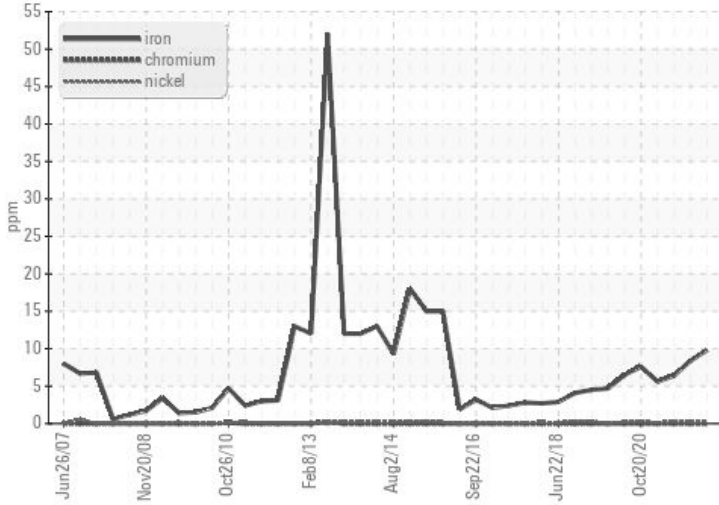
Silicon	ppm	ASTM D5185(m)	>20	2	2	3
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Water		WC Method	>0.2	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	▲ 144832	▲ 44750	● 30655
Particles >6µm		ASTM D7647	>5000	▲ 21410	2157	1042
Particles >14µm		ASTM D7647	>640	410	13	24
Particles >21µm		ASTM D7647	>160	91	3	6
Particles >38µm		ASTM D7647	>40	6	0	0
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 24/22/16	▲ 23/18/11	● 22/17/12
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
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1		
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1	1	

OIL CONDITION

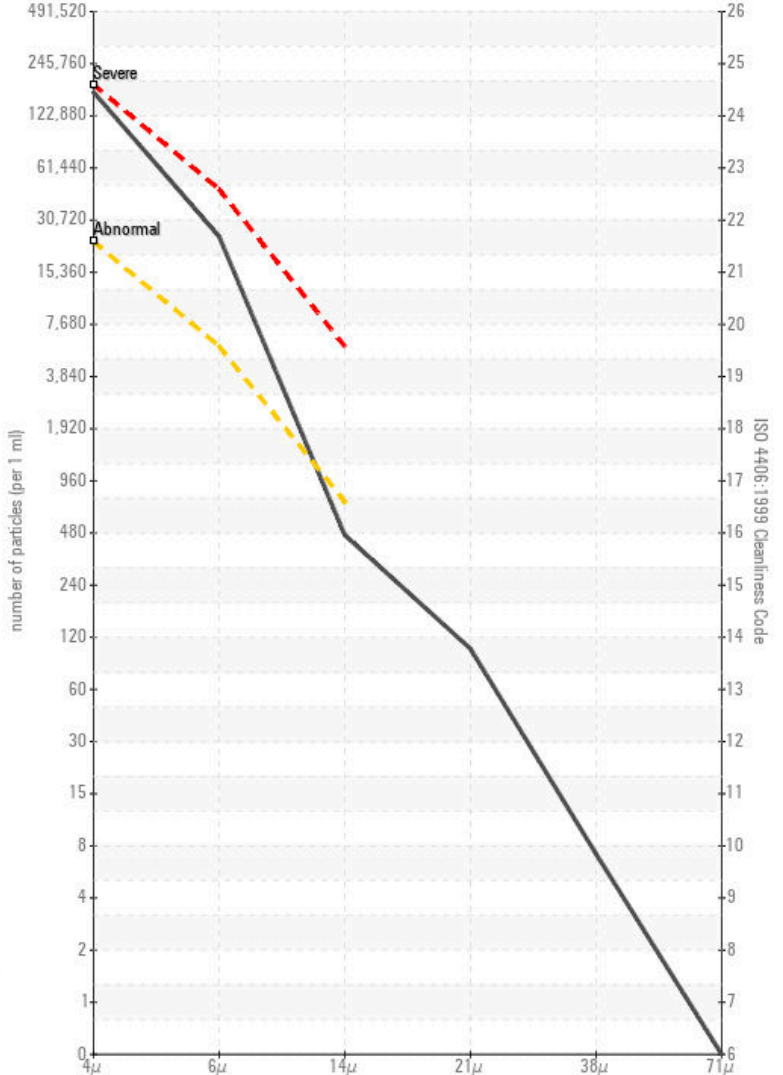
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Sodium	ppm	ASTM D5185(m)		6	6	5
Boron	ppm	ASTM D5185(m)	55	29	41	42
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	<1	<1
Magnesium	ppm	ASTM D5185(m)	2	3	<1	<1
Calcium	ppm	ASTM D5185(m)	6	13	3	5
Phosphorus	ppm	ASTM D5185(m)	250	251	284	246
Zinc	ppm	ASTM D5185(m)	3	14	3	3
Sulfur	ppm	ASTM D5185(m)	7500	7596	8667	9090
Acid Number (AN)	mg KOH/g	ASTM D974*	0.5	0.50	0.46	0.41
Visc @ 40°C	cSt	ASTM D7279(m)	150.0	147	149	▲ 149
Lubricant Degradation	Scale 0-10	ASTM D7684*				

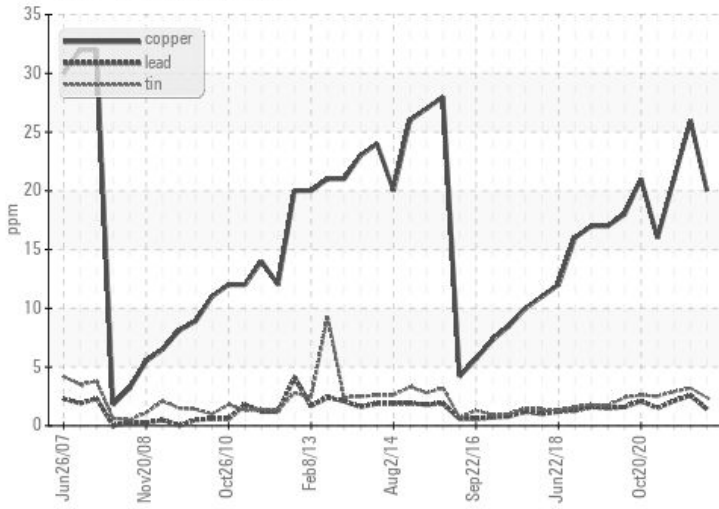
● Ferrous Alloys



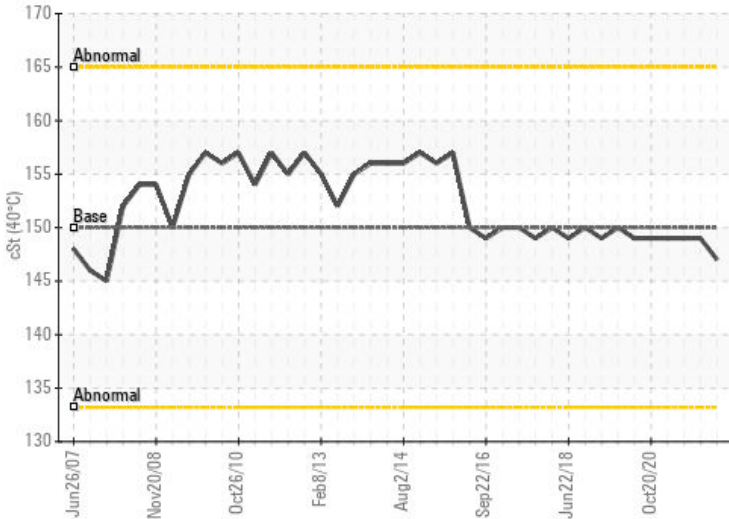
▲ Particle Count



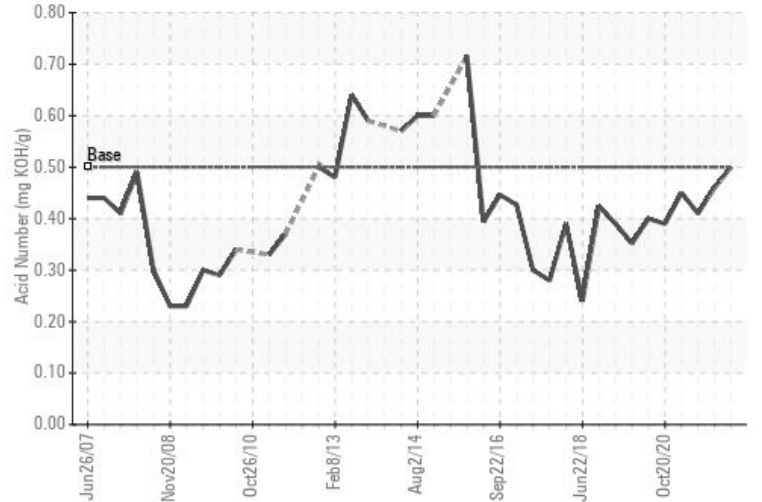
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0895914
Lab Number : 02645314
Unique Number : 5802853
Test Package : MAR 3 (Additional Tests: TAN Man)

Received : 03 Jul 2024
Tested : 09 Jul 2024
Diagnosed : 09 Jul 2024 - Kevin Marson

CANSHIP UGLAND LTD - M/V PLACENTIA PRIDE
 C/O NEWTERM LOGISTICS, 21 GLENCOE
 MOUNT PEARL, NL
 CA A1N 4S6
 Contact: Don Gibbons
 don@canship.com
 T: (709)782-3333
 F: (709)782-0225

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

This page left intentionally blank