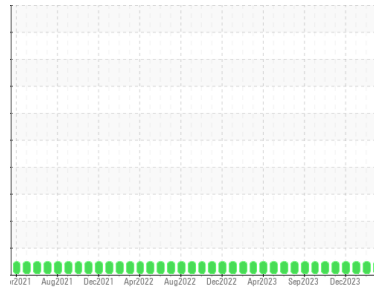


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
FARIBAULT
 Machine Id
[FARIBAULT] Unit 04 DB020104E
 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: 81 gallons of lube oil added this month.)

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	PCA0124423	PCA0124421	PCA0098888
Sample Date	Client Info	29 May 2024	26 Apr 2024	29 Feb 2024
Machine Age	hrs	499	183	2
Oil Age	hrs	499	183	2
Oil Changed	Client Info	Oil Added	Not Changd	Changed
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	8	44	10
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>9	2	3	2
Lead	ppm	ASTM D5185m	>30	2	2	1
Copper	ppm	ASTM D5185m	>35	2	1	<1
Tin	ppm	ASTM D5185m	>4	1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES

method	limit/base	current	history1	history2		
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	3	3
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		869	931	941
Calcium	ppm	ASTM D5185m		983	1050	1005
Phosphorus	ppm	ASTM D5185m		961	1171	1059
Zinc	ppm	ASTM D5185m		1267	1296	1326
Sulfur	ppm	ASTM D5185m		3532	3768	3102

CONTAMINANTS

method	limit/base	current	history1	history2		
Silicon	ppm	ASTM D5185m	>+100	20	34	63
Sodium	ppm	ASTM D5185m		<1	2	<1
Potassium	ppm	ASTM D5185m	>20	2	0	<1
Fuel	%	ASTM D3524	>4.0	1.3	0.9	0.4

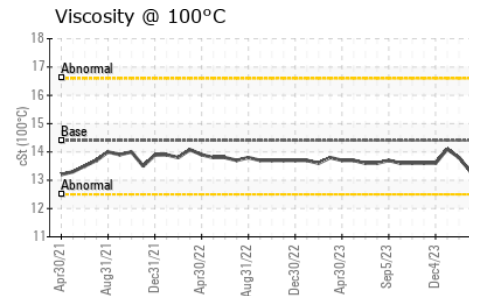
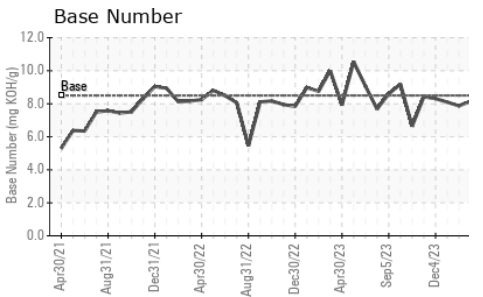
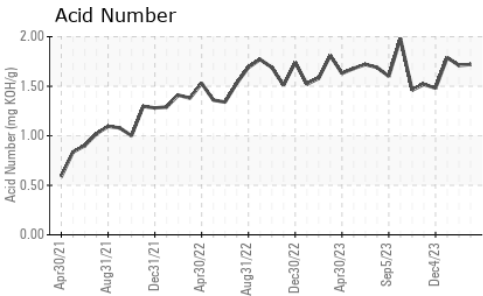
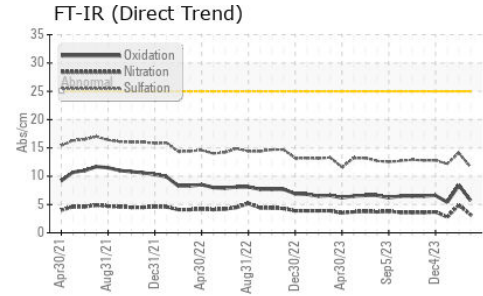
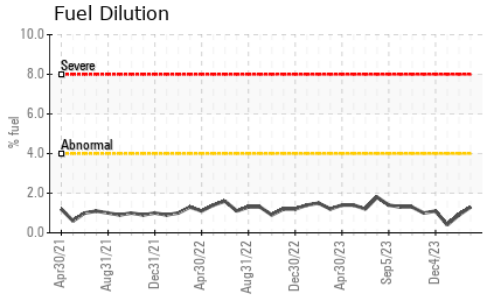
INFRA-RED

method	limit/base	current	history1	history2		
Soot %	%	*ASTM D7844		0.1	0.1	0
Nitration	Abs/cm	*ASTM D7624	>20	3.2	4.9	2.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	11.6	14.1	12.2

FLUID DEGRADATION

method	limit/base	current	history1	history2		
Oxidation	Abs/.1mm	*ASTM D7414	>25	5.7	8.4	5.4
Acid Number (AN)	mg KOH/g	ASTM D8045		1.72	1.71	1.79
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.15	7.87	8.10

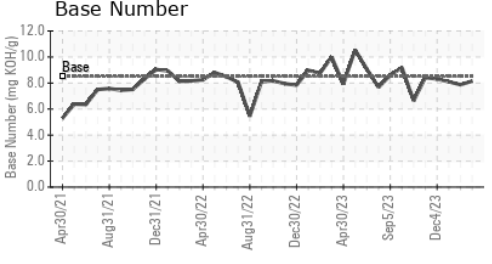
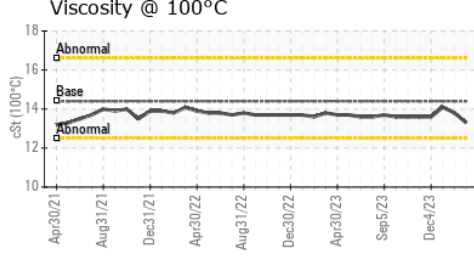
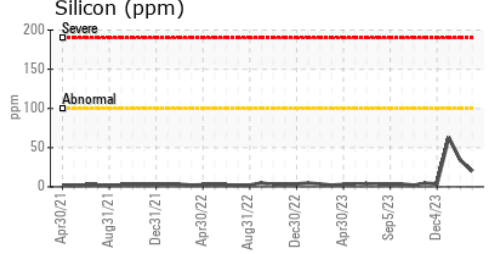
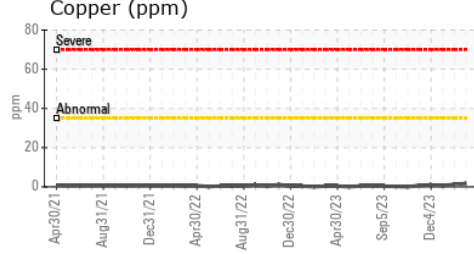
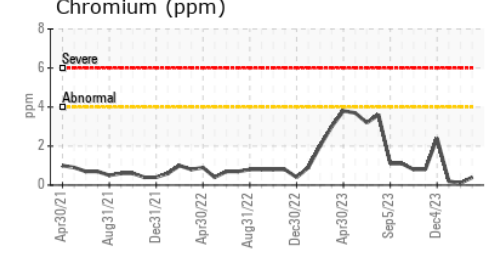
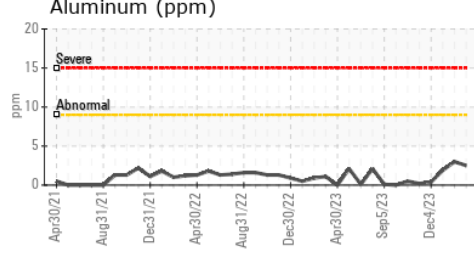
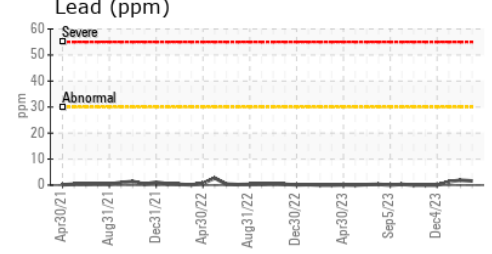
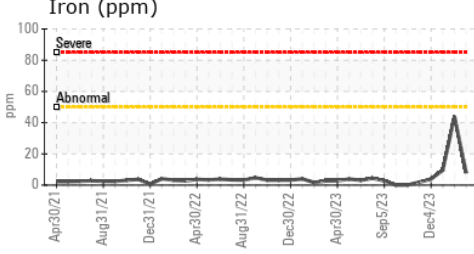
OIL ANALYSIS REPORT



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	LIGHT	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	13.3	13.8	14.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0124423
Lab Number : **06198328**
Unique Number : 11060451
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Faribault
 22535 Bagley Avenue
 Faribault, MN
 US 55021

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