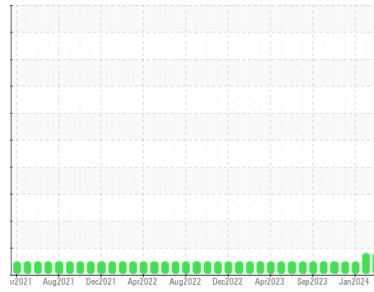


OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area
FARIBAULT
 Machine Id
[FARIBAULT] Unit 03 DB020103E
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON MONOGRADE HD 40W (350 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: 95 Gallons of lube oil added this month.)

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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		PCA0098889	PCA0098887	PCA0098886
Sample Date	Client Info		02 Apr 2024	29 Feb 2024	25 Jan 2024
Machine Age	hrs	Client Info	2334	1723	987
Oil Age	hrs	Client Info	2334	1723	987
Oil Changed	Client Info		Not Chngd	Not Chngd	Oil Added
Sample Status			MARGINAL	MARGINAL	NORMAL

CONTAMINATION	method	limit/base	current	history1	history2
Water	WC Method	>0.1	NEG	NEG	NEG

WEAR METALS	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	3	3	5
Chromium	ppm	ASTM D5185m >4	0	<1	<1
Nickel	ppm	ASTM D5185m >2	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >9	1	2	2
Lead	ppm	ASTM D5185m >30	<1	<1	<1
Copper	ppm	ASTM D5185m >35	4	5	4
Tin	ppm	ASTM D5185m >4	1	<1	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<1	1	2
Barium	ppm	ASTM D5185m	0	0	5
Molybdenum	ppm	ASTM D5185m	2	2	2
Manganese	ppm	ASTM D5185m	<1	0	0
Magnesium	ppm	ASTM D5185m	905	929	896
Calcium	ppm	ASTM D5185m	1026	1019	1025
Phosphorus	ppm	ASTM D5185m	1127	1062	1114
Zinc	ppm	ASTM D5185m	1308	1327	1246
Sulfur	ppm	ASTM D5185m	3003	3079	3390

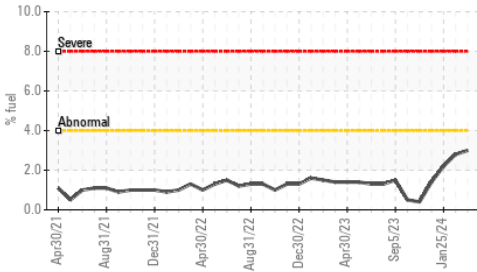
CONTAMINANTS	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	5	5	5
Sodium	ppm	ASTM D5185m	2	1	0
Potassium	ppm	ASTM D5185m >20	0	1	1
Fuel	%	ASTM D3524 >4.0	▲ 3.0	▲ 2.8	2.2

INFRA-RED	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0	0
Nitration	Abs/cm	*ASTM D7624 >20	4.2	4.0	3.7
Sulfation	Abs.1mm	*ASTM D7415 >30	13.5	13.5	12.9

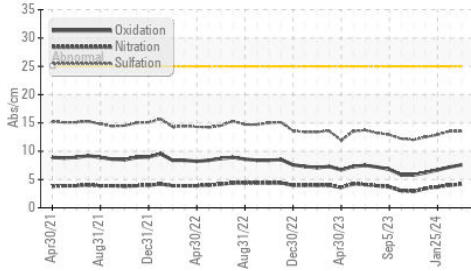
FLUID DEGRADATION	method	limit/base	current	history1	history2
Oxidation	Abs.1mm	*ASTM D7414 >25	7.6	7.2	6.7
Acid Number (AN)	mg KOH/g	ASTM D8045	1.45	1.50	1.42
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	8.31	8.10	8.15

OIL ANALYSIS REPORT

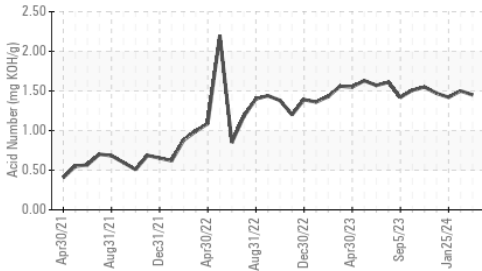
Fuel Dilution



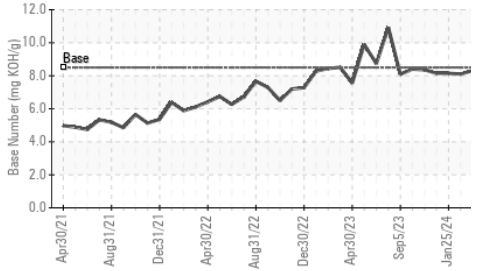
FT-IR (Direct Trend)



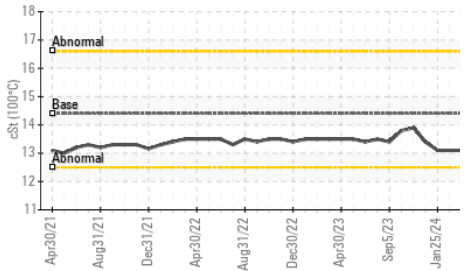
Acid Number



Base Number



Viscosity @ 100°C



VISUAL

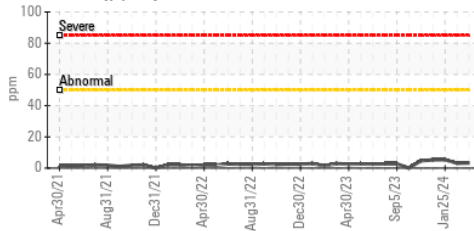
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES

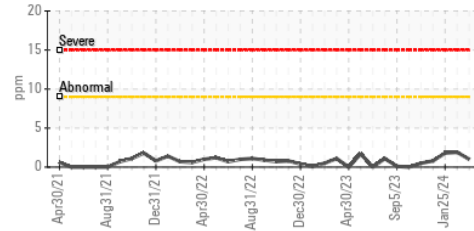
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.1	13.1

GRAPHS

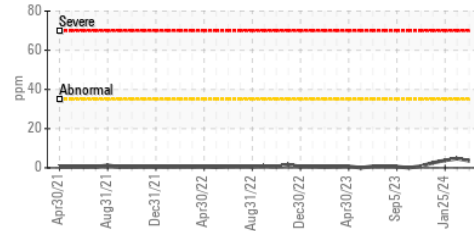
Iron (ppm)



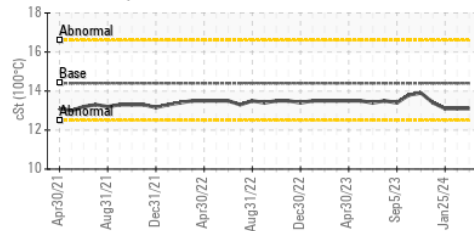
Aluminum (ppm)



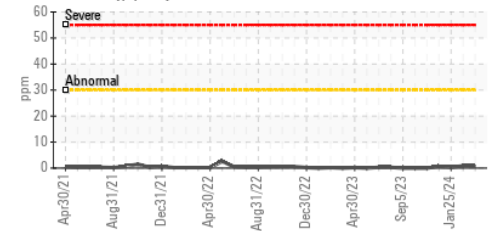
Copper (ppm)



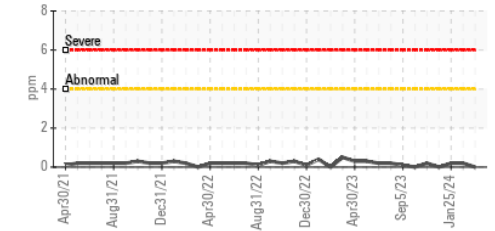
Viscosity @ 100°C



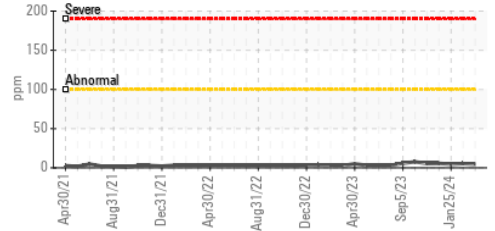
Lead (ppm)



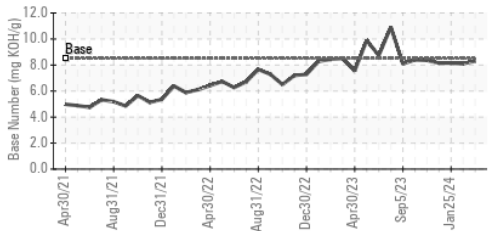
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : PCA0098889

Lab Number : 06142451

Unique Number : 10967259

Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

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)

Received : 08 Apr 2024

Tested : 11 Apr 2024

Diagnosed : 11 Apr 2024 - Jonathan Hester

Magellan Midstream LP - Faribault

22535 Bagley Avenue

Faribault, MN

US 55021

Contact: Jon Coulter

Jon.Coulter@magellanlp.com

T: (507)381-9649

F: