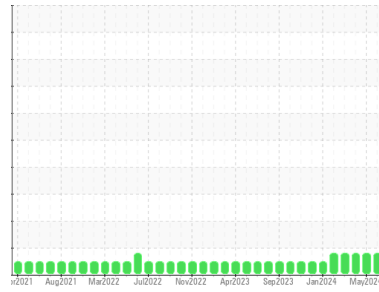


OIL ANALYSIS REPORT

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: 136 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		PCA0124431	PCA0106497	PCA0106495
Sample Date	Client Info		30 Jun 2024	29 May 2024	29 Apr 2024
Machine Age	hrs	Client Info	3960	3364	3025
Oil Age	hrs	Client Info	3960	3364	3025
Oil Changed	Client Info		Not Chngd	Oil Added	Oil Added
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	9	8	10
Chromium	ppm	ASTM D5185m	>4	0	<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	3	2	2
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>35	2	2	2
Tin	ppm	ASTM D5185m	>4	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0

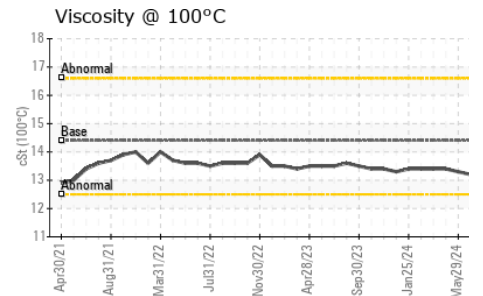
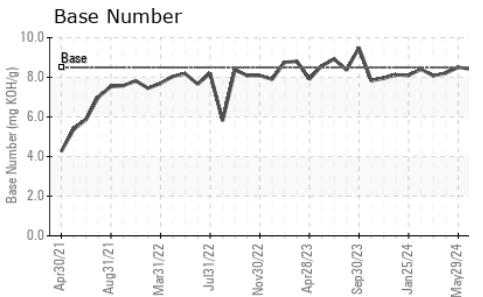
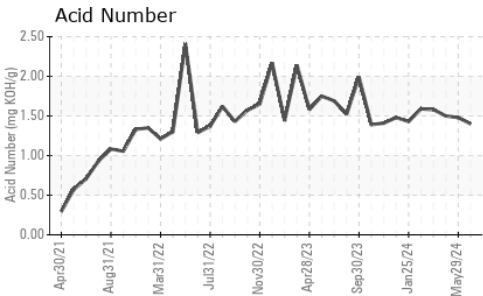
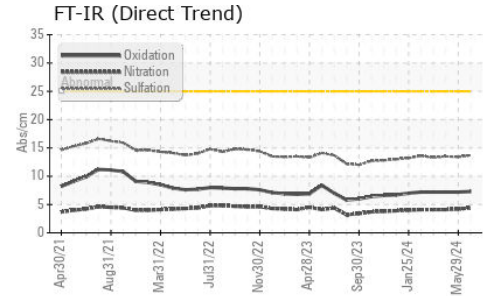
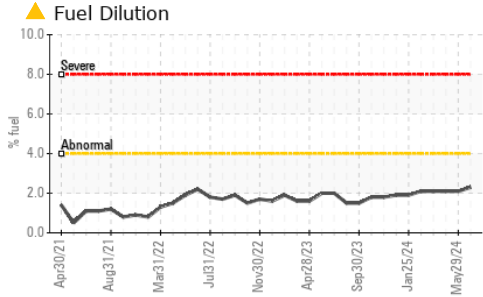
ADDITIVES	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		4	1	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	2	2
Manganese	ppm	ASTM D5185m		0	0	0
Magnesium	ppm	ASTM D5185m		901	858	950
Calcium	ppm	ASTM D5185m		1053	989	1089
Phosphorus	ppm	ASTM D5185m		1177	1032	1195
Zinc	ppm	ASTM D5185m		1369	1232	1342
Sulfur	ppm	ASTM D5185m		4559	2904	3672

CONTAMINANTS	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+100	4	4	5
Sodium	ppm	ASTM D5185m		3	<1	1
Potassium	ppm	ASTM D5185m	>20	2	<1	<1
Fuel	%	ASTM D3524	>4.0	▲ 2.3	▲ 2.1	▲ 2.1

INFRA-RED	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	4.4	4.2	4.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	13.7	13.4	13.5

FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	7.3	7.2	7.2
Acid Number (AN)	mg KOH/g	ASTM D8045		1.40	1.48	1.50
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	8.41	8.51	8.21

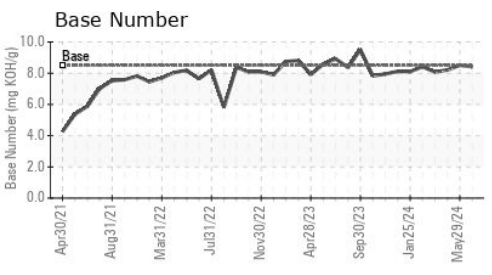
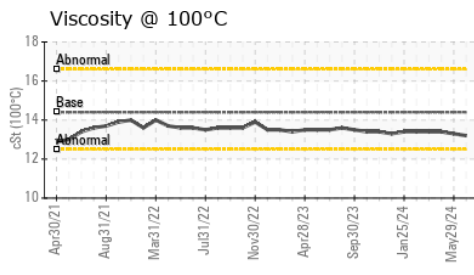
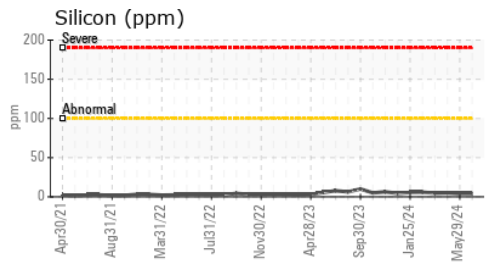
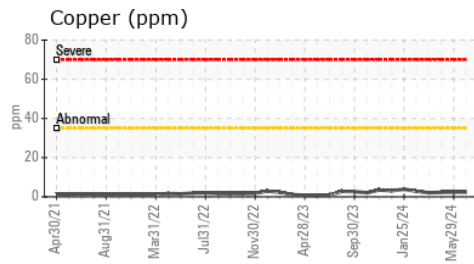
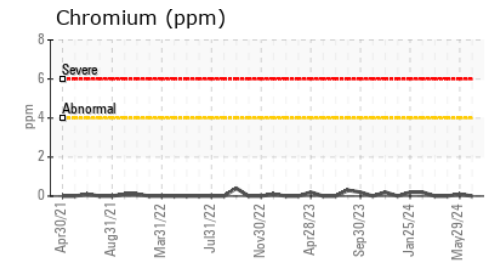
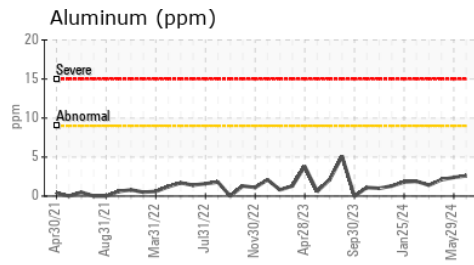
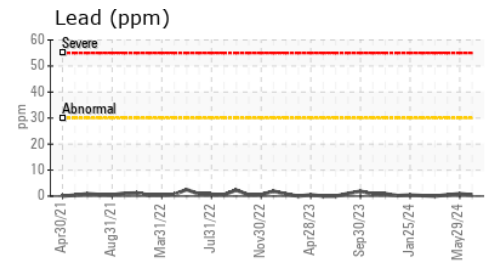
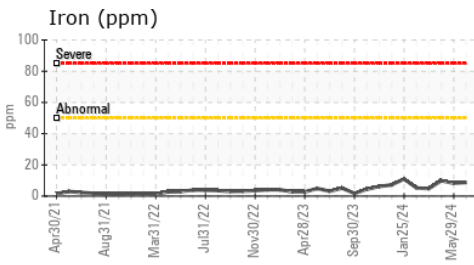
OIL ANALYSIS REPORT



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	13.2	13.3	13.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0124431 **Received** : 09 Jul 2024
Lab Number : **06231871** **Tested** : 11 Jul 2024
Unique Number : 11115364 **Diagnosed** : 11 Jul 2024 - Don Baldrige
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)