



Area
API
Machine Id
API
Component
Center Main Engine
Fluid
CHEVRON DELO 710 LS (450 GAL)

RECOMMENDATION

We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0055033	MW0010102	MW0055079
Sample Date		Client Info		19 Nov 2023	12 Oct 2023	23 Sep 2023
Machine Age	hrs	Client Info		104770	11382	10927
Oil Age	hrs	Client Info		12294	11382	10927
Filter Age	hrs	Client Info		1354	442	1220
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				ATTENTION	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	41	42	36
Chromium	ppm	ASTM D5185m	>8	2	2	2
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>3	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	1	1	0
Lead	ppm	ASTM D5185m	>18	13	13	15
Copper	ppm	ASTM D5185m	>80	30	36	34
Tin	ppm	ASTM D5185m	>14	6	6	7
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

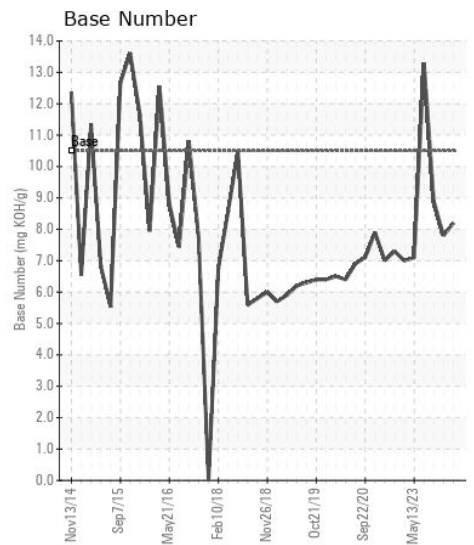
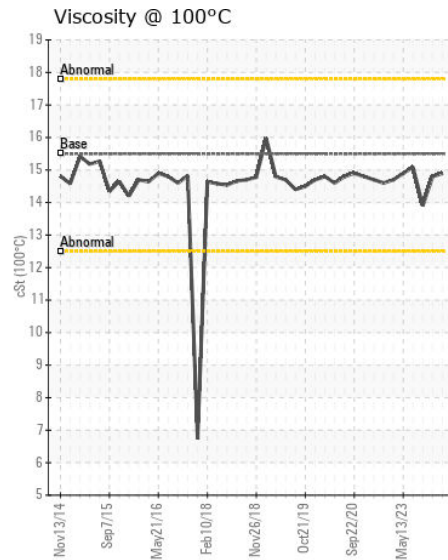
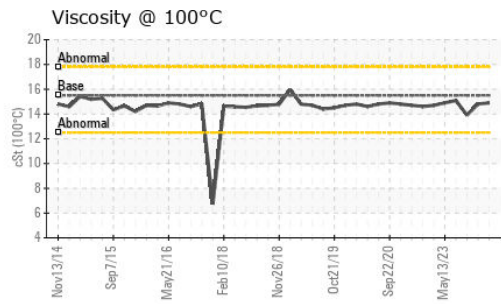
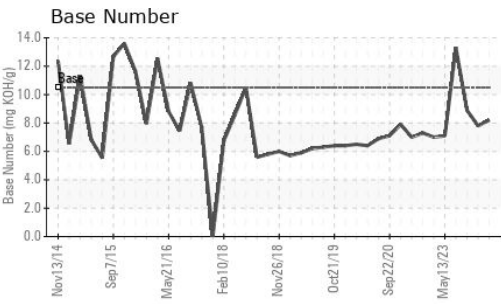
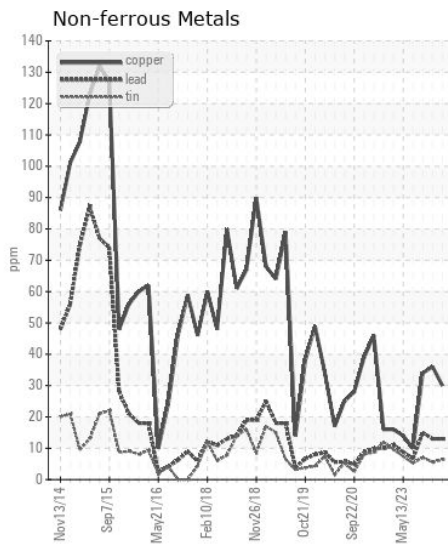
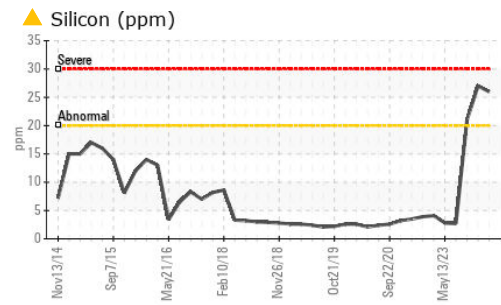
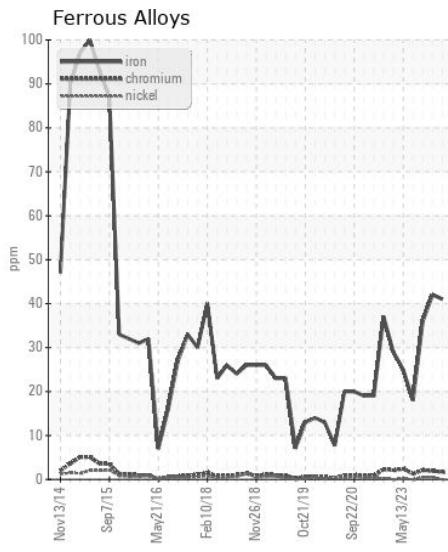
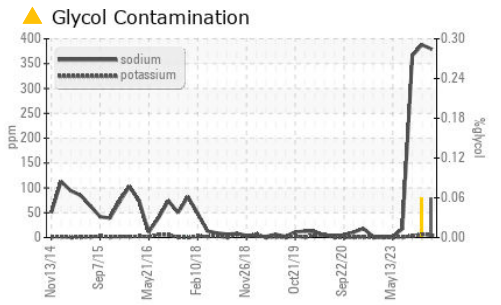
Sodium and/or potassium levels remain high, but stable. Test for glycol is positive. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 26	▲ 27	▲ 21
Potassium	ppm	ASTM D5185m	>20	4	▲ 6	3
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		▲ 0.06	▲ 0.06	NEG
Soot %	%	*ASTM D7844	>3	1.2	1.2	1.2
Nitration	Abs/cm	*ASTM D7624	>20	10.5	10.5	11.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	20.1	19.1
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>75	▲ 379	▲ 388	▲ 366
Boron	ppm	ASTM D5185m		106	130	116
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		46	48	48
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m		17	13	15
Calcium	ppm	ASTM D5185m		3263	3247	3223
Phosphorus	ppm	ASTM D5185m		2	0	6
Zinc	ppm	ASTM D5185m		1	2	5
Sulfur	ppm	ASTM D5185m		2064	2187	2219
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.8	9.9	11.1
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	8.2	7.8	8.9
Visc @ 100°C	cSt	ASTM D445	15.5	14.9	14.8	13.9



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0055033
Lab Number : 06064708
Unique Number : 10836090
Test Package : MAR 2

Received : 18 Jan 2024
Diagnosed : 02 Feb 2024
Diagnostician : Doug Bogart

AMERICAN RIVER TRANSPORTATION CO.
 P.O. BOX 2889
 ST. LOUIS, MO
 US 63111
 Contact: BRIAN GRIEWING
 brian.griewing@adm.com
 T:
 F: (314)481-5278

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)