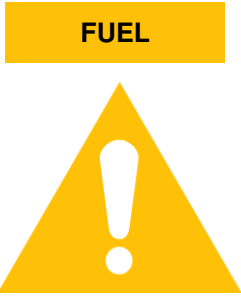
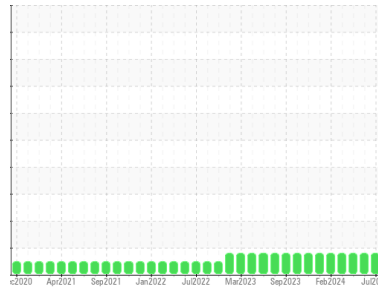


OIL ANALYSIS REPORT

Area
INDEPENDENCE
 Machine Id
Unit 05 DB200105E
 Component
Natural Gas Engine
 Fluid
PETRO CANADA DURON MONOGRADE HD 40W (250 GAL)

Sample Rating Trend



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**
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	PCA0097012	PCA0097013	PCA0097011
Sample Date	Client Info	02 Jul 2024	11 Jun 2024	15 Apr 2024
Machine Age	hrs	31681	3125	2851
Oil Age	hrs	31681	3125	2851
Oil Changed	Client Info	Not Chngd	Not Chngd	Filtered
Sample Status		MARGINAL	MARGINAL	MARGINAL

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	12	12	9
Chromium	ppm ASTM D5185m >4	<1	<1	<1
Nickel	ppm ASTM D5185m >2	0	0	0
Titanium	ppm ASTM D5185m	<1	<1	0
Silver	ppm ASTM D5185m >3	0	0	0
Aluminum	ppm ASTM D5185m >9	2	2	2
Lead	ppm ASTM D5185m >30	1	2	2
Copper	ppm ASTM D5185m >35	2	2	2
Tin	ppm ASTM D5185m >4	<1	<1	1
Vanadium	ppm ASTM D5185m	0	0	<1
Cadmium	ppm ASTM D5185m	0	<1	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	7	6	1
Barium	ppm ASTM D5185m	0	<1	0
Molybdenum	ppm ASTM D5185m	9	4	4
Manganese	ppm ASTM D5185m	0	0	0
Magnesium	ppm ASTM D5185m	896	942	888
Calcium	ppm ASTM D5185m	1048	1072	1032
Phosphorus	ppm ASTM D5185m	1064	1171	1017
Zinc	ppm ASTM D5185m	1280	1330	1130
Sulfur	ppm ASTM D5185m	2938	3092	3319

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >+100	6	6	4
Sodium	ppm ASTM D5185m	3	3	4
Potassium	ppm ASTM D5185m >20	1	1	0
Fuel	% ASTM D3524 >4.0	▲ 3.2	▲ 3.0	▲ 3.1

INFRA-RED

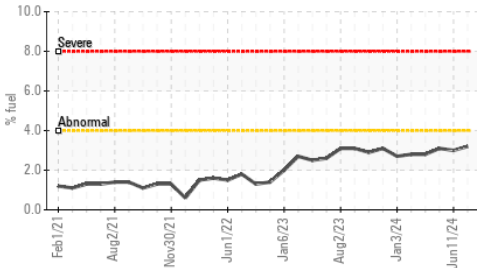
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0.1	0.1	0.1
Nitration	Abs/cm *ASTM D7624 >20	4.8	4.7	4.7
Sulfation	Abs/.1mm *ASTM D7415 >30	13.6	13.6	13.7

FLUID DEGRADATION

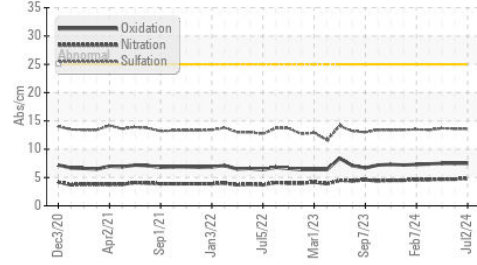
method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	7.5	7.5	7.5
Acid Number (AN)	mg KOH/g ASTM D8045	1.21	1.13	1.18
Base Number (BN)	mg KOH/g ASTM D2896 8.5	8.59	8.37	8.62

OIL ANALYSIS REPORT

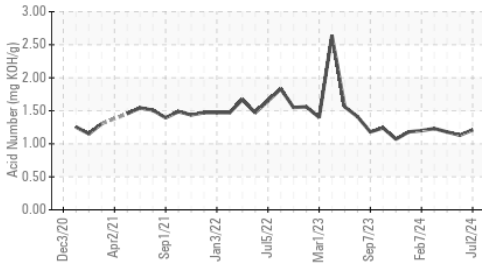
Fuel Dilution



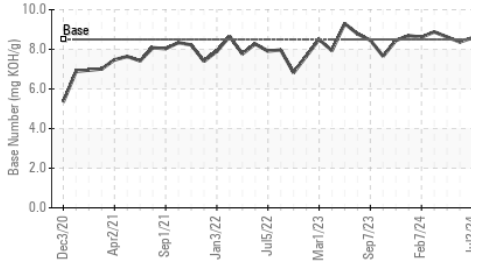
FT-IR (Direct Trend)



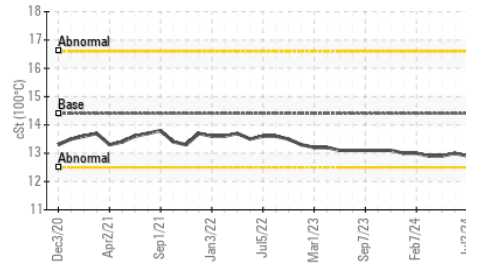
Acid Number



Base Number



Viscosity @ 100°C



VISUAL

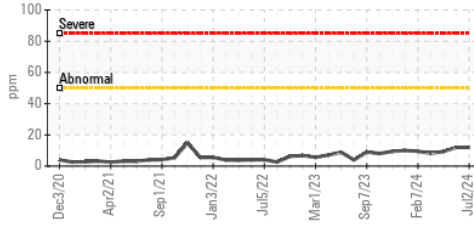
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

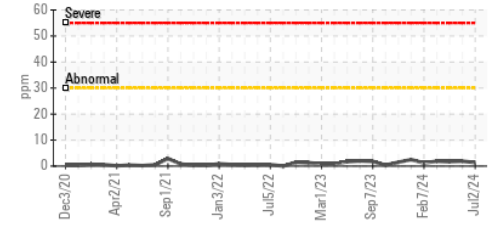
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	13.0

GRAPHS

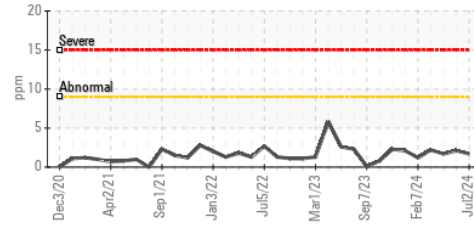
Iron (ppm)



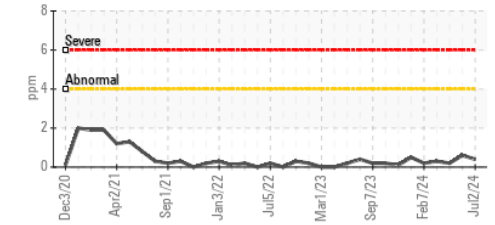
Lead (ppm)



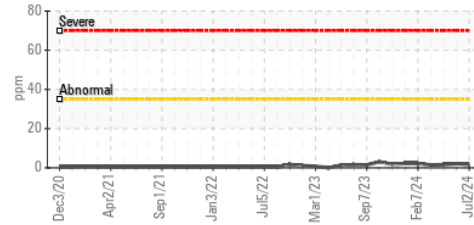
Aluminum (ppm)



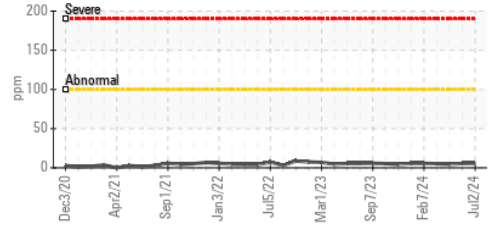
Chromium (ppm)



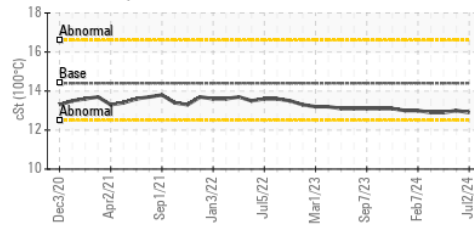
Copper (ppm)



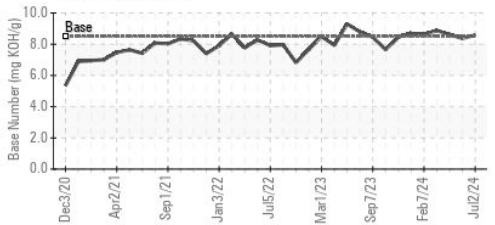
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0097012

Lab Number : 06230888

Unique Number : 11114381

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 Jul 2024

Tested : 11 Jul 2024

Diagnosed : 11 Jul 2024 - Jonathan Hester

Magellan Midstream LP - Independence

836 South Rosser Road

Independence, KS

US 67301

Contact: Heath James

heath.james@oakok.com

T: (620)779-2040

F: