



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CATERPILLAR 966H 966H-L05 A6D02689
 Component
Hydraulic System
 Fluid
CHEVRON RANDO HD 46 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06195886	TR06119580	TR06065591
Sample Date		Client Info		20 May 2024	21 Feb 2024	22 Dec 2023
Machine Age	hrs	Client Info		17655	17442	17268
Oil Age	hrs	Client Info		387	174	1266
Filter Age	hrs	Client Info		387	174	1266
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Not Chngd	Not Chngd	Changed
Sample Status				NORMAL	NORMAL	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	5	4	0
Chromium	ppm	ASTM D5185m	>10	6	4	4
Nickel	ppm	ASTM D5185m	>10	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	0	0	0
Lead	ppm	ASTM D5185m	>10	0	0	0
Copper	ppm	ASTM D5185m	>75	<1	<1	1
Tin	ppm	ASTM D5185m	>10	0	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

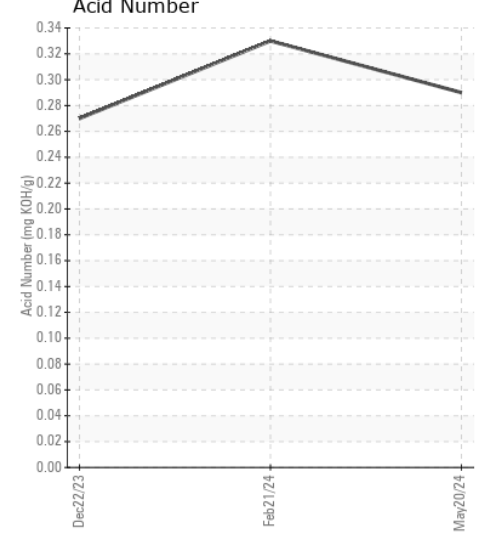
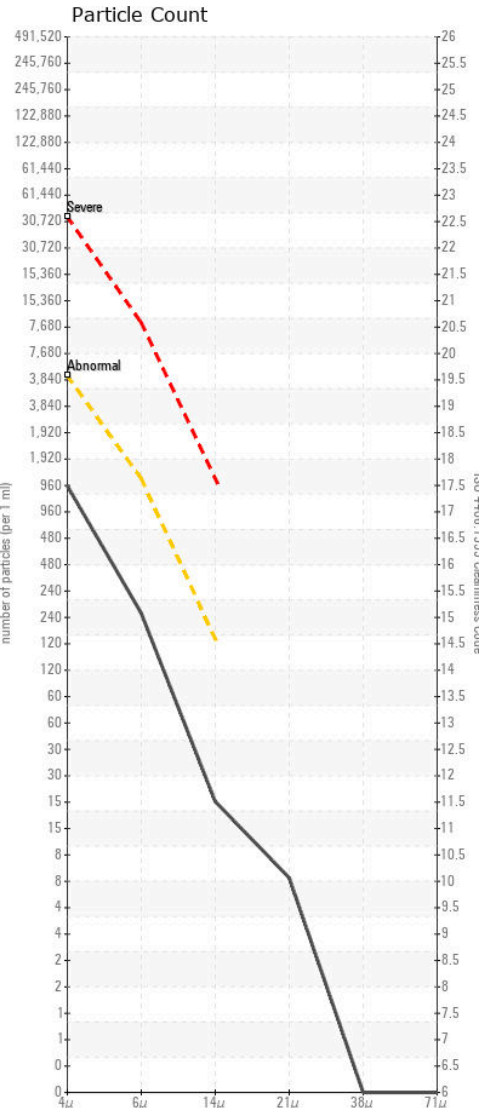
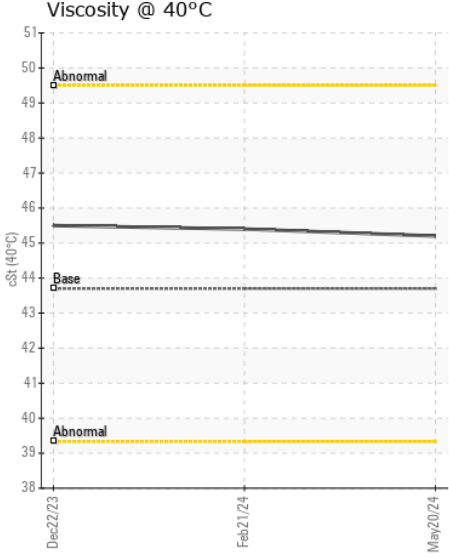
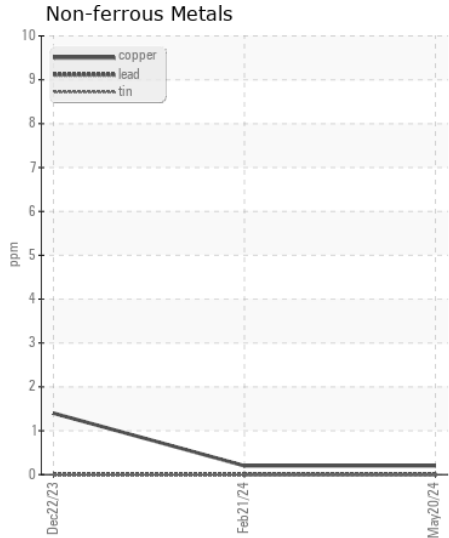
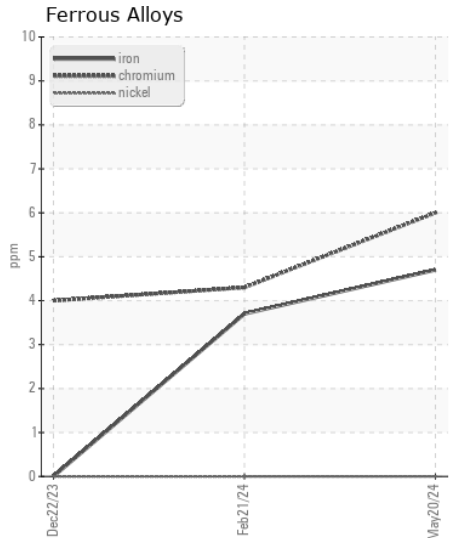
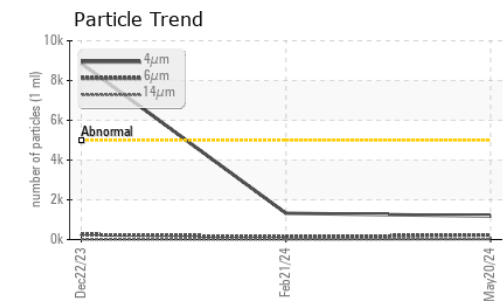
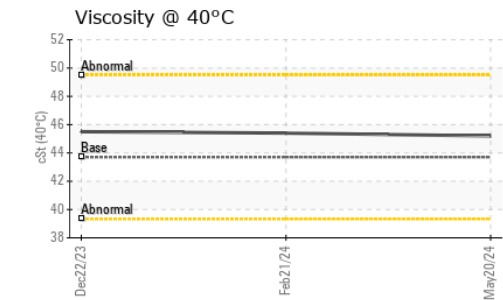
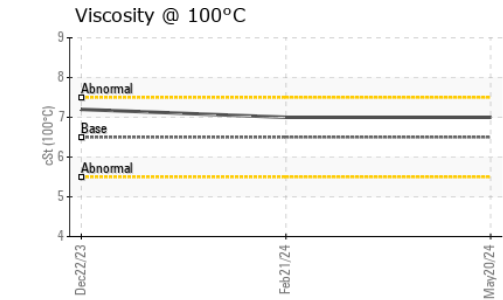
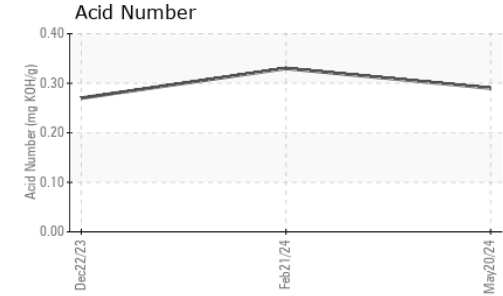
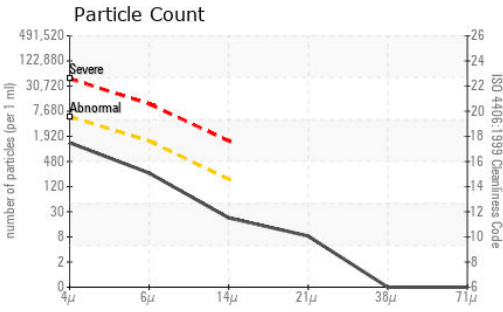
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>20	2	1	1
Potassium	ppm	ASTM D5185m	>20	<1	0	0
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>5000	1183	1325	8867
Particles >6µm		ASTM D7647	>1300	223	128	247
Particles >14µm		ASTM D7647	>160	19	11	11
Particles >21µm		ASTM D7647	>40	7	4	4
Particles >38µm		ASTM D7647	>10	0	0	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	17/15/11	18/14/11	20/15/11
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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	3	0
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m		8	6	12
Calcium	ppm	ASTM D5185m		71	65	68
Phosphorus	ppm	ASTM D5185m		329	290	331
Zinc	ppm	ASTM D5185m		432	363	412
Sulfur	ppm	ASTM D5185m		908	778	758
Acid Number (AN)	mg KOH/g	ASTM D8045		0.29	0.33	0.27
Visc @ 40°C	cSt	ASTM D445	43.7	45.2	45.4	45.5
Visc @ 100°C	cSt	ASTM D445	6.5	7.0	7.0	7.2
Viscosity Index (VI)	Scale	ASTM D2270	97	112	111	118



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06195886 **Received** : 30 May 2024
Lab Number : 06195886 **Tested** : 02 Jun 2024
Unique Number : 11058009 **Diagnosed** : 02 Jun 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: KV100, VI)

BARR-TECH COMPOSTING
 9117 KALLENBERGER RD N
 SPRAGUE, WA
 US 99032
 Contact: RON GROGAN

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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)

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