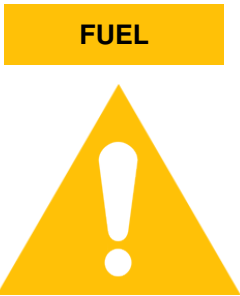
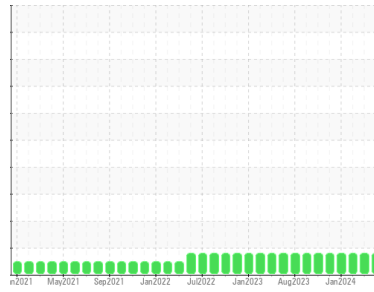


# OIL ANALYSIS REPORT

Area  
**INDEPENDENCE**  
Machine Id  
**Unit 04 DB200104E**  
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**  
There is a moderate amount of fuel present in the oil. 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		<b>PCA0097010</b>	PCA0097014	PCA0097016
Sample Date	Client Info		<b>15 Apr 2024</b>	08 Mar 2024	07 Feb 2024
Machine Age	hrs	Client Info	<b>13655</b>	13428	13357
Oil Age	hrs	Client Info	<b>13655</b>	13428	13357
Oil Changed	Client Info		<b>Not Chngd</b>	Filtered	Not Chngd
Sample Status			<b>ABNORMAL</b>	MARGINAL	MARGINAL

CONTAMINATION	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG

WEAR METALS	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>50	<b>14</b>	14	15
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>9	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185m	>30	<b>2</b>	2	1
Copper	ppm	ASTM D5185m	>35	<b>2</b>	2	3
Tin	ppm	ASTM D5185m	>4	<b>1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

ADDITIVES	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>2</b>	4	4
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>4</b>	4	4
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>872</b>	878	926
Calcium	ppm	ASTM D5185m		<b>1028</b>	1054	1050
Phosphorus	ppm	ASTM D5185m		<b>987</b>	1049	999
Zinc	ppm	ASTM D5185m		<b>1099</b>	1258	1276
Sulfur	ppm	ASTM D5185m		<b>3014</b>	3016	2800

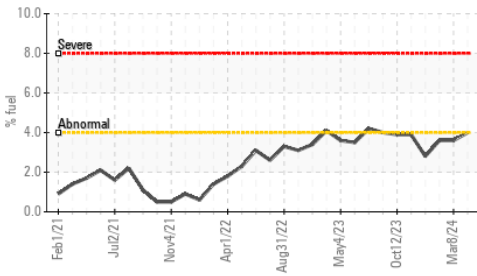
CONTAMINANTS	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>+100	<b>2</b>	7	2
Sodium	ppm	ASTM D5185m		<b>3</b>	<1	0
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	2
Fuel	%	ASTM D3524	>4.0	<b>▲ 4.0</b>	▲ 3.6	▲ 3.6

INFRA-RED	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.2</b>	5.0	5.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>14.7</b>	14.2	14.3

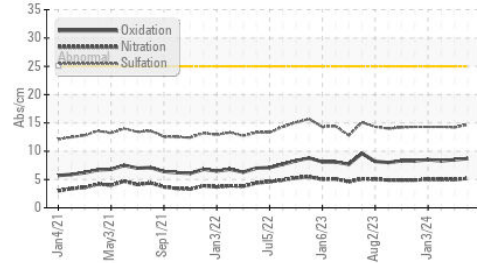
FLUID DEGRADATION	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.7</b>	8.5	8.3
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>1.49</b>	1.44	1.36
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>8.10</b>	8.35	8.23

# OIL ANALYSIS REPORT

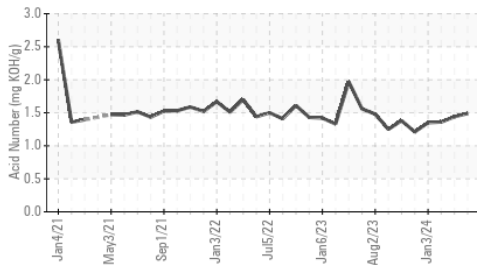
## Fuel Dilution



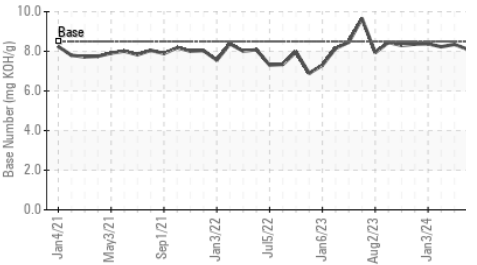
## FT-IR (Direct Trend)



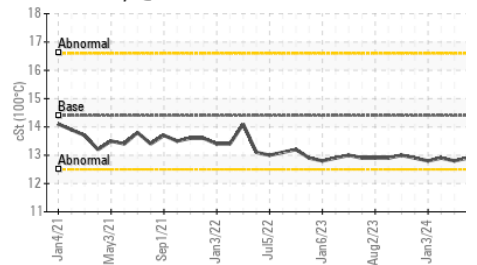
## Acid Number



## Base Number



## Viscosity @ 100°C



## VISUAL

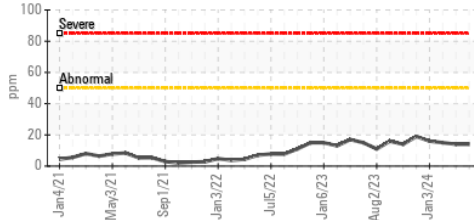
	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar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

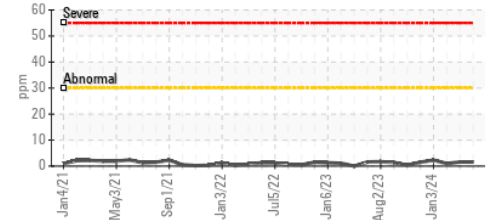
	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	12.8

## GRAPHS

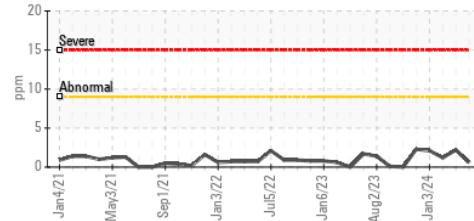
### Iron (ppm)



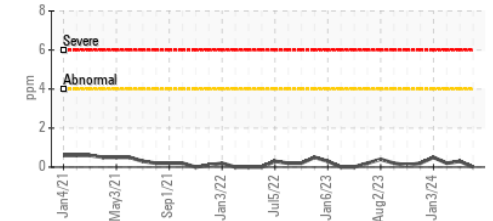
### Lead (ppm)



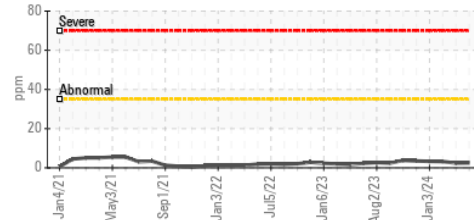
### Aluminum (ppm)



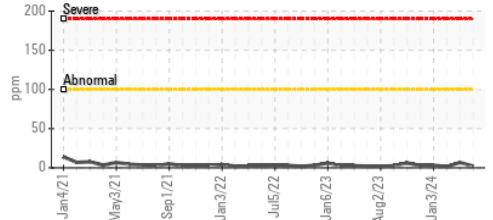
### Chromium (ppm)



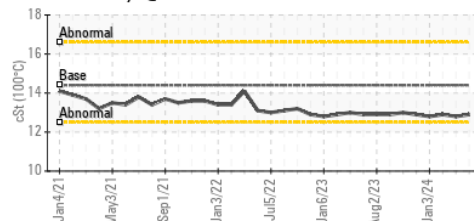
### Copper (ppm)



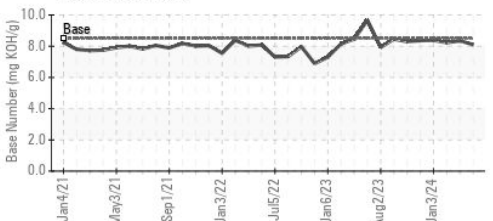
### Silicon (ppm)



### Viscosity @ 100°C



### Base Number



Certificate L2367

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

**Sample No.** : PCA0097010

**Lab Number** : 06154648

**Unique Number** : 10990071

**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** : 19 Apr 2024

**Tested** : 24 Apr 2024

**Diagnosed** : 24 Apr 2024 - Jonathan Hester

**Magellan Midstream LP - Independence**

836 South Rosser Road

Independence, KS

US 67301

Contact: Heath James

heath.james@magellanlp.com

T: (620)779-2040

F: