



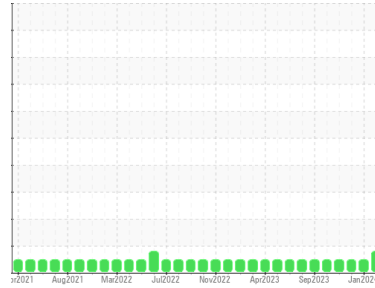
OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Area
ALBERT LEA
 Machine Id
Unit 05 DB010105E
 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: 113 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	PCA0106491	PCA0106488	PCA0106487
Sample Date	Client Info	29 Feb 2024	25 Jan 2024	30 Dec 2023
Machine Age	hrs	2323	1872	1400
Oil Age	hrs	2323	1872	1400
Oil Changed	Client Info	Not Chngd	Oil Added	Not Chngd
Sample Status		MARGINAL	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	5	11	7
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
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	2	2	1
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>35	3	4	3
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m		<1	2	<1
Barium	ppm	ASTM D5185m		0	5	0
Molybdenum	ppm	ASTM D5185m		1	1	2
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m		954	1314	924
Calcium	ppm	ASTM D5185m		1018	1352	1018
Phosphorus	ppm	ASTM D5185m		1048	1504	1015
Zinc	ppm	ASTM D5185m		1361	1831	1304
Sulfur	ppm	ASTM D5185m		3098	4424	2938

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>+100	6	6	4
Sodium	ppm	ASTM D5185m		<1	0	<1
Potassium	ppm	ASTM D5185m	>20	1	1	0
Fuel	%	ASTM D3524	>4.0	▲ 2.1	1.9	1.9

INFRA-RED

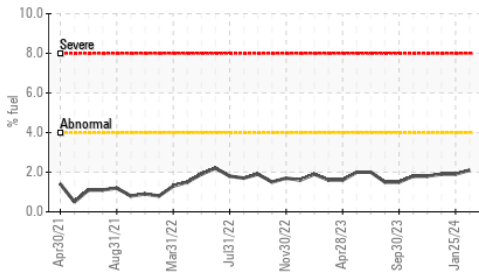
method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844		0	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	4.1	4.0	3.9
Sulfation	Abs.:1mm	*ASTM D7415	>30	13.6	13.2	13.0

FLUID DEGRADATION

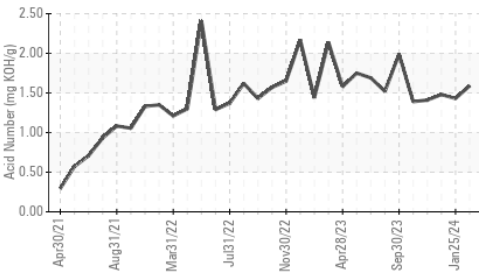
method	limit/base	current	history1	history2		
Oxidation	Abs.:1mm	*ASTM D7414	>25	7.2	7.0	6.7
Acid Number (AN)	mg KOH/g	ASTM D8045		1.59	1.43	1.48
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.41	8.10	8.12

OIL ANALYSIS REPORT

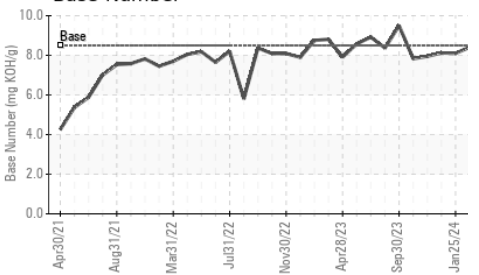
Fuel Dilution



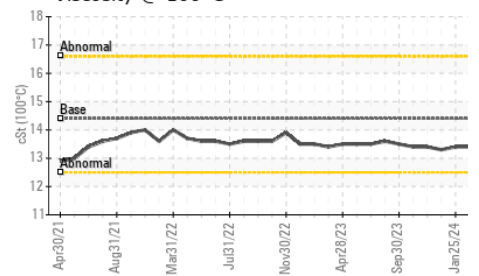
Acid Number



Base Number



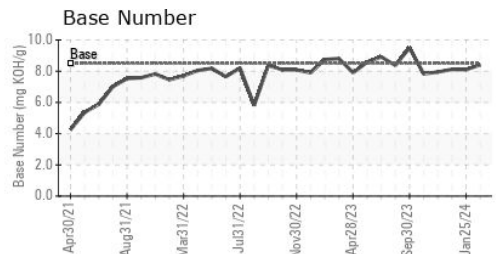
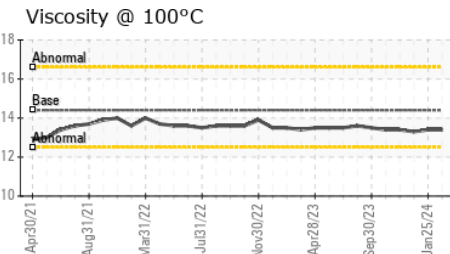
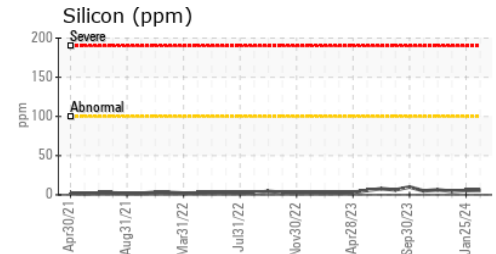
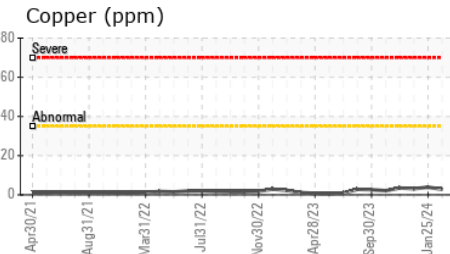
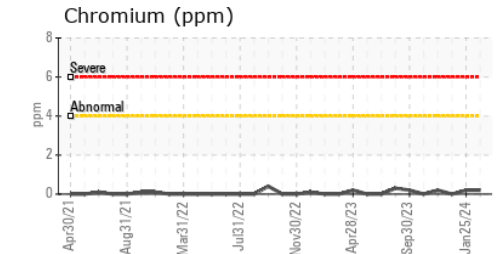
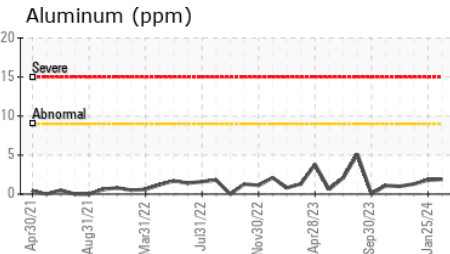
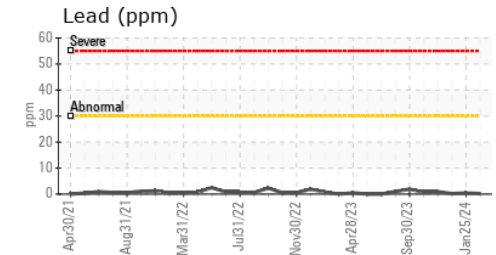
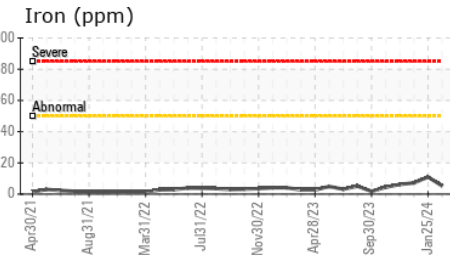
Viscosity @ 100°C



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	13.4	13.3

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0106491 **Received** : 05 Mar 2024
Lab Number : 06108846 **Tested** : 07 Mar 2024
Unique Number : 10912343 **Diagnosed** : 07 Mar 2024 - Sean Felton

Magellan Midstream LP - Albert Lea
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 Glenville, MN
 US 56036
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 T: (641)231-6666
 F:

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)