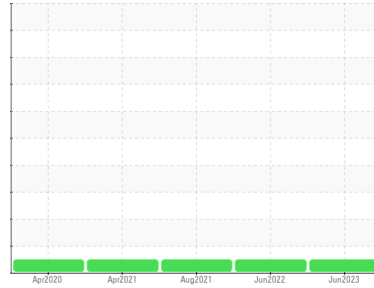


Area
EBI de Costa Rica
Machine Id
VOLVO A40E A40E-03
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (55 LTR)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
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 condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2

Sample Number	Client Info	PC0073826	PC0063056	PC0041455	
Sample Date	Client Info	03 Jun 2023	18 Jun 2022	04 Aug 2021	
Machine Age	hrs	Client Info	16846	15412	14392
Oil Age	hrs	Client Info	250	250	250
Oil Changed	Client Info	Changed	N/A	N/A	
Sample Status		NORMAL	NORMAL	NORMAL	

CONTAMINATION method limit/base current history1 history2

Fuel	WC Method	>6.0	<1.0	1.6	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS method limit/base current history1 history2

Iron	ppm	ASTM D5185(m)	>100	10	21	15
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	<1
Nickel	ppm	ASTM D5185(m)	>2	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		<1	<1	<1
Silver	ppm	ASTM D5185(m)	>2	<1	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	4	6	2
Lead	ppm	ASTM D5185(m)	>40	1	2	2
Copper	ppm	ASTM D5185(m)	>330	1	2	2
Tin	ppm	ASTM D5185(m)	>15	0	<1	<1
Antimony	ppm	ASTM D5185(m)		<1	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
Beryllium	ppm	ASTM D5185(m)		0	0	0
Cadmium	ppm	ASTM D5185(m)		0	0	0

ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185(m)	0	1	2	2
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	58	58	57
Manganese	ppm	ASTM D5185(m)	0	<1	<1	<1
Magnesium	ppm	ASTM D5185(m)	1010	972	994	984
Calcium	ppm	ASTM D5185(m)	1070	996	1128	1063
Phosphorus	ppm	ASTM D5185(m)	1150	1060	1031	1063
Zinc	ppm	ASTM D5185(m)	1270	1172	1245	1227
Sulfur	ppm	ASTM D5185(m)	2060	2583	2772	2656
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

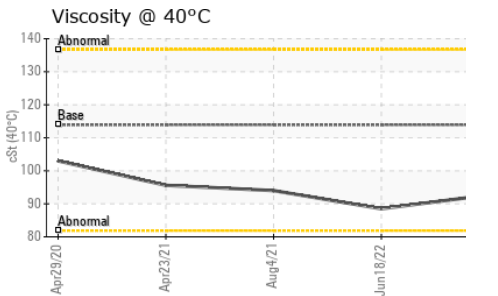
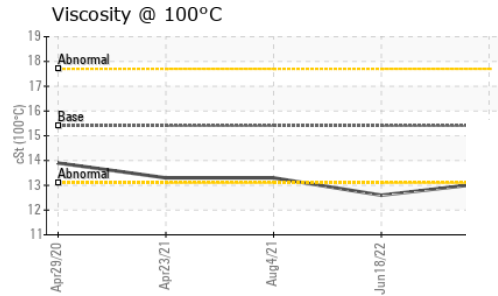
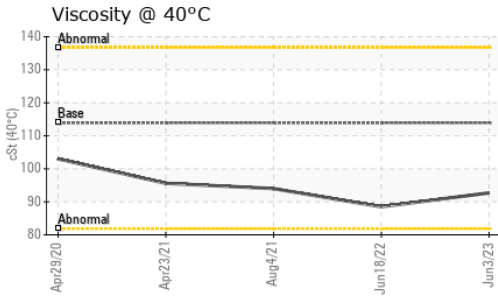
CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185(m)	>25	9	14	5
Sodium	ppm	ASTM D5185(m)		2	4	2
Potassium	ppm	ASTM D5185(m)	>20	1	1	<1

INFRA-RED method limit/base current history1 history2

Soot %	%	ASTM D7844*	>3	0.1	0.3	0.2
Nitration	Abs/cm	ASTM D7624*	>20	5.6	7.0	6.2
Sulfation	Abs/.1mm	ASTM D7415*	>30	18.0	19.7	19.1

OIL ANALYSIS REPORT

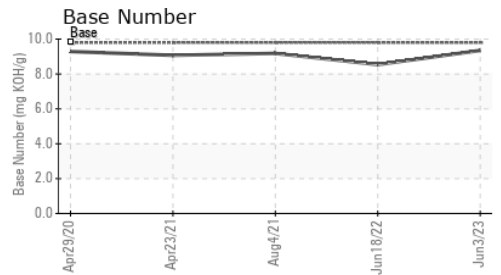
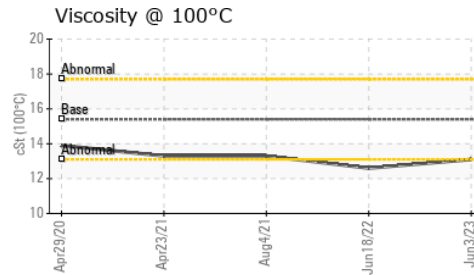
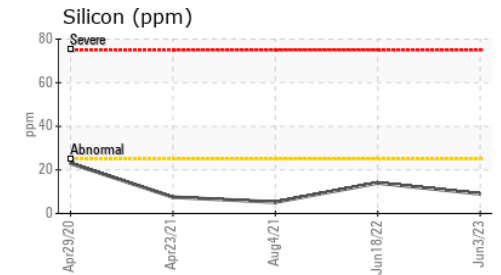
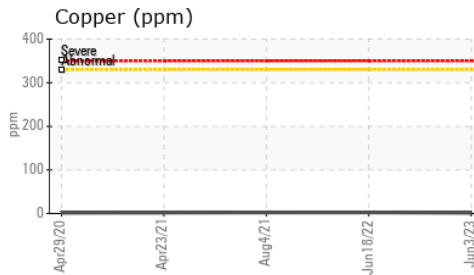
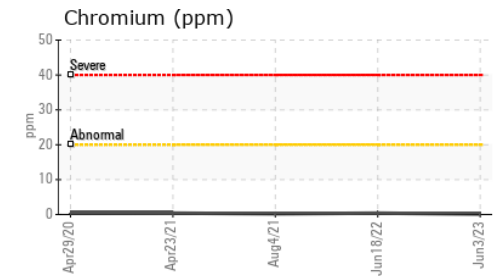
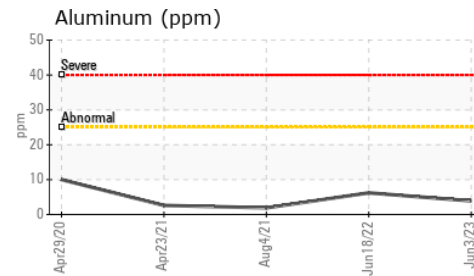
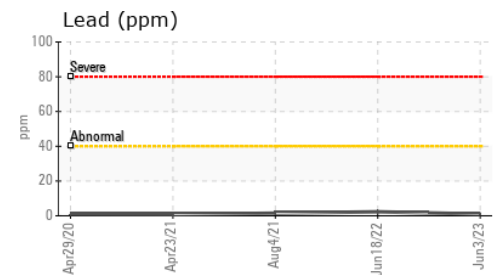
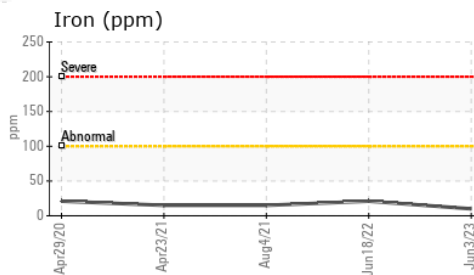


FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	13.2	14.4	13.8
Base Number (BN)	mg KOH/g	ASTM D2896*	9.8	9.35	8.54	9.18

VISUAL		method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	113.9	92.7	88.5	94.0
Visc @ 100°C	cSt	ASTM D7279(m)	15.4	13.1	12.6	13.3
Viscosity Index (VI)	Scale	ASTM D2270*	142	140	139	141

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **INDUSTRIAS del PETROLEO CANAD. SA**
Sample No. : PC0073826 **Received** : 13 Jul 2023
Lab Number : 02569545 **Diagnosed** : 17 Jul 2023
Unique Number : 5606591 **Diagnostician** : Wes Davis
Test Package : MOB 2 (Additional Tests: KV40, VI)

Contiguo FANAL, frente a la Autopista Bernardo Soto
Grecia, A
CR

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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