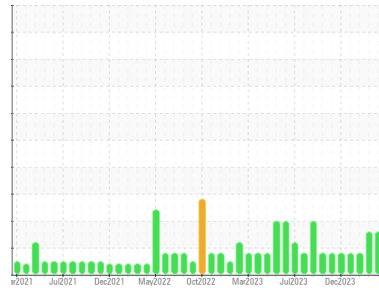




# PROBLEM SUMMARY

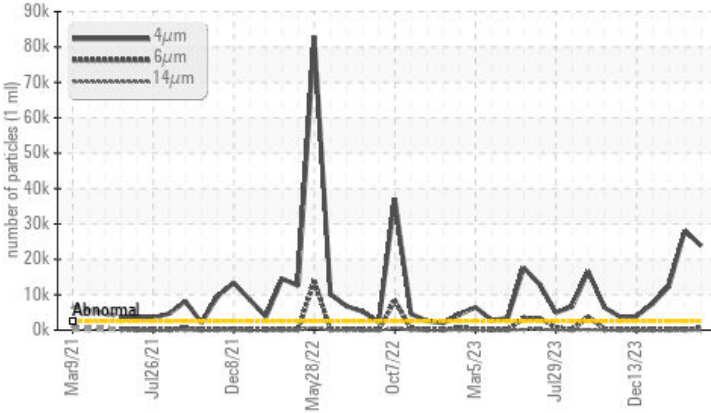
Area  
**IRIG [7008212]**  
 Machine Id  
**IRIG-CWU-HPU-2101 IRIG-CWU-HPU-2101 HPU CATWALK**  
 Component  
**Hydraulic System**  
 Fluid  
**MOBIL DTE 10 EXCEL 32 (120 GAL)**

Sample Rating Trend



## COMPONENT CONDITION SUMMARY

▲ Particle Trend



## RECOMMENDATION

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

## PROBLEMATIC TEST RESULTS

Sample Status		SEVERE	SEVERE	ABNORMAL
Particles >4µm	ASTM D7647 >2500	▲ 23833	▲ 28093	▲ 12288
Oil Cleanliness	ISO 4406 (c) >18/16/13	▲ 22/16/12	▲ 22/15/9	▲ 21/15/10

Customer Id: BPEMPU  
 Sample No.: HLC0003070  
 Lab Number: 06176085  
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
 Wes Davis +1 905-569-8600 x223  
[wesd@wearcheck.ca](mailto:wesd@wearcheck.ca)


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

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Check Breathers	---	---	?	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 Seals	---	---	?	Check seals and/or filters for points of contaminant entry.


HISTORICAL DIAGNOSIS

ISO




**09 Mar 2024 Diag: Wes Davis**  
 Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report




ISO




**06 Feb 2024 Diag: Wes Davis**  
 We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report




ISO



**10 Jan 2024 Diag: Wes Davis**  
 We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

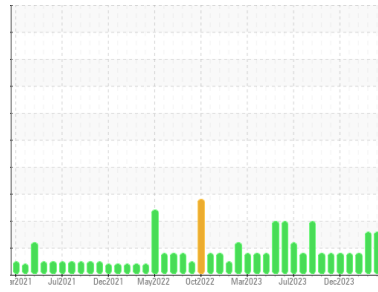
view report





# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area

**IRIG [7008212]**

Machine Id

**IRIG-CWU-HPU-2101 IRIG-CWU-HPU-2101 HPU CATWALK**

Component

**Hydraulic System**

Fluid

**MOBIL DTE 10 EXCEL 32 (120 GAL)**

## DIAGNOSIS

### ▲ Recommendation

Check seals and/or filters for points of contaminant entry. 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. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

### Wear

All component wear rates are normal.

### ▲ Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

### Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>HLC0003070</b>	HLC0003071	HLC0003076
Sample Date	Client Info		<b>27 Apr 2024</b>	09 Mar 2024	06 Feb 2024
Machine Age	hrs	Client Info	<b>8941</b>	8757	8638
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>Filtered</b>	N/A	N/A
Sample Status			<b>SEVERE</b>	SEVERE	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<b>15</b>	15	16
Chromium	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m >20	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185m >20	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m >20	<b>0</b>	1	2
Tin	ppm	ASTM D5185m >20	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	<b>0</b>	0	<1
Molybdenum	ppm	ASTM D5185m	<b>0</b>	0	0
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	<b>1</b>	0	0
Calcium	ppm	ASTM D5185m 120	<b>98</b>	98	86
Phosphorus	ppm	ASTM D5185m 475	<b>449</b>	460	418
Zinc	ppm	ASTM D5185m	<b>51</b>	56	41
Sulfur	ppm	ASTM D5185m 1275	<b>1417</b>	1611	1152

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	<b>2</b>	2	2
Sodium	ppm	ASTM D5185m	<b>16</b>	16	17
Potassium	ppm	ASTM D5185m >20	<b>11</b>	10	8

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>▲ 23833</b>	▲ 28093	▲ 12288
Particles >6µm	ASTM D7647	>640	<b>473</b>	296	218
Particles >14µm	ASTM D7647	>80	<b>21</b>	3	6
Particles >21µm	ASTM D7647	>20	<b>4</b>	1	2
Particles >38µm	ASTM D7647	>4	<b>0</b>	0	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<b>▲ 22/16/12</b>	▲ 22/15/9	▲ 21/15/10

## FLUID DEGRADATION

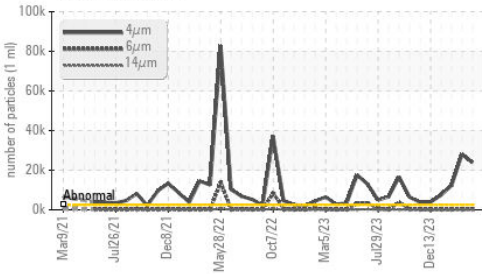
	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.09</b>	0.162	0.13



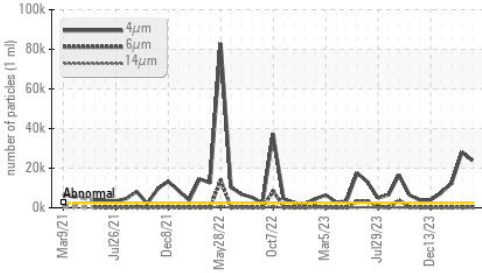
Hilcorp Alaska, LLC

# OIL ANALYSIS REPORT

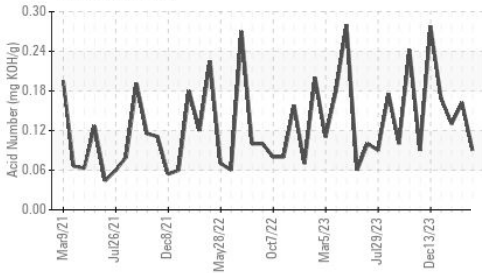
## ▲ Particle Trend



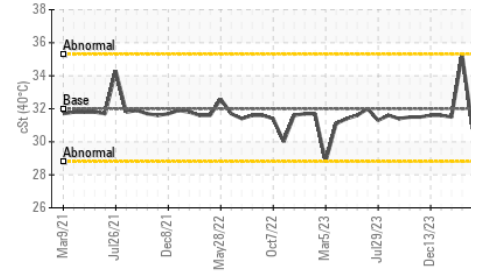
## ▲ Particle Trend



## Acid Number



## Viscosity @ 40°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	>0.05	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	32	30.8	35.3

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

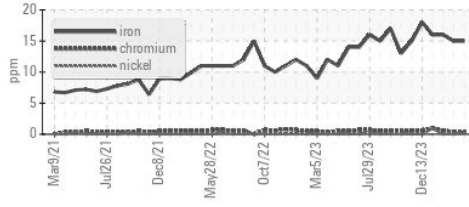


Bottom

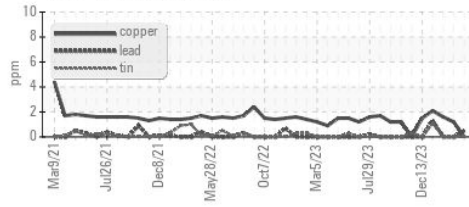


## GRAPHS

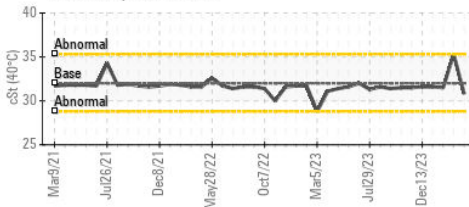
### Ferrous Alloys



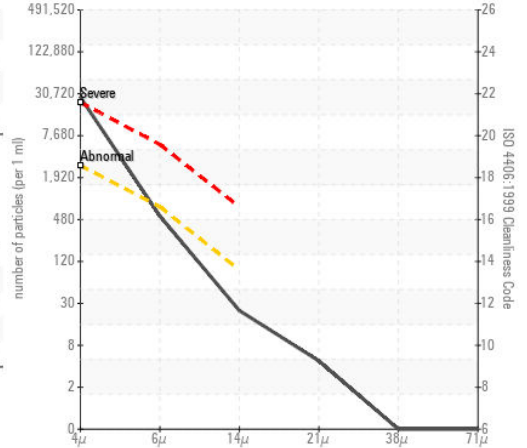
### Non-ferrous Metals



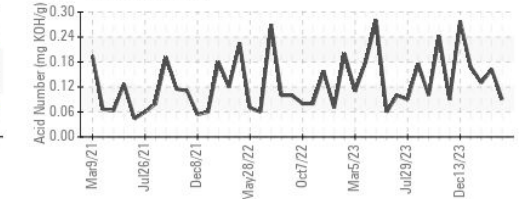
### Viscosity @ 40°C



### ▲ Particle Count



### Acid Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : HLC0003070  
**Lab Number** : 06176085  
**Unique Number** : 11022138  
**Test Package** : IND 2

**HILCORP EXPLORATION ALASKA - MILNE POINT**  
 1000 MILNE POINT RD  
 PRUDOE BAY, AK  
 US 99734

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)

**Received** : 10 May 2024  
**Tested** : 14 May 2024  
**Diagnosed** : 14 May 2024 - Wes Davis

Contact: Evan Reilly  
 evan.reilly@hilcorp.com  
 T: (907)670-3231

F: x: