



WEAR	NORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id
CATERPILLAR 299XHP E218
 Component
Hydraulic System
 Fluid
CAT TDTO 10W (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

There is a moderate amount of silt (particulates < 6 microns in size) present in the oil.

FLUID CONDITION

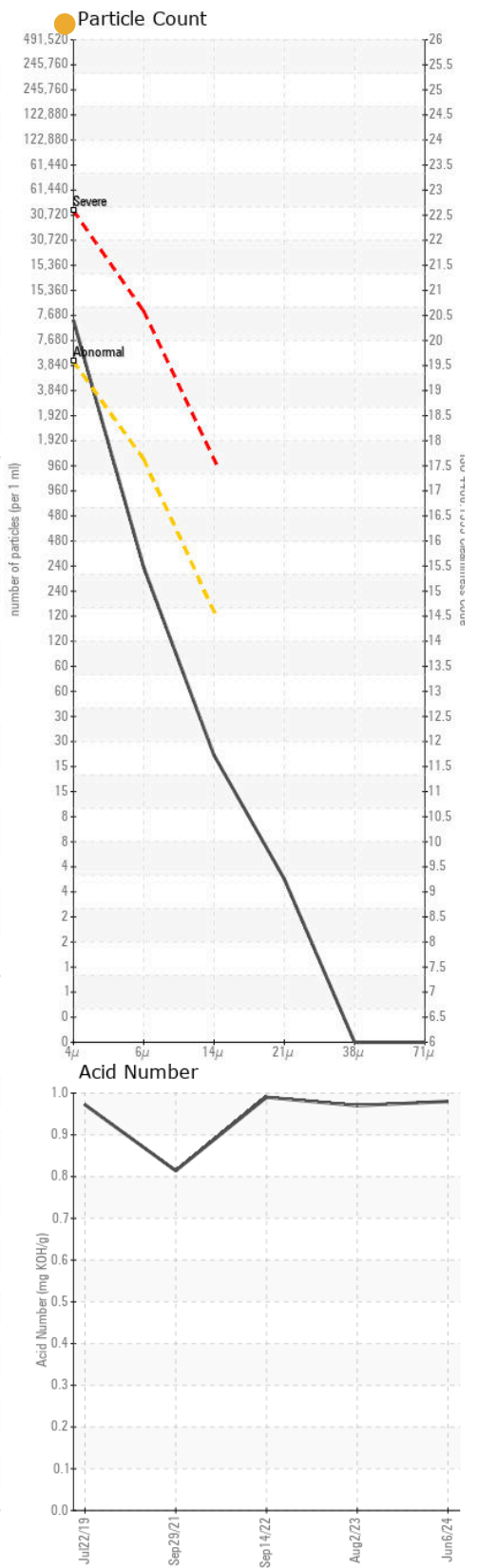
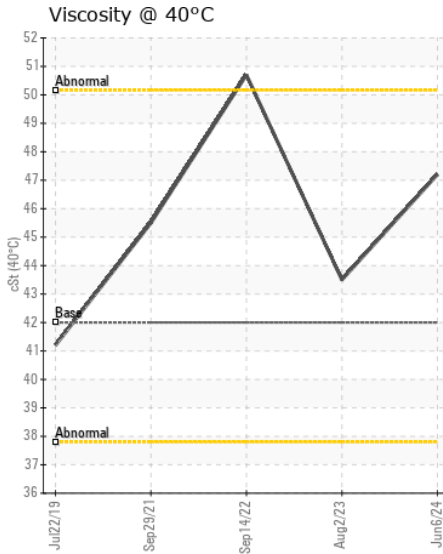
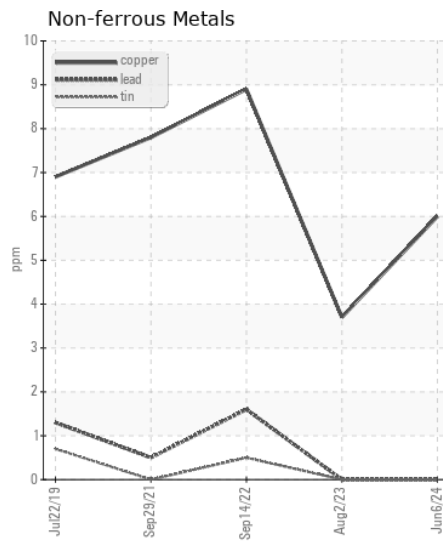
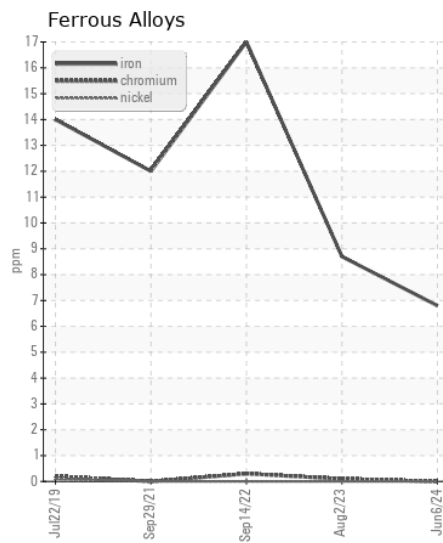
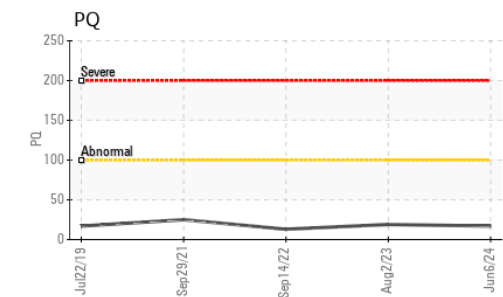
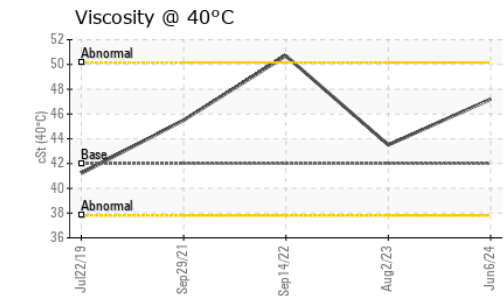
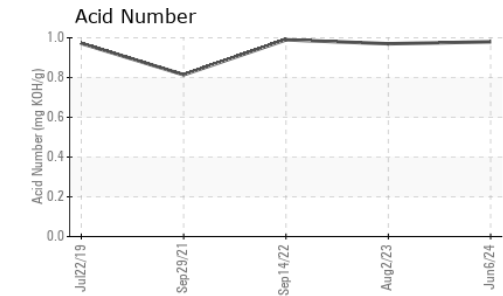
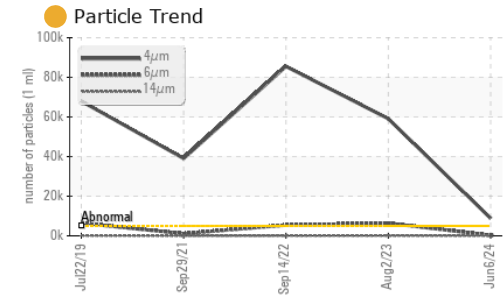
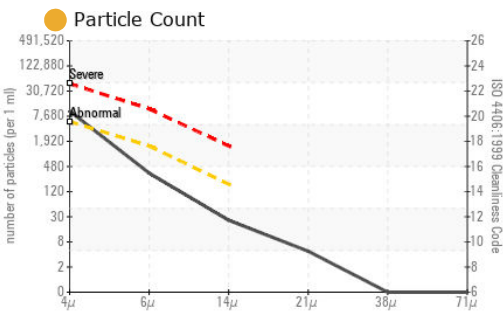
The AN level is acceptable for this fluid. The condition of the oils additive package is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0215356	JR0171653	JR0135190
Sample Date		Client Info		06 Jun 2024	02 Aug 2023	14 Sep 2022
Machine Age	hrs	Client Info		3554	3028	2585
Oil Age	hrs	Client Info		3039	3028	2585
Filter Age	hrs	Client Info		526	0	0
Oil Changed		Client Info		Not Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	N/A	Not Changed
Sample Status				ATTENTION	ABNORMAL	ABNORMAL

PQ	UOM	Method	Limit/Abn	Current	History1	History2
Iron	ppm	ASTM D5185m	>20	7	9	17
Chromium	ppm	ASTM D5185m	>10	0	<1	<1
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>10	2	1	4
Lead	ppm	ASTM D5185m	>10	0	0	2
Copper	ppm	ASTM D5185m	>75	6	4	9
Tin	ppm	ASTM D5185m	>10	0	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

Silicon	ppm	ASTM D5185m	>20	4	2	6
Potassium	ppm	ASTM D5185m	>20	2	0	3
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	8831	59111	85512
Particles >6µm		ASTM D7647	>1300	293	6393	5392
Particles >14µm		ASTM D7647	>160	22	54	22
Particles >21µm		ASTM D7647	>40	4	8	3
Particles >38µm		ASTM D7647	>10	0	0	1
Particles >71µm		ASTM D7647	>3	0	0	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	20/15/12	23/20/13	24/20/12
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

Sodium	ppm	ASTM D5185m		2	0	0
Boron	ppm	ASTM D5185m		54	30	106
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		61	23	76
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m		207	85	224
Calcium	ppm	ASTM D5185m	2980	578	298	553
Phosphorus	ppm	ASTM D5185m	1100	782	721	764
Zinc	ppm	ASTM D5185m	1270	948	946	957
Sulfur	ppm	ASTM D5185m		2441	2196	2191
Acid Number (AN)	mg KOH/g	ASTM D8045		0.98	0.97	0.99
Visc @ 40°C	cSt	ASTM D445	42.0	47.2	43.5	50.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0215356 **Received** : 02 Jul 2024
Lab Number : 06226113 **Tested** : 03 Jul 2024
Unique Number : 11109606 **Diagnosed** : 05 Jul 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: PQ)

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Certificate L2367
 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)