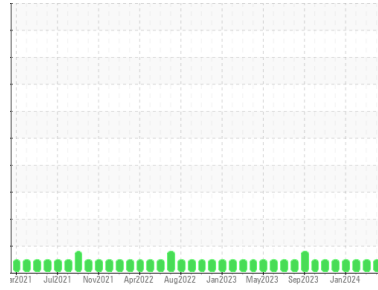


OIL ANALYSIS REPORT

Area
Irvington
 Machine Id
Unit 03 DB060103E
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)

Sample Rating Trend



DIAGNOSIS

Recommendation
 Resample at the next service interval to monitor. (Customer Sample Comment: Top Up Amount: 51 GAL)

Wear
 All component wear rates are normal.

Contamination
 Fuel content negligible. There is no indication of any contamination 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		PCA0105159	PCA0105161	PCA0105153
Sample Date	Client Info		11 Apr 2024	25 Mar 2024	01 Feb 2024
Machine Age	hrs	Client Info	24757	24598	24598
Oil Age	hrs	Client Info	24757	24598	24598
Oil Changed	Client Info		Oil Added	Oil Added	Oil Added
Sample Status			NORMAL	NORMAL	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	2	5	3
Chromium	ppm	ASTM D5185m >4	<1	0	<1
Nickel	ppm	ASTM D5185m >2	<1	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >9	2	<1	2
Lead	ppm	ASTM D5185m >30	1	<1	0
Copper	ppm	ASTM D5185m >35	2	1	<1
Tin	ppm	ASTM D5185m >4	<1	<1	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<1	<1	<1
Barium	ppm	ASTM D5185m	0	0	5
Molybdenum	ppm	ASTM D5185m	2	1	<1
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	1009	907	938
Calcium	ppm	ASTM D5185m	1174	1041	1064
Phosphorus	ppm	ASTM D5185m	1247	1153	1158
Zinc	ppm	ASTM D5185m	1417	1328	1293
Sulfur	ppm	ASTM D5185m	3573	3574	3456

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	4	13	2
Sodium	ppm	ASTM D5185m	0	2	0
Potassium	ppm	ASTM D5185m >20	1	<1	1
Fuel	%	ASTM D3524 >4.0	1.9	1.7	1.6

INFRA-RED

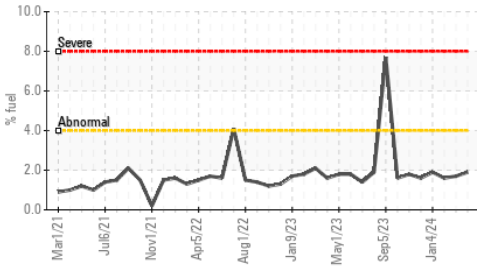
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0.1	0	0.1
Nitration	Abs/cm	*ASTM D7624 >20	3.9	3.9	3.9
Sulfation	Abs/.1mm	*ASTM D7415 >30	13.1	13.3	13.1

FLUID DEGRADATION

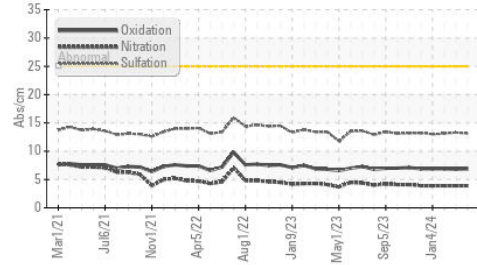
	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	6.9	6.8	6.9
Acid Number (AN)	mg KOH/g	ASTM D8045	1.65	1.76	1.50
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	8.15	8.40	8.14

OIL ANALYSIS REPORT

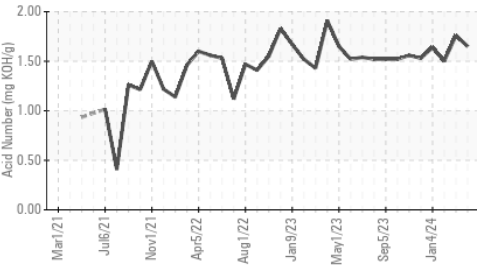
Fuel Dilution



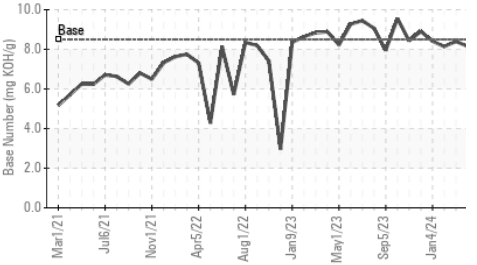
FT-IR (Direct Trend)



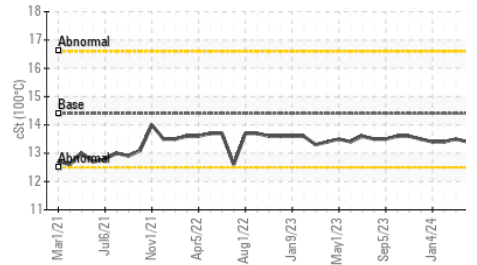
Acid Number



Base Number



Viscosity @ 100°C



VISUAL

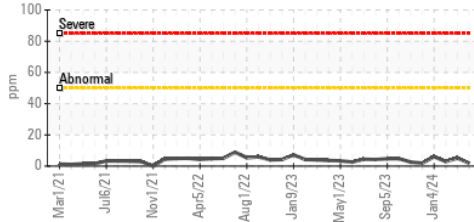
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*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

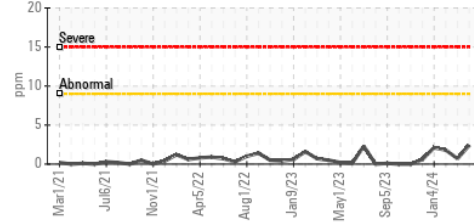
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	13.4	13.5

GRAPHS

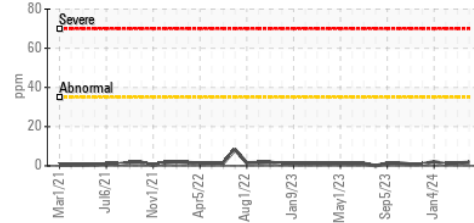
Iron (ppm)



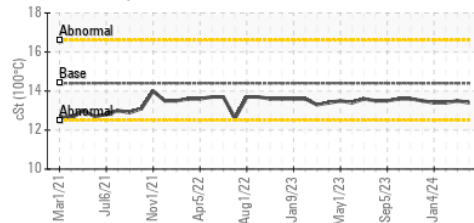
Aluminum (ppm)



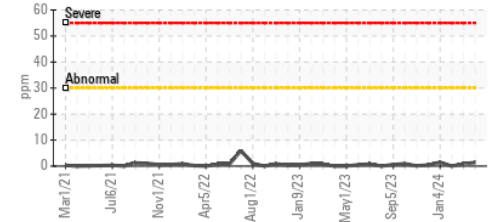
Copper (ppm)



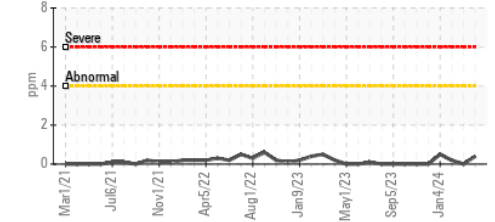
Viscosity @ 100°C



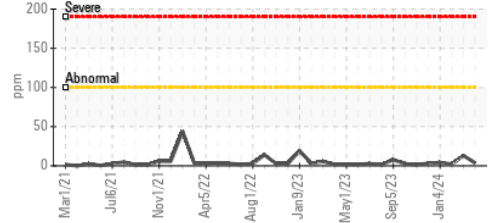
Lead (ppm)



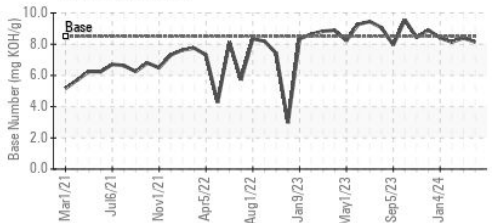
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0105159 **Received** : 12 Apr 2024
Lab Number : 06148151 **Tested** : 17 Apr 2024
Unique Number : 10978229 **Diagnosed** : 17 Apr 2024 - Jonathan Hester
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)

Magellan Midstream LP - Omaha
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 Omaha, NE
 US 68122
 Contact: Zach Jones
 zach.jones@magellanlp.com

T:
F: