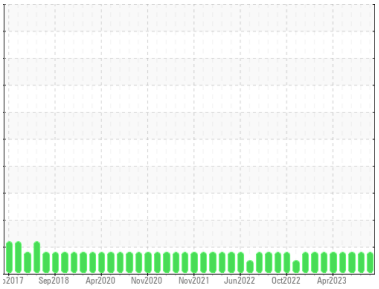
Hilcorp Alaska, LLC

PROBLEM SUMMARY

Sample Rating Trend

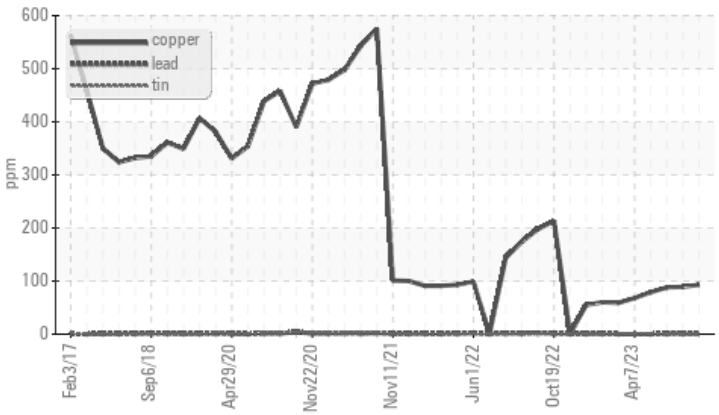


WEAR

Machine Id
E 0101C E 0101C
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



RECOMMENDATION

No corrective action is recommended at this time.
Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL
Copper	ppm	ASTM D5185m	>30	▲ **93**	▲ 89	▲ 88

Customer Id: BPEMPU
Sample No.: HLC0001473
Lab Number: 05979089
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldridge +1
don.b505@comcast.net

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

05 Sep 2023 Diag: Jonathan Hester

WEAR

No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

06 Aug 2023 Diag: Sean Felton

WEAR

No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

09 Jun 2023 Diag: Jonathan Hester

WEAR

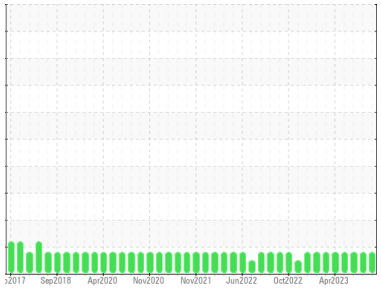
No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

Hilcorp Alaska, LLC

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
E 0101C E 0101C
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

The copper level is abnormal. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**HLC0001473**	HLC0002642	HLC0002577
Sample Date		Client Info		**03 Oct 2023**	05 Sep 2023	06 Aug 2023
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

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>3.0	**<1.0**	<1.0	<1.0

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	**5**	4	4
Chromium	ppm	ASTM D5185m	>20	**0**	0	0
Nickel	ppm	ASTM D5185m	>2	**<1**	0	0
Titanium	ppm	ASTM D5185m	>2	**0**	0	0
Silver	ppm	ASTM D5185m	>2	**0**	0	0
Aluminum	ppm	ASTM D5185m	>30	**0**	<1	<1
Lead	ppm	ASTM D5185m	>30	**<1**	<1	1
Copper	ppm	ASTM D5185m	>30	▲ **93**	▲ 89	▲ 88
Tin	ppm	ASTM D5185m	>15	**<1**	<1	<1
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**<1**	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	**115**	127	144
Barium	ppm	ASTM D5185m	10	**0**	0	0
Molybdenum	ppm	ASTM D5185m	100	**122**	113	115
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	450	**1046**	1061	1124
Calcium	ppm	ASTM D5185m	3000	**402**	442	425
Phosphorus	ppm	ASTM D5185m	1150	**929**	886	929
Zinc	ppm	ASTM D5185m	1350	**1098**	1066	1118
Sulfur	ppm	ASTM D5185m	4250	**3707**	3550	3765

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>30	**7**	6	6
Sodium	ppm	ASTM D5185m	>158	**2**	3	3
Potassium	ppm	ASTM D5185m	>20	**31**	28	27
Glycol	%	*ASTM D2982		**NEG**	NEG	NEG

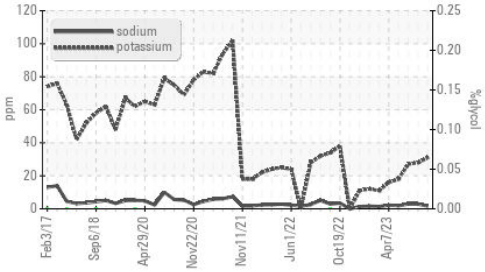
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**4.1**	4.3	4.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	**13.1**	12.8	13.1

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**8.4**	7.8	8.3
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	**7.93**	7.78	8.04

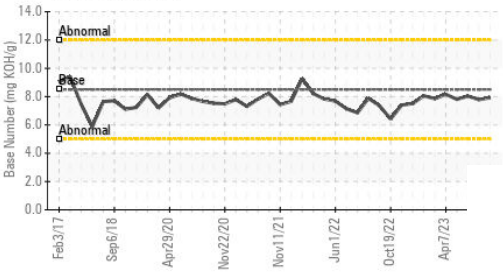
OIL ANALYSIS REPORT

Hilcorp Alaska, LLC

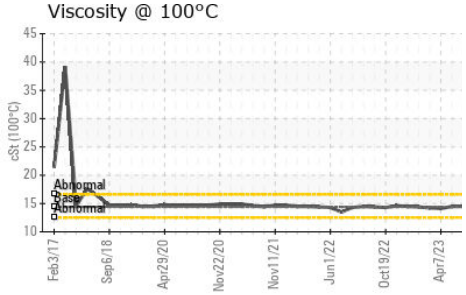
Glycol Contamination



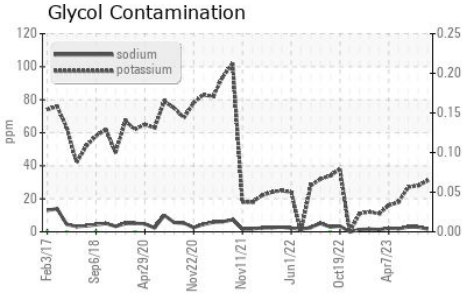
Base Number



Viscosity @ 100°C



Glycol Contamination

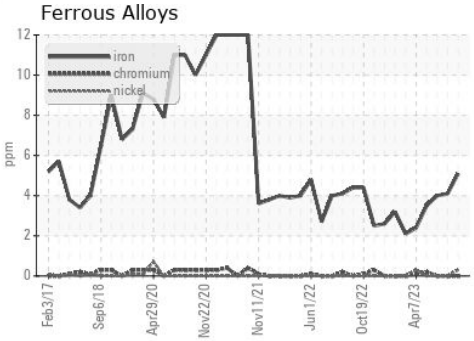


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

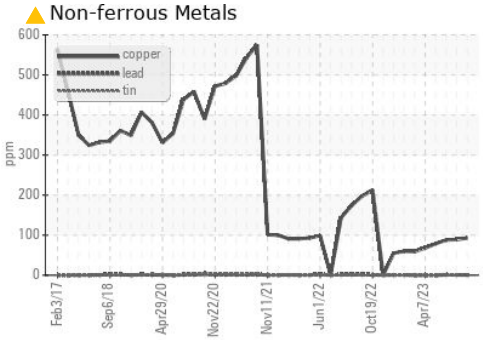
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	**14.5**	14.5	14.5

GRAPHS

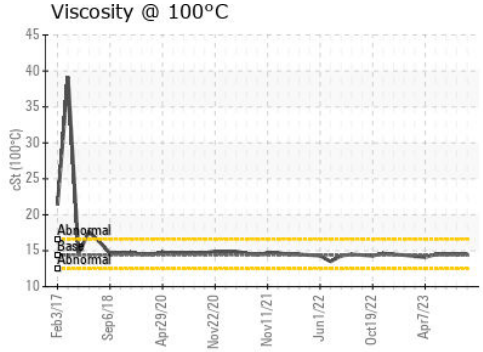
Ferrous Alloys



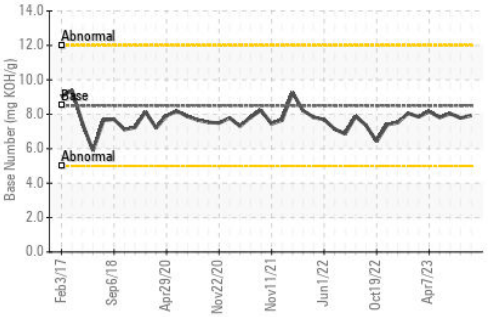
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HLC0001473 **Received** : 13 Oct 2023
Lab Number : 05979089 **Diagnosed** : 17 Oct 2023
Unique Number : 10696384 **Diagnostician** : Don Baldridge
Test Package : IND 2 (Additional Tests: Glycol)

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)

HILCORP EXPLORATION ALASKA - MILNE POINT
1000 MILNE POINT RD
PRUDOE BAY, AK
US 99734
Contact: Evan Reilly
evan.reilly@hilcorp.com
T: (907)670-3231
F: x: