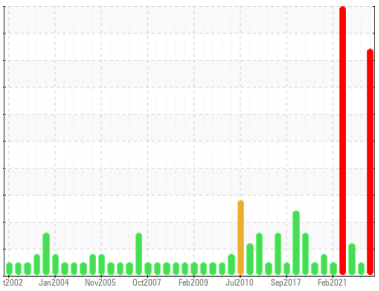
PROBLEM SUMMARY

Sample Rating Trend

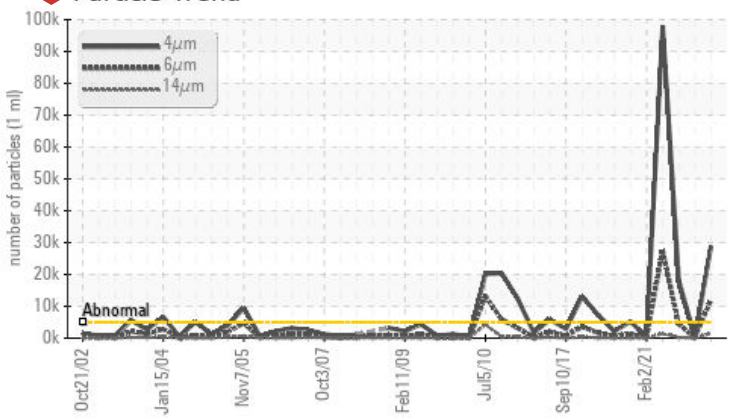


ISO

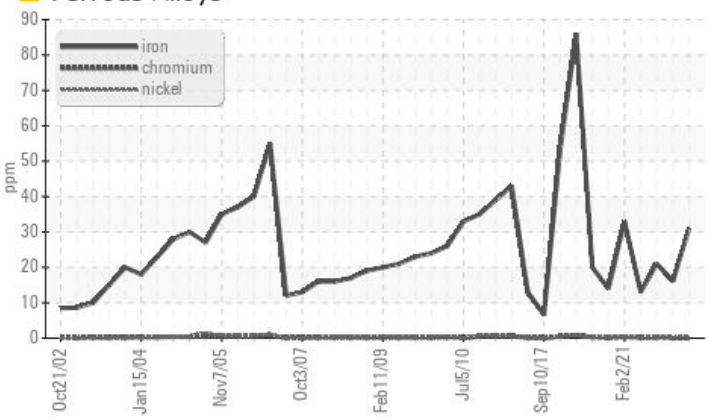
Machine Id
Hyd.Drive Unit for Submerged Ash Conveyor (S/N 35100-CVR -1)
Component
Hydraulic System
Fluid
ESSO NUTO H ISO 68 (150 LTR)

COMPONENT CONDITION SUMMARY

Particle Trend



Ferrous Alloys



RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185(m)	>20	▲ **31**	16	21
Particles >4µm		ASTM D7647	>5000	▲ **28806**	122	▲ 18176
Particles >6µm		ASTM D7647	>1300	⬢ **12002**	35	▲ 4504
Particles >14µm		ASTM D7647	>160	⬢ **1495**	6	▲ 201
Particles >21µm		ASTM D7647	>40	⬢ **462**	2	27
Particles >38µm		ASTM D7647	>10	▲ **16**	0	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	⬢ **22/21/18**	14/12/10	▲ 21/19/15

Customer Id: ONTATI
Sample No.: WC0774137
Lab Number: 02537338
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	SKIPPED	Feb 06 2023	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	SKIPPED	Feb 06 2023	?	Resample in 30-45 days to monitor this situation.
Check Breathers	SKIPPED	Feb 06 2023	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Dirt Access	SKIPPED	Feb 06 2023	?	We advise that you check all areas where contaminants can enter the system.
Filter Fluid	SKIPPED	Feb 06 2023	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

07 Sep 2022 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

17 Mar 2022 Diag: Kevin Marson

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

19 Jul 2021 Diag: Kevin Marson

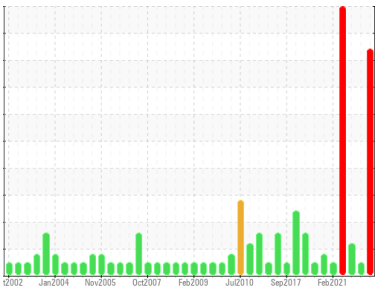
VISUAL METAL

We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. Wear particles and/or ppm levels are abnormally high indicating the need to review OEM limits with attention to components that may generate this type of wear. Include all test results and maintenance activities that have been performed since the abnormal condition was first detected in this review. We recommend that you drain the oil from the component if this has not already been done. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. An inspection for the source(s) of wear may be warranted at this time. Resample in 30-45 days to monitor this situation. Re-sampling is suggested to confirm test results prior to significant maintenance activities being performed. Please indicate that this is a resample on your Sample Information Form (SIF). High concentration of visible metal present. Cylinder wear is indicated. Particles >14µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Particles >21µm are abnormally high. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
Hyd.Drive Unit for Submerged Ash Conveyor (S/N 35100-CVR -1)
Component
Hydraulic System
Fluid
ESSO NUTO H ISO 68 (150 LTR)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.

Wear

Iron ppm levels are abnormal. A sharp increase in the iron level is noted. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion.

Contamination

Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are abnormally high. Particles >38µm are notably high.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0774137**	WC0714820	WC0655696
Sample Date		Client Info		**24 Jan 2023**	07 Sep 2022	17 Mar 2022
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				**SEVERE**	NORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	---	0
Iron	ppm	ASTM D5185(m)	>20	▲ **31**	16	21
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	<1
Nickel	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	0	0
Lead	ppm	ASTM D5185(m)	>20	**<1**	0	0
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	1
Tin	ppm	ASTM D5185(m)	>20	**<1**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	<1	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

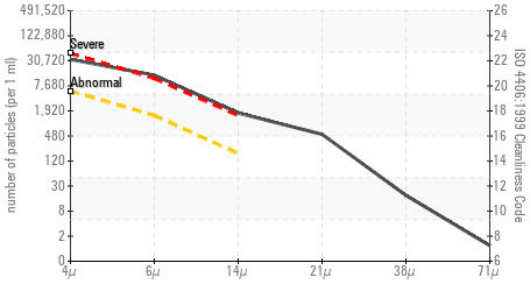
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**<1**	<1	<1
Magnesium	ppm	ASTM D5185(m)	5	**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)	50	**50**	51	49
Phosphorus	ppm	ASTM D5185(m)	330	**357**	364	340
Zinc	ppm	ASTM D5185(m)	420	**412**	419	414
Sulfur	ppm	ASTM D5185(m)	3100	**2611**	2642	2586
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**2**	2	2
Sodium	ppm	ASTM D5185(m)		**0**	<1	0
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	<1

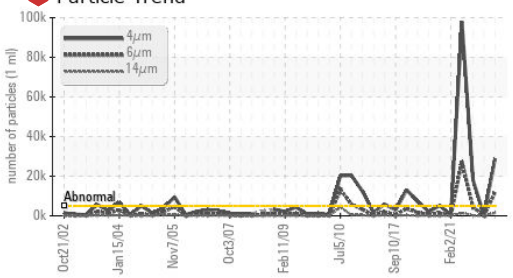
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **28806**	122	▲ 18176
Particles >6µm		ASTM D7647	>1300	● **12002**	35	▲ 4504
Particles >14µm		ASTM D7647	>160	● **1495**	6	▲ 201
Particles >21µm		ASTM D7647	>40	● **462**	2	27
Particles >38µm		ASTM D7647	>10	▲ **16**	0	1
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	● **22/21/18**	14/12/10	▲ 21/19/15

OIL ANALYSIS REPORT

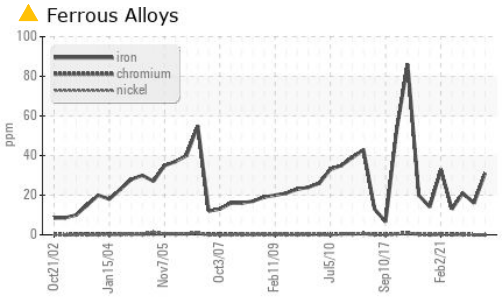
Particle Count



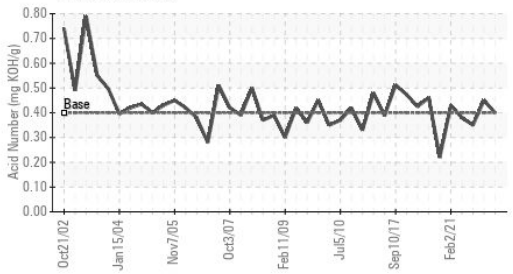
Particle Trend



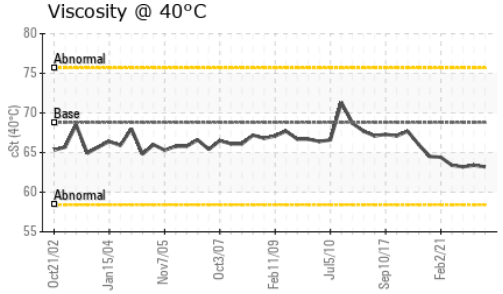
Ferrous Alloys



Acid Number



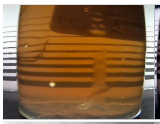
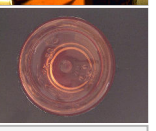
Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	.40	**0.40**	0.45	0.35

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	VLITE
Sand/Dirt	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.8	**63.2**	63.4	63.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter			*no image*	*no image*	*no image*

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0774137 **Received** : 03 Feb 2023
Lab Number : 02537338 **Diagnosed** : 06 Feb 2023
Unique Number : 5526338 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: PQ)

ISO 17025:2017 Accredited Laboratory

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To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.