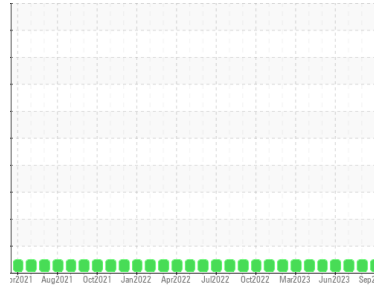


OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
ALBERT LEA
Machine Id
Unit 04 DB010104E

Component
Natural Gas Engine
Fluid
PETRO CANADA DURON MONOGRADE HD 40W (350 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: No 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		PCA0106480	PCA0088291	PCA0088290
Sample Date	Client Info		30 Sep 2023	04 Sep 2023	31 Jul 2023
Machine Age	hrs	Client Info	14360	14360	14116
Oil Age	hrs	Client Info	14360	14360	14116
Oil Changed	Client Info		Oil Added	Oil Added	N/A
Sample Status			NORMAL	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	0	4	4
Chromium	ppm	ASTM D5185m >4	0	0	0
Nickel	ppm	ASTM D5185m >2	<1	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m >3	0	0	<1
Aluminum	ppm	ASTM D5185m >9	0	5	2
Lead	ppm	ASTM D5185m >30	<1	0	<1
Copper	ppm	ASTM D5185m >35	1	2	2
Tin	ppm	ASTM D5185m >4	<1	<1	<1
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	<1
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	2	2	6
Manganese	ppm	ASTM D5185m	<1	<1	0
Magnesium	ppm	ASTM D5185m	915	933	925
Calcium	ppm	ASTM D5185m	1023	1059	1158
Phosphorus	ppm	ASTM D5185m	1132	1145	1178
Zinc	ppm	ASTM D5185m	1343	1346	1359
Sulfur	ppm	ASTM D5185m	3339	3811	3593

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >+100	5	4	4
Sodium	ppm	ASTM D5185m	0	2	0
Potassium	ppm	ASTM D5185m >20	2	0	1
Fuel	%	ASTM D3524 >4.0	1.3	1.5	1.6

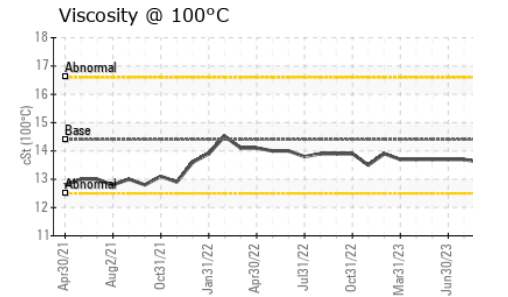
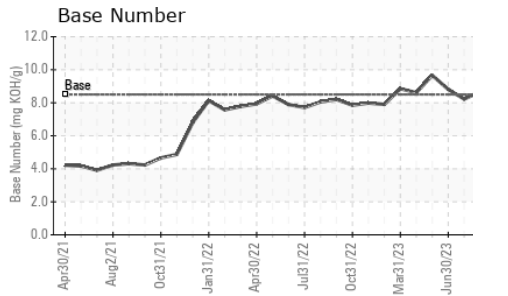
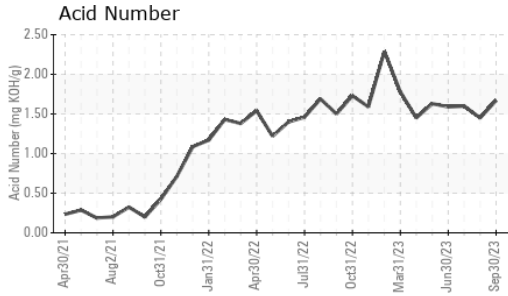
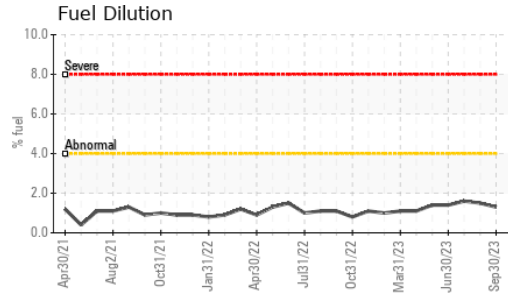
INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	0	0.1	0
Nitration	Abs/cm	*ASTM D7624 >20	3.8	3.9	4.0
Sulfation	Abs/.1mm	*ASTM D7415 >30	12.9	12.9	13.0

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	7.0	6.7	7.0
Acid Number (AN)	mg KOH/g	ASTM D8045	1.67	1.45	1.60
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	10.32	8.66	8.22

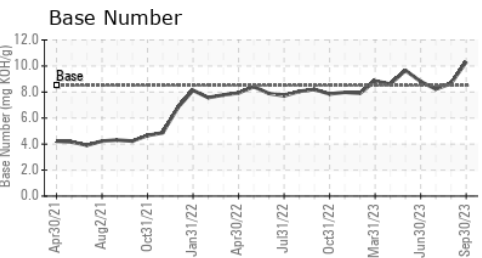
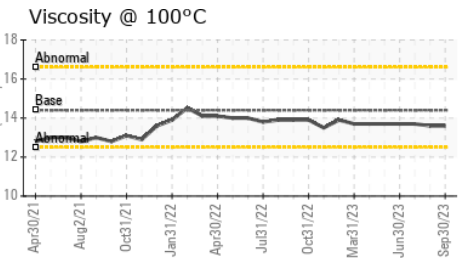
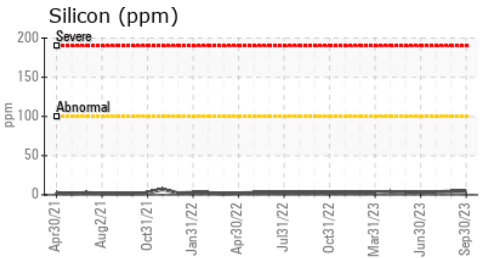
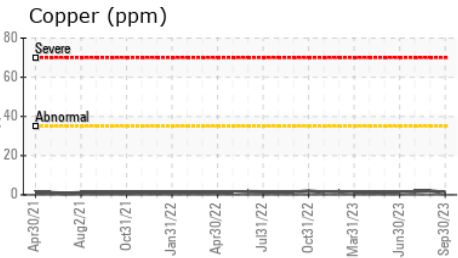
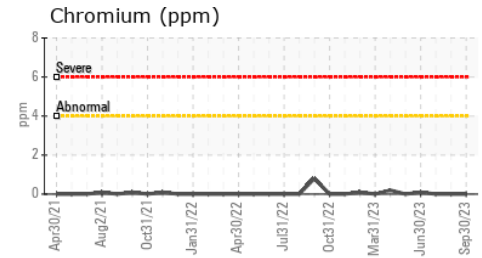
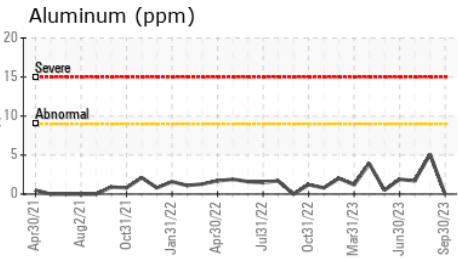
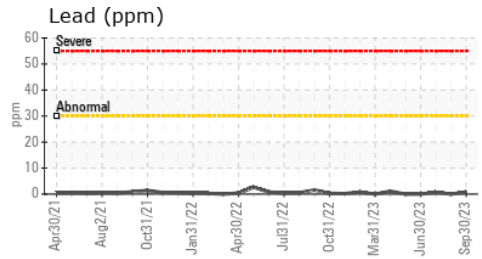
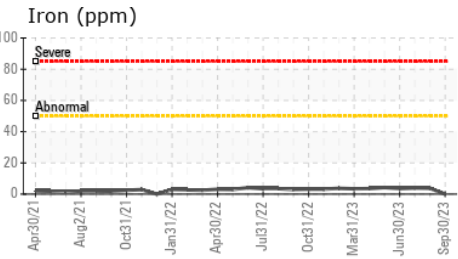
OIL ANALYSIS REPORT



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	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	13.6	13.6

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0106480
Lab Number : 05973170
Unique Number : 10685120
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

Magellan Midstream LP - Albert Lea
 11406 755th Avenue
 Glenville, MN
 US 56036
 Contact: Shawn Duren
 shawn.duren@magellanlp.com
 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)