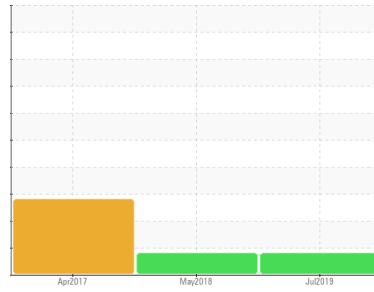


OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Machine Id
TKS PRESS 1 UNIT 5-6

Component
Hydraulic System

Fluid
TULCO LUBSOIL SUPER HYDRAULIC AW 68 (--- GAL)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition

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			TO5000395	TO5010024	TO5008006
Sample Date	Client Info			23 Jul 2019	14 May 2018	03 Apr 2017
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	18	16	14
Chromium	ppm	ASTM D5185m	>10	<1	<1	0
Nickel	ppm	ASTM D5185m		<1	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	<1	<1	<1
Lead	ppm	ASTM D5185m	>10	5	5	5
Copper	ppm	ASTM D5185m	>75	35	20	19
Tin	ppm	ASTM D5185m	>10	<1	0	0
Antimony	ppm	ASTM D5185m		0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		<1	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<1	<1	0
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		<1	<1	<1
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		6	7	4
Calcium	ppm	ASTM D5185m		5	6	4
Phosphorus	ppm	ASTM D5185m	425	221	225	220
Zinc	ppm	ASTM D5185m	500	233	225	216
Sulfur	ppm	ASTM D5185m	1900	4763	2595	3768

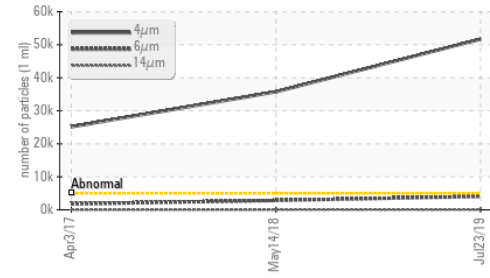
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	26	22	▲ 21
Sodium	ppm	ASTM D5185m		2	2	2
Potassium	ppm	ASTM D5185m	>20	2	<1	0
Water	%	ASTM D6304	>0.1	0.005	0.003	0.005
ppm Water	ppm	ASTM D6304	>1000	50	30	50

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ 51708	▲ 35752	▲ 25133
Particles >6µm		ASTM D7647	>1300	▲ 4048	▲ 2843	● 1795
Particles >14µm		ASTM D7647	>160	34	41	42
Particles >21µm		ASTM D7647	>40	6	17	19
Particles >38µm		ASTM D7647	>10	0	4	10
Particles >71µm		ASTM D7647	>3	0	1	3
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 23/19/12	▲ 22/19/13	▲ 22/18/13

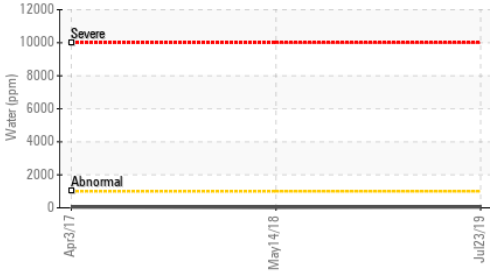
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.7	0.458	0.452	0.451

OIL ANALYSIS REPORT

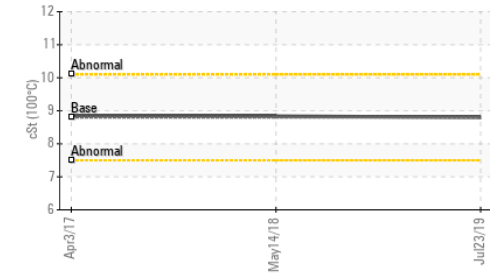
Particle Trend



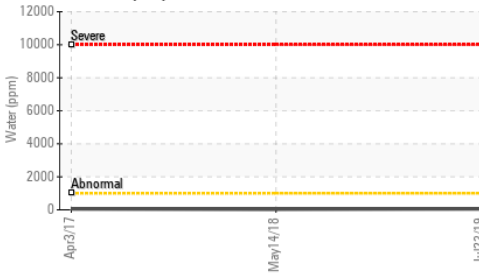
Water (KF)



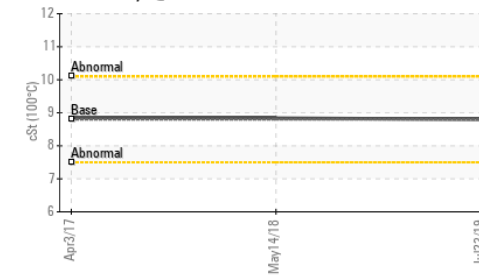
Viscosity @ 100°C



Water (KF)



Viscosity @ 100°C

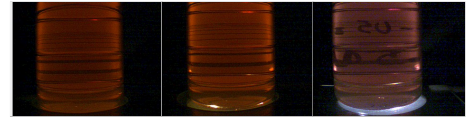


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 @ 40°C	cSt	ASTM D445	67.4	67.14	67.5
Visc @ 100°C	cSt	ASTM D445	8.8	8.84	8.85
Viscosity Index (VI)	Scale	ASTM D2270	102	104	104

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

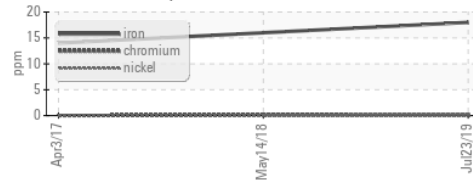


Bottom

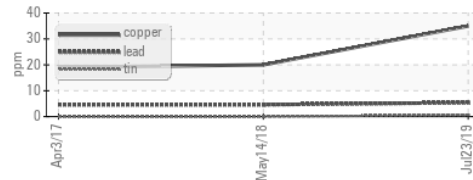


GRAPHS

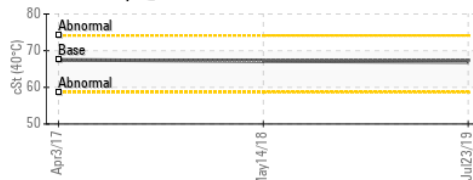
Ferrous Alloys



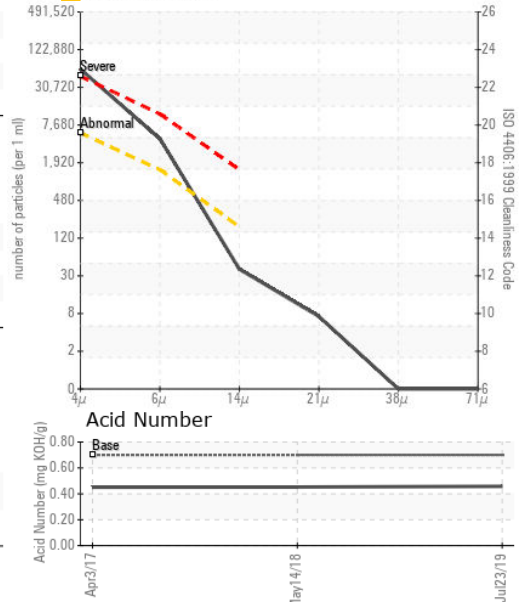
Non-ferrous Metals



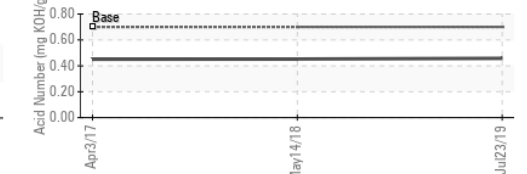
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

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

Sample No. : TO5000395

Lab Number : 04761303

Unique Number : 8674029

Test Package : IND 2 (Additional Tests: KF, KV100, VI)

Received : 24 Jul 2019

Tested : 25 Jul 2019

Diagnosed : 25 Jul 2019 - Doug Bogart

DALLAS MORNING NEWS

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F: (214)977-6888

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)