

OIL ANALYSIS REPORT

Area **MELT SHOP - HYDRAULIC** MELT SHOP CASTER MAIN HYDRAULIC UNIT (S/N 15-5000-0815-0020)

Tank Hydraulic System

Fluid FIRE-RESISTANT FLUID ISO 46 (1585 GAL)

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. The amount and size of particulates present in the system are acceptable.

Fluid Condition

The pH level of this fluid is within the acceptable limits at 9.0. The condition of the oil is acceptable for the time in service.

SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		RP0039058	RP0042712	RP0035580
Sample Date		Client Info		09 May 2024	28 Mar 2024	05 Mar 2024
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				NORMAL	ATTENTION	NORMAL
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	4	3
Chromium	ppm	ASTM D5185m	>20	0	1	1
Nickel	ppm	ASTM D5185m	>20	0	1	<1
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	11	11
Lead	ppm	ASTM D5185m	>20	0	0	0
Copper	ppm	ASTM D5185m	>20	0	<1	<1
Tin	ppm	ASTM D5185m	>20	0	1	1
Vanadium	ppm	ASTM D5185m		0	1	1
Cadmium	ppm	ASTM D5185m		0	<1	<1
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	0	4	2
Barium	ppm	ASTM D5185m	5	0	0	0
Molybdenum	ppm	ASTM D5185m	5	0	0	0
Manganaga		AOTH DELOF		•	-1	0
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm ppm	ASTM D5185m ASTM D5185m	5	<1	<1	<1
-			5 50	-		<1 5
Magnesium	ppm	ASTM D5185m		<1 0 0	<1	<1
Magnesium Calcium	ppm ppm	ASTM D5185m ASTM D5185m	50	<1 0	<1 6	<1 5
Magnesium Calcium Phosphorus	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	50 175	<1 0 0	<1 6 6	<1 5 2
Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 175 62	<1 0 0 15	<1 6 6 4	<1 5 2 <1
Magnesium Calcium Phosphorus Zinc CONTAMINANTS	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method	50 175 62 limit/base	<1 0 0 15 current	<1 6 6 4 history1	<1 5 2 <1 history2
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	50 175 62 limit/base	<1 0 0 15 current <1	<1 6 4 history1 3 45 7	<1 5 2 <1 history2 3
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 175 62 limit/base >15	<1 0 0 15 current <1 0	<1 6 6 4 <u>history1</u> 3 45	<1 5 2 <1 history2 3 48
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 175 62 limit/base >15 >20	<1 0 0 15 <u>current</u> <1 0 <1	<1 6 4 history1 3 45 7	<1 5 2 <1 history2 3 48 7
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	50 175 62 limit/base >15 >20 >55	<1 0 0 15 current <1 0 <1 39.3	<1 6 4 history1 3 45 7 39.4	<1 5 2 <1 history2 3 48 7 35.3
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304	50 175 62 limit/base >15 >20 >55 >55000	<1 0 0 15 <u>current</u> <1 0 <1 39.3 393000	<1 6 4 history1 3 45 7 39.4 394000	<1 5 2 <1 history2 3 48 7 35.3 353000
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304	50 175 62 limit/base >15 >20 >55 >55000 limit/base	<1 0 0 15 current <1 0 <1 39.3 393000 current	<1 6 4 history1 3 45 7 39.4 394000 history1	<1 5 2 <1 history2 3 48 7 35.3 353000 history2
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D6304	50 175 62 limit/base >15 >20 >55 >55000 limit/base >5000	<1 0 0 15 current <1 0 <1 39.3 393000 current 1235	<1 6 6 4 history1 3 45 7 39.4 394000 history1 1801	<1 5 2 <1 history2 3 48 7 35.3 353000 history2 1479
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647	50 175 62 imit/base >15 >20 >55 >55000 imit/base >5000 >1300 >160	<1 0 0 15 current <1 0 <1 39.3 393000 current 1235 673	<1 6 6 4 history1 3 45 7 39.4 394000 history1 1801 981	<1 5 2 <1 <u>history2</u> 3 48 7 35.3 353000 <u>history2</u> 1479 806
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Silicon Sodium Potassium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >6µm Particles >14µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647	50 175 62 imit/base >15 >20 >55 >55000 imit/base >5000 >1300 >160	<1 0 0 15 current <1 0 <1 39.3 393000 current 1235 673 115	<1 6 6 4 history1 3 45 7 39.4 394000 history1 1801 981 981 167	<1 5 2 <1 intervention interven
Magnesium Calcium Phosphorus Zinc CONTAMINANTS Solicon Sodium Potassium Water ppm Water FLUID CLEANLIN Particles >4µm Particles >14µm Particles >21µm	ppm ppm ppm ppm ppm ppm ppm ppm % ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D6304 ASTM D6304 ASTM D7647 ASTM D7647 ASTM D7647 ASTM D7647	50 175 62 >15 >15 >20 >55 >55000 imit/base >5000 >1300 >160 >40	<1 0 0 15 current <1 0 <1 39.3 393000 current 1235 673 115 39	<1 6 6 4 history1 3 45 7 39.4 394000 history1 1801 981 167 56	<1 5 2 <1 interface of the second sec

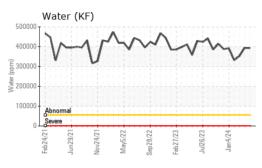
NORMAL

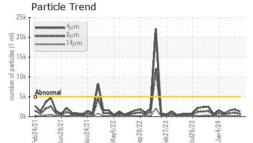
Sample Rating Trend

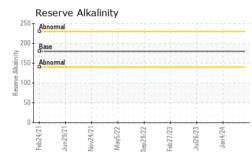


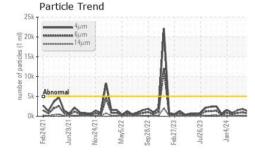


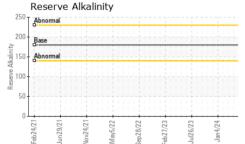
OIL ANALYSIS REPORT











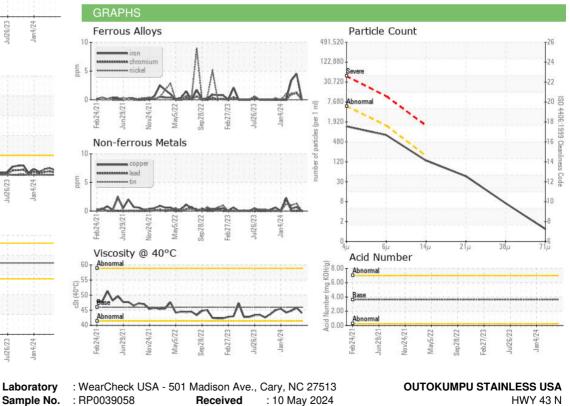
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VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*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	>55	0.2%	0.2%	0.2%
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
pН	Scale 0-14	ASTM D1287		9.00	9.00	10.0
Visc @ 40°C	cSt	ASTM D445	46	44.1	45.8	44.8
SAMPLE IMAGES	3	method	limit/base	current	historv1	historv2

Color



Bottom



: 16 May 2024

HWY 43 N CALVERT, AL US 36513

Contact: MARIO JOHNSON Mario.johnson@outokumpu.com T: (251)321-4105 F: x:

Diagnosed : 16 May 2024 - Jonathan Hester Test Package : IND 2 (Additional Tests: pH, ReserveAlk) 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)

Tested

Report Id: OUTCALAL [WUSCAR] 06175576 (Generated: 05/16/2024 17:59:54) Rev: 1

Certificate 12367

Laboratory

Lab Number : 06175576

Unique Number : 11021629

Submitted By: DALE ROBINSON

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