



# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626620 - DIESEL ENGINE



**Sample No:** VCP440087  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** PRINCE



ALTA EQUIPMENT/FLAGLER CONSTRUCTION EQUIPMENT LLC  
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## SAMPLE INFORMATION

Sample Number	<b>VCP440087</b>	VCP452446	VCP432261	VCP411963
Sample Date	<b>07 Jun 2024</b>	21 Mar 2024	26 Dec 2023	20 Sep 2023
Machine Hours	<b>3112</b>	2661	2127	1554
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Changed</b>	Changed	N/A	N/A
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL



## OIL CONDITION

Visc @ 100°C	cSt	<b>12.6</b>	13.0	13.1	12.7
Base Number (BN)	mg KOH/g	<b>9.8</b>	9.9	10.5	10.6
Oxidation (PA)	%	<b>73</b>	78	76	78



## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.2</b>	0.2	0.2	0.4
Nitration (PA)	%	<b>55</b>	56	53	63
Sulfation (PA)	%	<b>58</b>	58	59	59
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>6</b>	8	4	9
Sodium	ppm	<b>&lt;1</b>	2	2	<1
Potassium	ppm	<b>2</b>	0	0	<1



## WEAR METALS

Iron	ppm	<b>7</b>	7	2	11
Copper	ppm	<b>&lt;1</b>	<1	<1	0
Lead	ppm	<b>&lt;1</b>	0	<1	1
Tin	ppm	<b>&lt;1</b>	<1	0	1
Aluminum	ppm	<b>2</b>	2	<1	3
Chromium	ppm	<b>&lt;1</b>	<1	0	<1
Molybdenum	ppm	<b>42</b>	42	38	44
Nickel	ppm	<b>0</b>	0	0	<1
Titanium	ppm	<b>&lt;1</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>0</b>	<1	0	<1
Vanadium	ppm	<b>&lt;1</b>	0	0	0



## ADDITIVES

Calcium	ppm	<b>1500</b>	1652	1616	1600
Magnesium	ppm	<b>525</b>	522	509	516
Zinc	ppm	<b>1059</b>	1103	1149	1134
Phosphorus	ppm	<b>912</b>	967	879	972
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>35</b>	48	36	30

## Diagnosis

Resample at the next service interval to monitor. All 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 acceptable for the time in service.

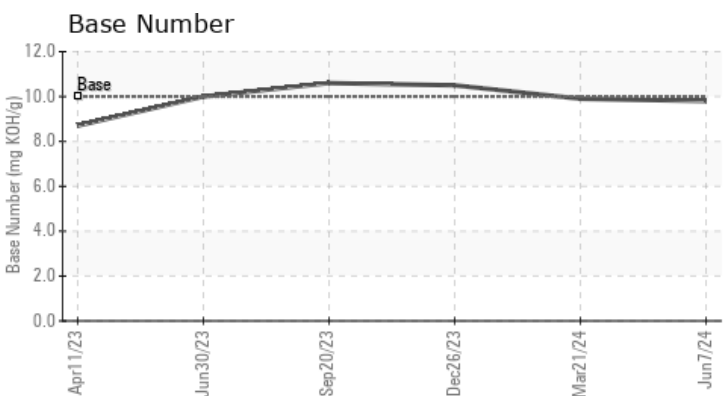
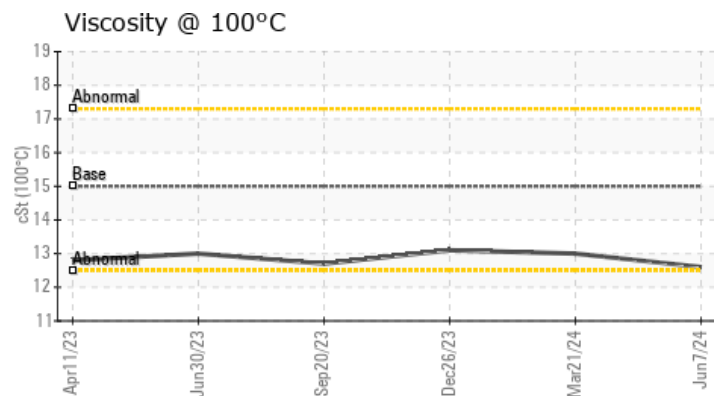
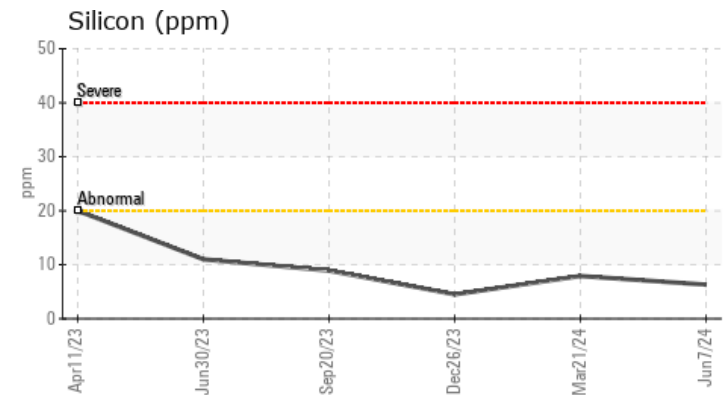
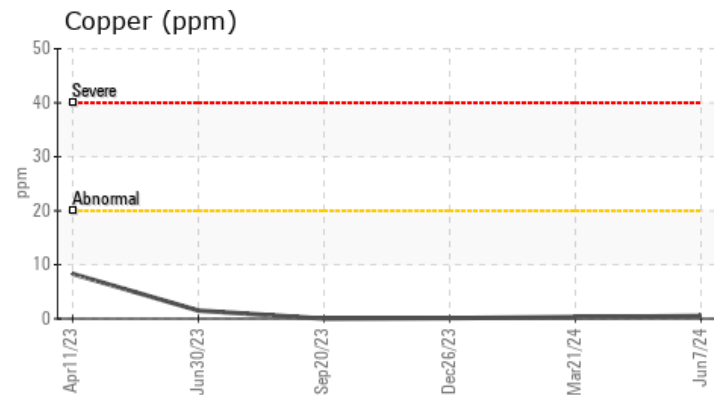
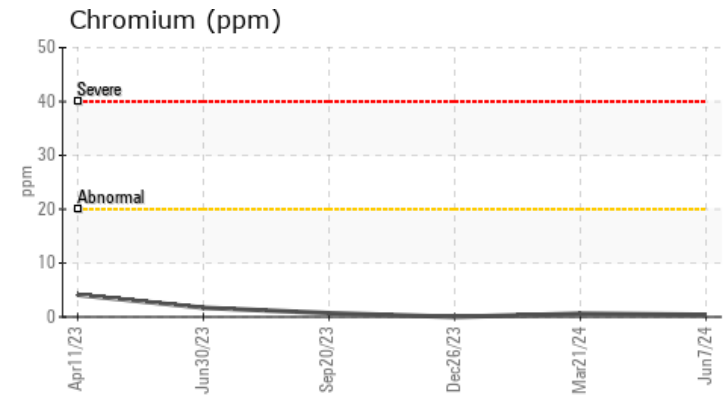
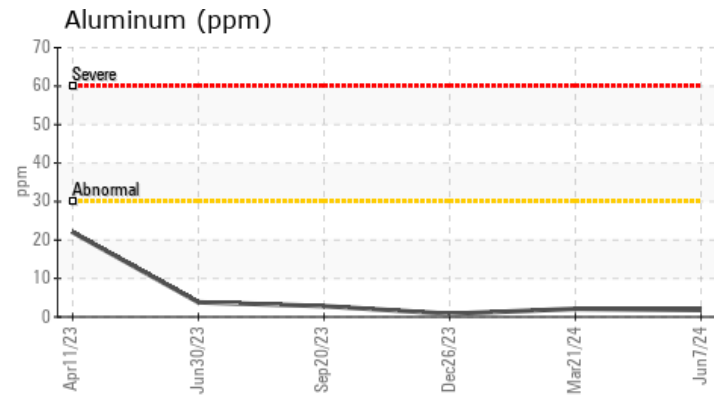
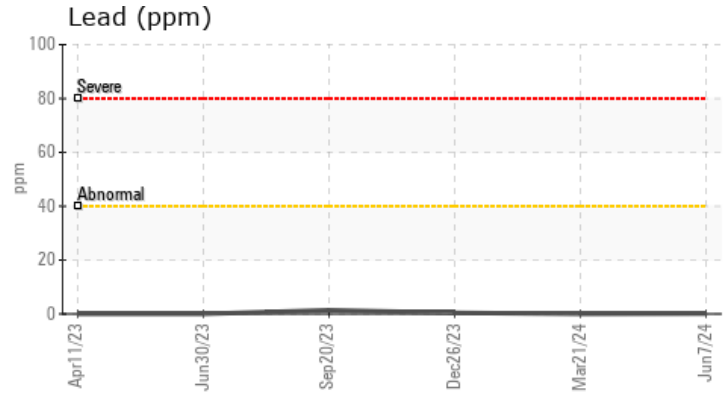
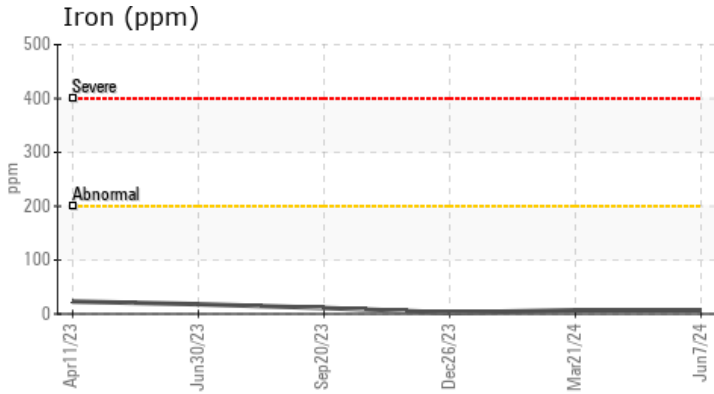
**Depot:** VOLVO0093  
**Unique No:** 11075040  
**Signed:** Angela Borella  
**Report Date:** 14 Jun 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS





# CONSTRUCTION EQUIPMENT

## PRINCE VOLVO L90H 626620 - TRANSMISSION (AUTO)



**Sample No:** VCP440242

**Oil Type:** DEXRON III

**Job No:** PRINCE



### SAMPLE INFORMATION

Sample Number	<b>VCP440242</b>	VCP431756	VCP436063	VCP418306
Sample Date	<b>07 Jun 2024</b>	26 Dec 2023	20 Sep 2023	30 Jun 2023
Machine Hours	<b>3112</b>	2127	1554	1057
Oil Hours	<b>0</b>	0	0	1057
Oil Changed	<b>Not Changd</b>	N/A	N/A	Not Changd
Sample Status	<b>ABNORMAL</b>	ABNORMAL	ABNORMAL	ABNORMAL



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### OIL CONDITION

Visc @ 40°C	cSt	<b>27.0</b>	27.4	26.2	27.9
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### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	<b>17</b>	15	11	14
Sodium	ppm	<b>3</b>	6	6	3
Potassium	ppm	<b>3</b>	2	2	<1



### WEAR METALS

Iron	ppm	<b>336</b>	261	234	182
Copper	ppm	<b>14</b>	11	11	8
Lead	ppm	<b>&lt;1</b>	0	<1	0
Tin	ppm	<b>&lt;1</b>	0	<1	0
Aluminum	ppm	<b>2</b>	2	2	2
Chromium	ppm	<b>&lt;1</b>	<1	<1	<1
Molybdenum	ppm	<b>&lt;1</b>	0	0	<1
Nickel	ppm	<b>&lt;1</b>	<1	<1	0
Titanium	ppm	<b>&lt;1</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>11</b>	10	10	9
Vanadium	ppm	<b>0</b>	0	0	0



### ADDITIVES

Calcium	ppm	<b>128</b>	73	83	83
Magnesium	ppm	<b>3</b>	2	<1	2
Zinc	ppm	<b>59</b>	28	69	26
Phosphorus	ppm	<b>208</b>	196	175	204
Barium	ppm	<b>0</b>	0	<1	<1
Boron	ppm	<b>67</b>	60	36	80

### Diagnosis

No corrective action is recommended at this time. Resample at the next service interval to monitor. The iron level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the fluid. The condition of the fluid is acceptable for the time in service.

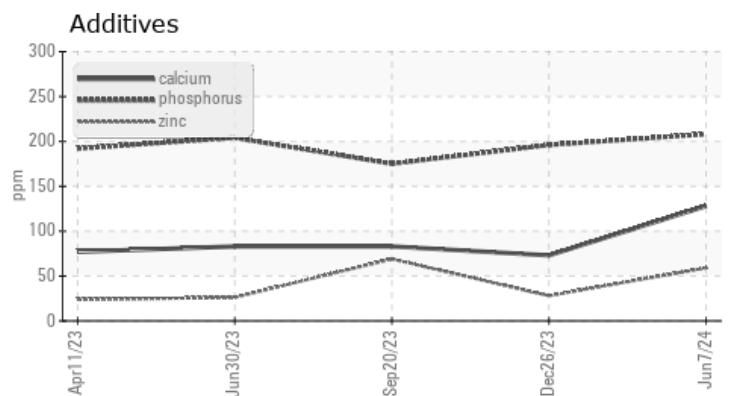
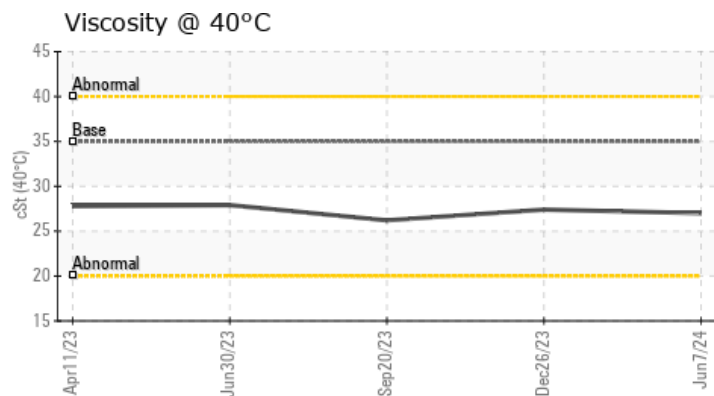
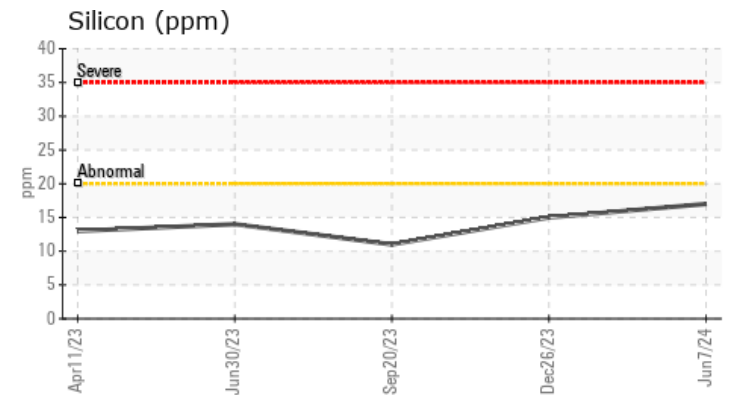
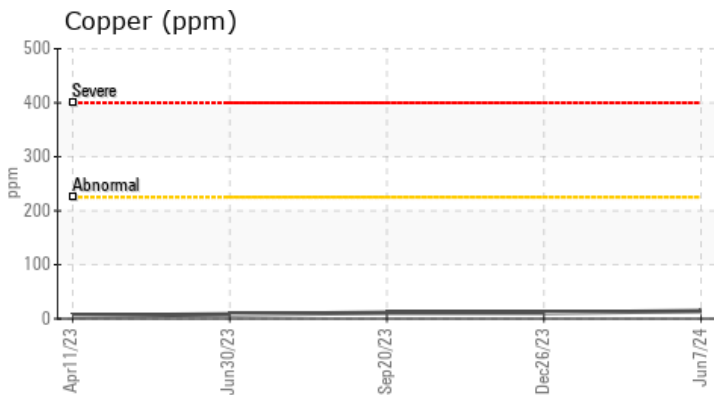
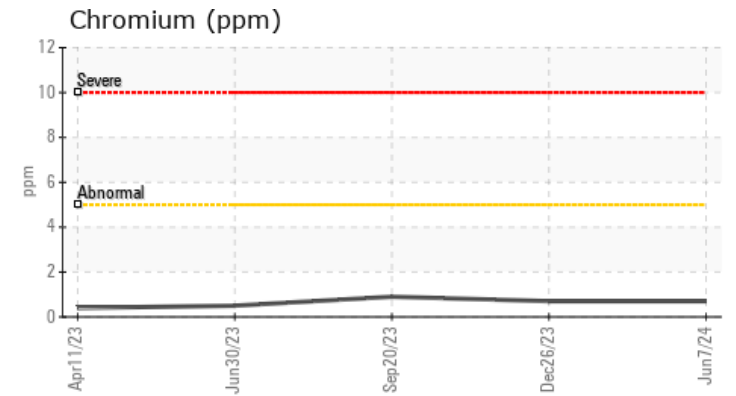
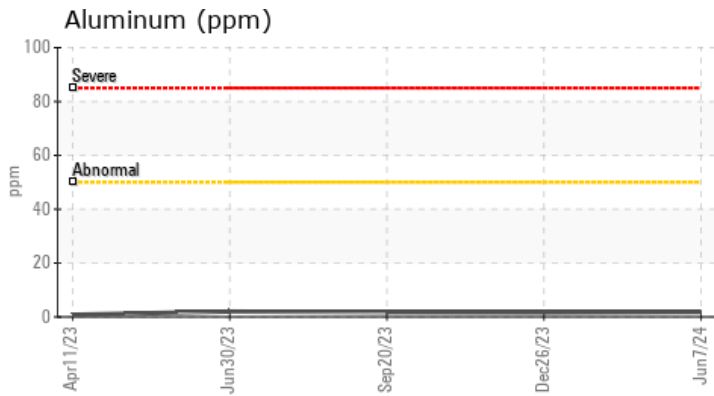
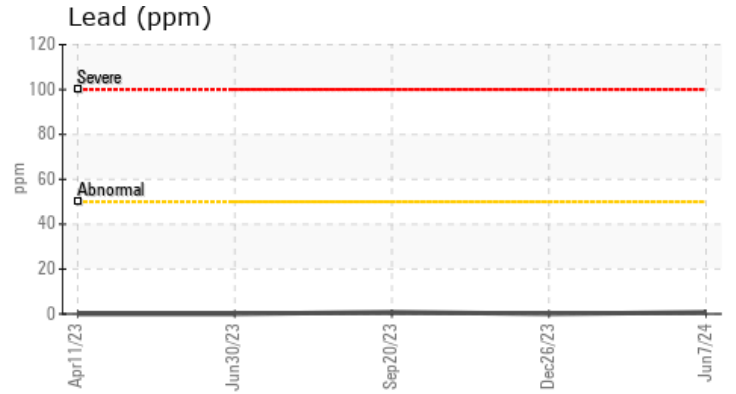
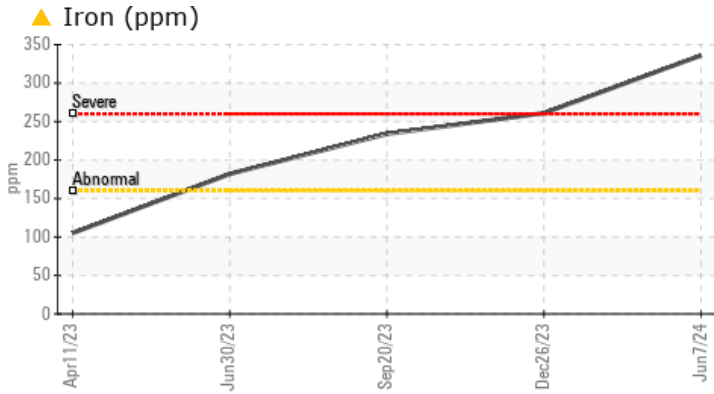
**Depot:** VOLVO0093  
**Unique No:** 11075685  
**Signed:** Angela Borella  
**Report Date:** 14 Jun 2024



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS





# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626620 - HYDRAULIC SYSTEM



**Sample No:** VCP440332  
**Oil Type:** AW HYDRAULIC OIL ISO 46  
**Job No:** PRINCE



## SAMPLE INFORMATION

Sample Number	<b>VCP440332</b>	VCP432260	VCP417567	---
Sample Date	<b>07 Jun 2024</b>	26 Dec 2023	30 Jun 2023	---
Machine Hours	<b>3112</b>	2127	1057	---
Oil Hours	<b>0</b>	0	1057	---
Oil Changed	<b>Not Changd</b>	N/A	Not Changd	---
Sample Status	<b>NORMAL</b>	ABNORMAL	ABNORMAL	---

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## OIL CONDITION

Visc @ 40°C	cSt	<b>42.6</b>	42.5	43.0	---
Acid Number (AN)	mg KOH/g	<b>0.35</b>	0.28	0.33	---

## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	---
Particles >4µm		<b>3493</b>	23908	11617	---
Particles >6µm		<b>767</b>	6273	2590	---
Particles >14µm		<b>32</b>	435	157	---
ISO 4406:1999 (c)		<b>19/17/12</b>	22/20/16	21/19/14	---
Silicon	ppm	<b>4</b>	3	3	---
Sodium	ppm	<b>0</b>	0	0	---
Potassium	ppm	<b>2</b>	1	1	---

## Diagnosis

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.

## WEAR METALS

Iron	ppm	<b>9</b>	7	4	---
Copper	ppm	<b>3</b>	2	2	---
Lead	ppm	<b>2</b>	1	1	---
Tin	ppm	<b>&lt;1</b>	<1	0	---
Aluminum	ppm	<b>2</b>	2	0	---
Chromium	ppm	<b>&lt;1</b>	<1	0	---
Molybdenum	ppm	<b>&lt;1</b>	<1	<1	---
Nickel	ppm	<b>0</b>	0	0	---
Titanium	ppm	<b>&lt;1</b>	<1	0	---
Silver	ppm	<b>0</b>	0	0	---
Manganese	ppm	<b>0</b>	0	0	---
Vanadium	ppm	<b>0</b>	0	0	---

## ADDITIVES

Calcium	ppm	<b>128</b>	57	62	---
Magnesium	ppm	<b>7</b>	4	4	---
Zinc	ppm	<b>448</b>	424	458	---
Phosphorus	ppm	<b>324</b>	357	343	---
Barium	ppm	<b>0</b>	0	1	---
Boron	ppm	<b>2</b>	0	0	---

**Depot:** VOLVO0093  
**Unique No:** 11075174  
**Signed:** Wes Davis  
**Report Date:** 13 Jun 2024



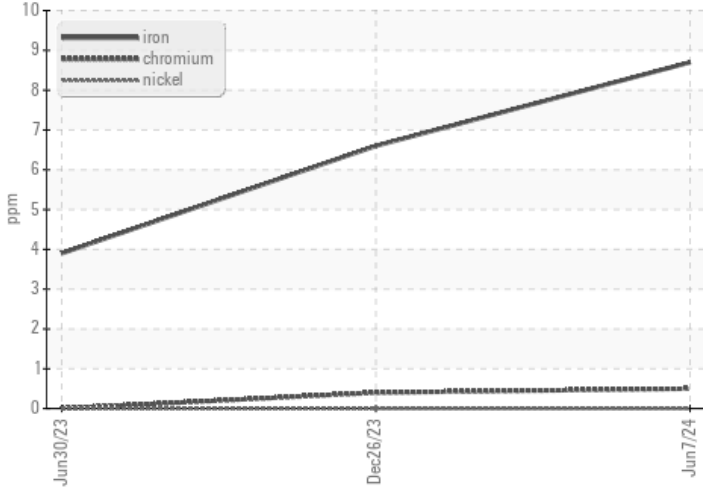


# CONSTRUCTION EQUIPMENT

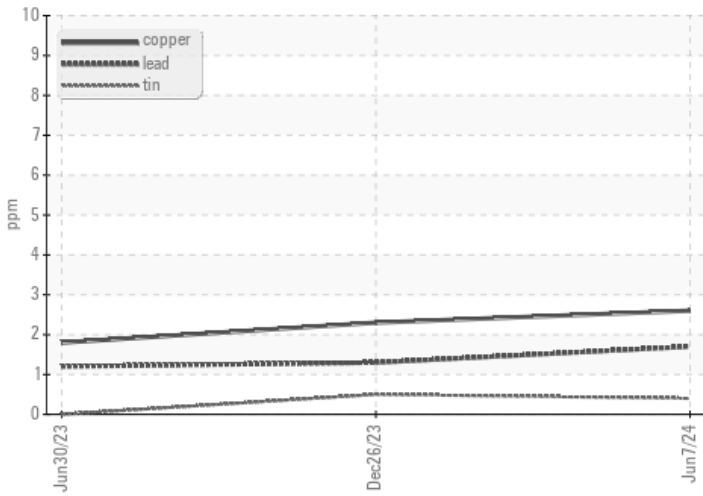


## GRAPHS

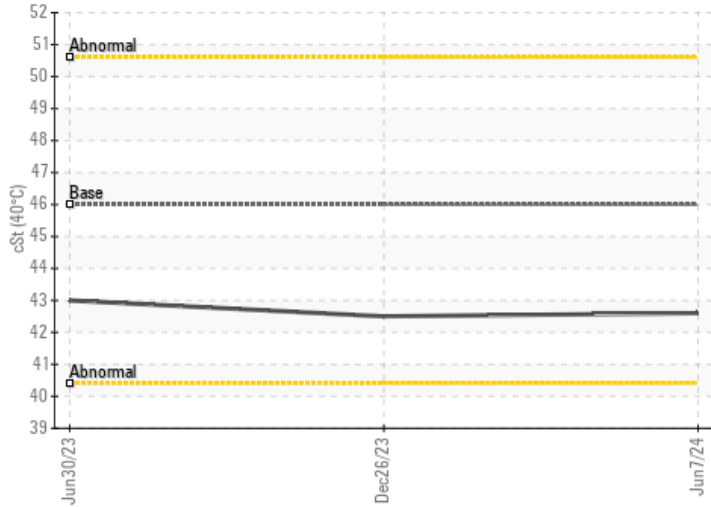
### Ferrous Alloys



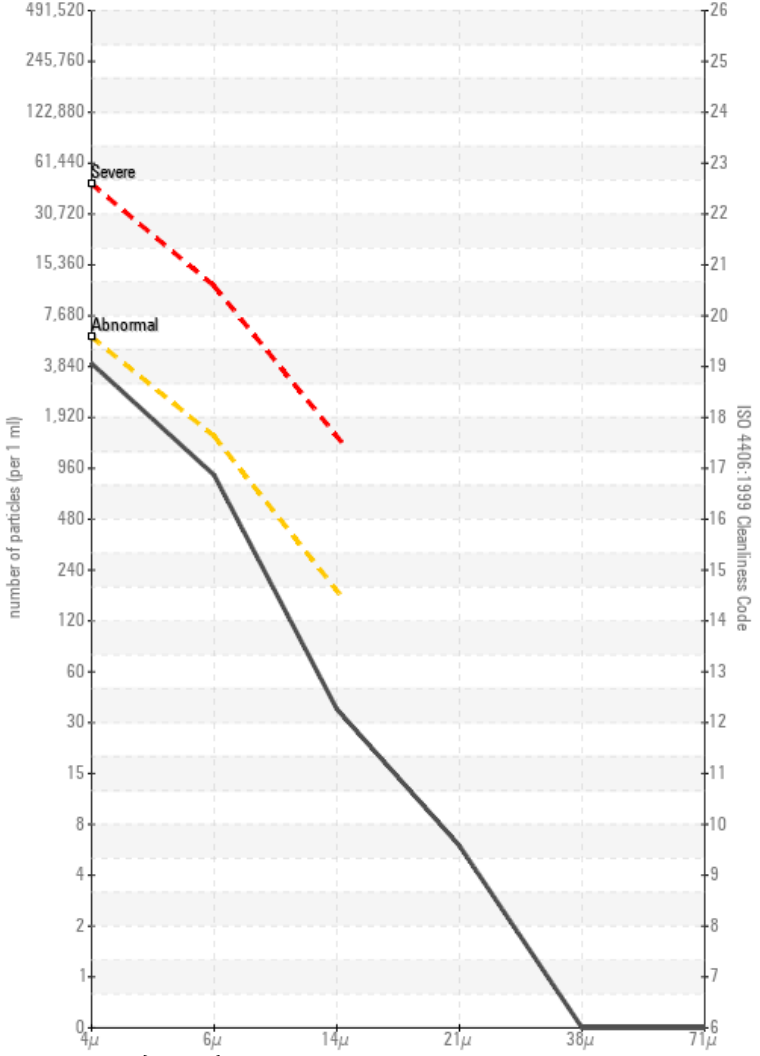
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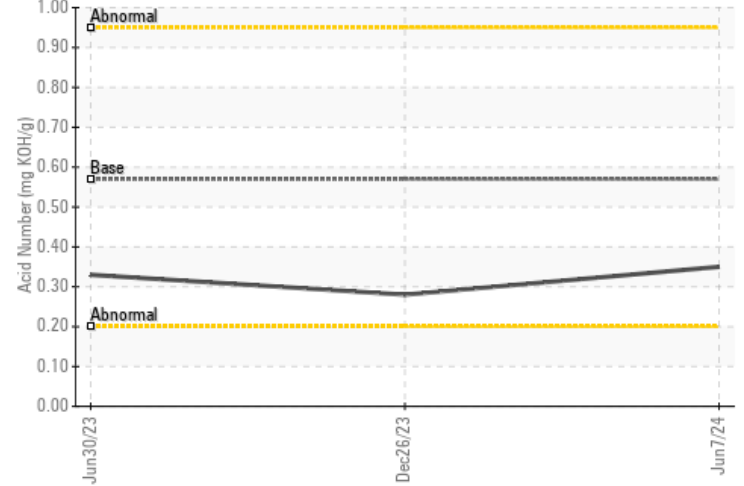
### Viscosity @ 40°C



### Particle Count



### Acid Number





# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626620 - FRONT AXLE



**Sample No:** VCP440241  
**Oil Type:** VOLVO WB 102  
**Job No:** PRINCE



## SAMPLE INFORMATION

Sample Number	<b>VCP440241</b>	VCP417589	---	---
Sample Date	<b>07 Jun 2024</b>	30 Jun 2023	---	---
Machine Hours	<b>3112</b>	1057	---	---
Oil Hours	<b>0</b>	1057	---	---
Oil Changed	<b>Not Chngd</b>	Changed	---	---
Sample Status	<b>ABNORMAL</b>	NORMAL	---	---

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## OIL CONDITION

Visc @ 40°C	cSt	<b>43.4</b>	41.5	---	---
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## CONTAMINATION

Water	%	<b>0.447</b>	NEG	---	---
Silicon	ppm	<b>13</b>	22	---	---
Sodium	ppm	<b>0</b>	4	---	---
Potassium	ppm	<b>2</b>	0	---	---

## Diagnosis

We advise that you check for the source of water entry. Resample at the next service interval to monitor. All component wear rates are normal. There is a moderate concentration of water present in the oil. The condition of the oil is acceptable for the time in service.



## WEAR METALS

Iron	ppm	<b>26</b>	74	---	---
Copper	ppm	<b>&lt;1</b>	0	---	---
Lead	ppm	<b>&lt;1</b>	0	---	---
Tin	ppm	<b>&lt;1</b>	0	---	---
Aluminum	ppm	<b>2</b>	2	---	---
Chromium	ppm	<b>&lt;1</b>	4	---	---
Molybdenum	ppm	<b>1</b>	23	---	---
Nickel	ppm	<b>0</b>	0	---	---
Titanium	ppm	<b>&lt;1</b>	<1	---	---
Silver	ppm	<b>0</b>	0	---	---
Manganese	ppm	<b>1</b>	11	---	---
Vanadium	ppm	<b>0</b>	0	---	---



## ADDITIVES

Calcium	ppm	<b>3913</b>	4179	---	---
Magnesium	ppm	<b>15</b>	16	---	---
Zinc	ppm	<b>1576</b>	1729	---	---
Phosphorus	ppm	<b>1173</b>	1390	---	---
Barium	ppm	<b>0</b>	0	---	---
Boron	ppm	<b>149</b>	150	---	---

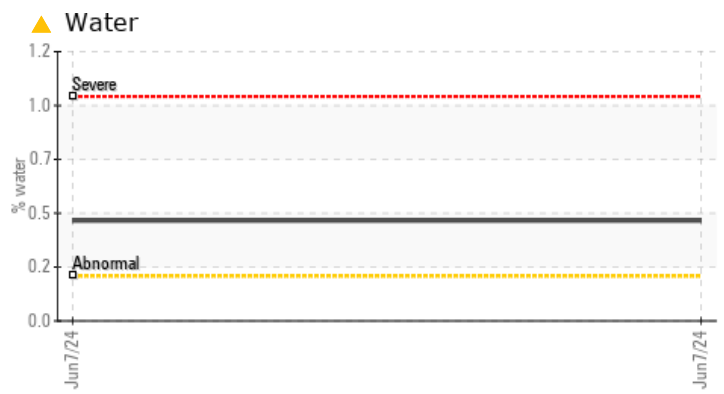
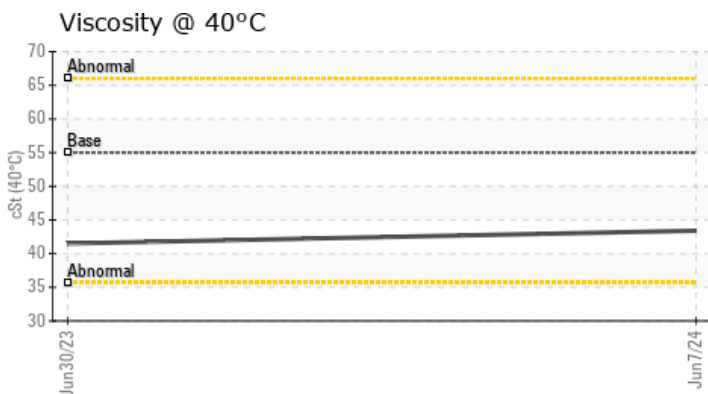
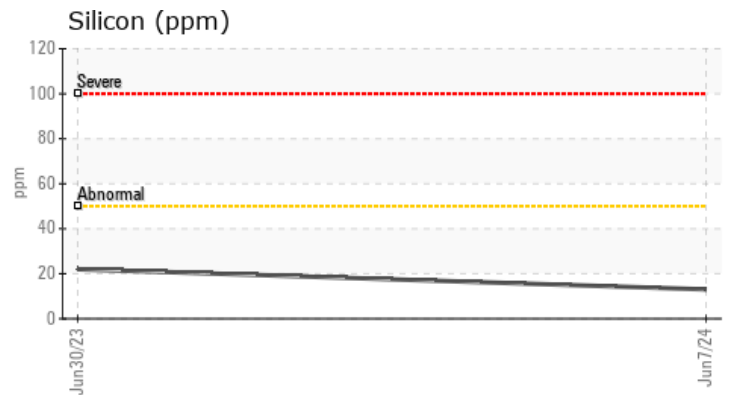
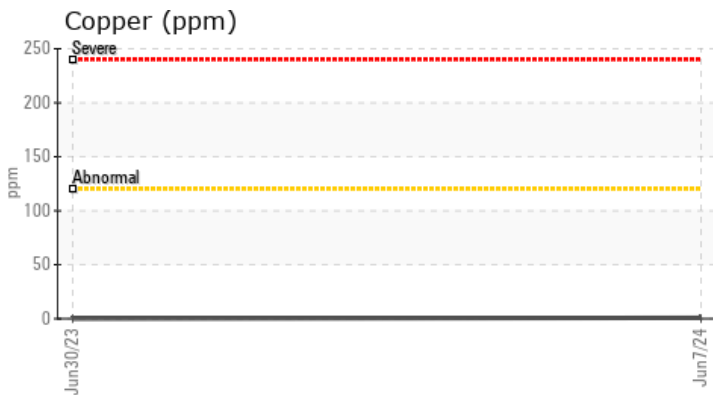
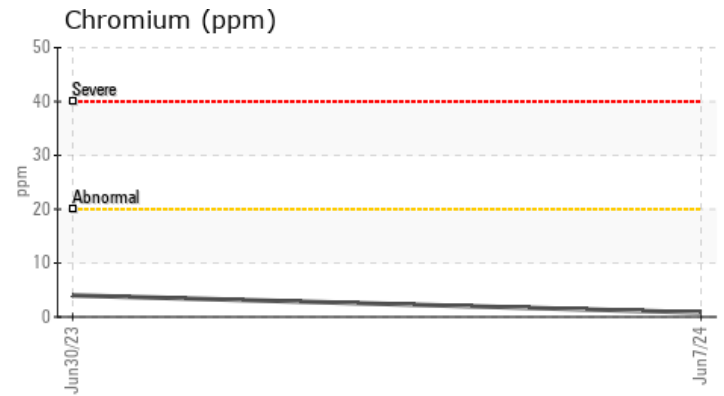
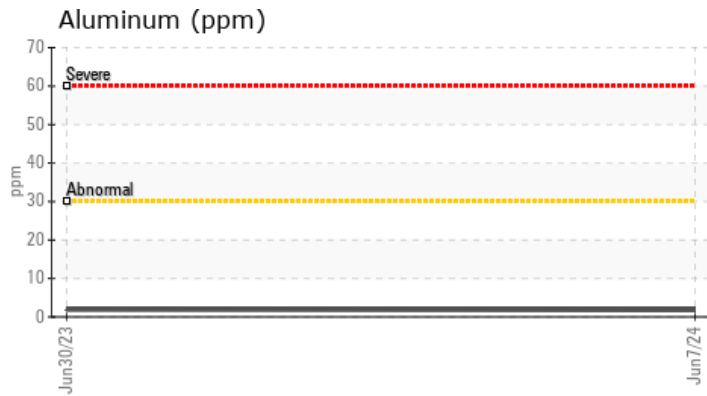
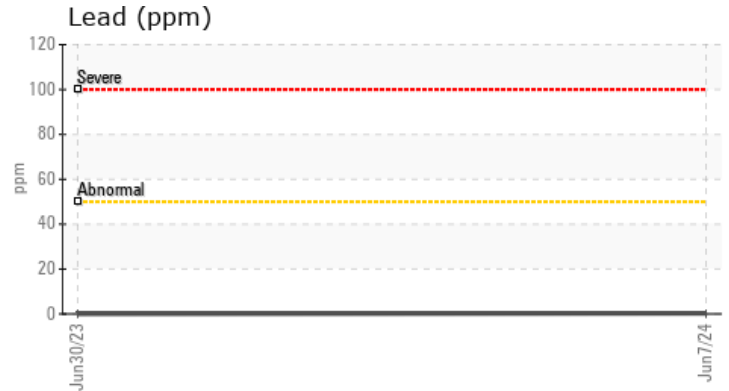
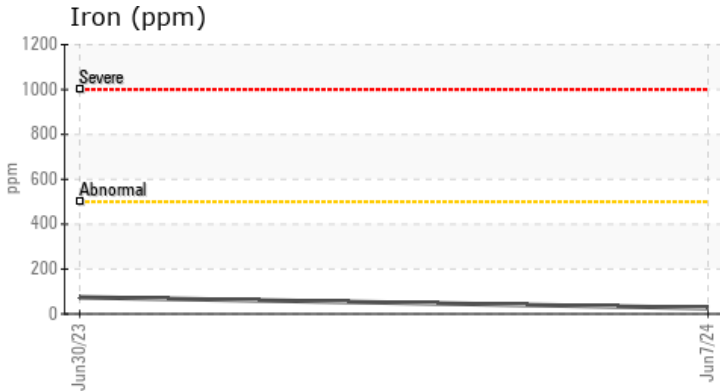
**Depot:** VOLVO0093  
**Unique No:** 11075556  
**Signed:** Don Baldrige  
**Report Date:** 14 Jun 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS







# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626620 - REAR AXLE



**Sample No:** VCP440335  
**Oil Type:** VOLVO WB 102  
**Job No:** PRINCE



## SAMPLE INFORMATION

Sample Number	<b>VCP440335</b>	VCP407852	---	---
Sample Date	<b>07 Jun 2024</b>	30 Jun 2023	---	---
Machine Hours	<b>3112</b>	1057	---	---
Oil Hours	<b>0</b>	1057	---	---
Oil Changed	<b>Not Chngd</b>	Changed	---	---
Sample Status	<b>NORMAL</b>	NORMAL	---	---

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## OIL CONDITION

Visc @ 40°C	cSt	<b>42.7</b>	43.1	---	---
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## CONTAMINATION

Water	%	<b>NEG</b>	NEG	---	---
Silicon	ppm	<b>13</b>	24	---	---
Sodium	ppm	<b>0</b>	4	---	---
Potassium	ppm	<b>3</b>	<1	---	---

## Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.



## WEAR METALS

Iron	ppm	<b>29</b>	79	---	---
Copper	ppm	<b>15</b>	61	---	---
Lead	ppm	<b>&lt;1</b>	0	---	---
Tin	ppm	<b>1</b>	7	---	---
Aluminum	ppm	<b>2</b>	2	---	---
Chromium	ppm	<b>&lt;1</b>	4	---	---
Molybdenum	ppm	<b>&lt;1</b>	4	---	---
Nickel	ppm	<b>0</b>	<1	---	---
Titanium	ppm	<b>&lt;1</b>	<1	---	---
Silver	ppm	<b>0</b>	0	---	---
Manganese	ppm	<b>1</b>	8	---	---
Vanadium	ppm	<b>0</b>	0	---	---



## ADDITIVES

Calcium	ppm	<b>3712</b>	4261	---	---
Magnesium	ppm	<b>16</b>	17	---	---
Zinc	ppm	<b>1551</b>	1740	---	---
Phosphorus	ppm	<b>1203</b>	1383	---	---
Barium	ppm	<b>0</b>	0	---	---
Boron	ppm	<b>151</b>	152	---	---

**Depot:** VOLVO0093  
**Unique No:** 11075555  
**Signed:** Wes Davis  
**Report Date:** 14 Jun 2024

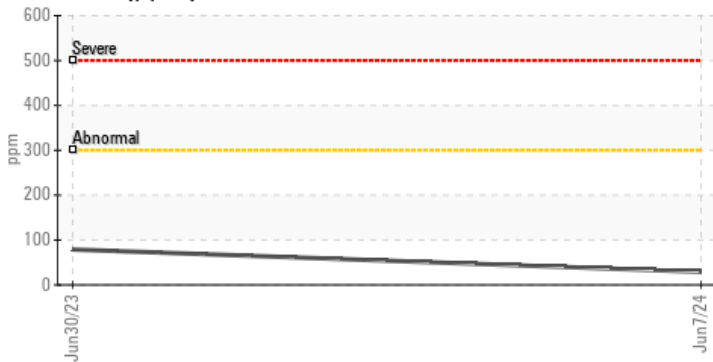


# CONSTRUCTION EQUIPMENT

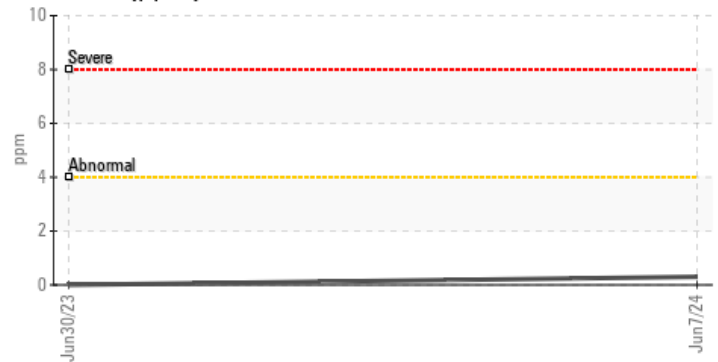


## GRAPHS

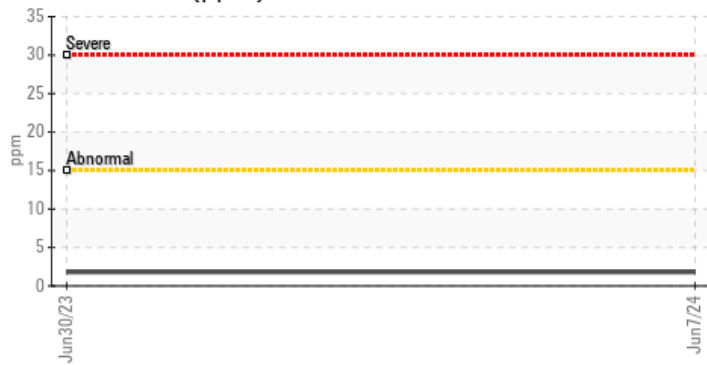
### Iron (ppm)



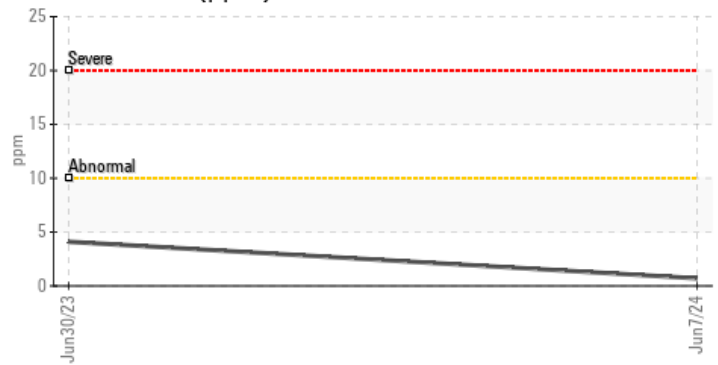
### Lead (ppm)



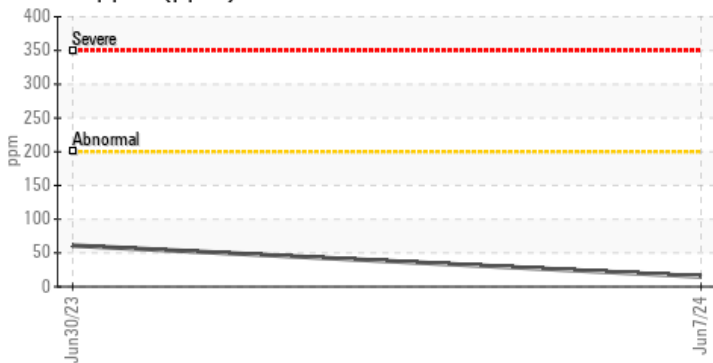
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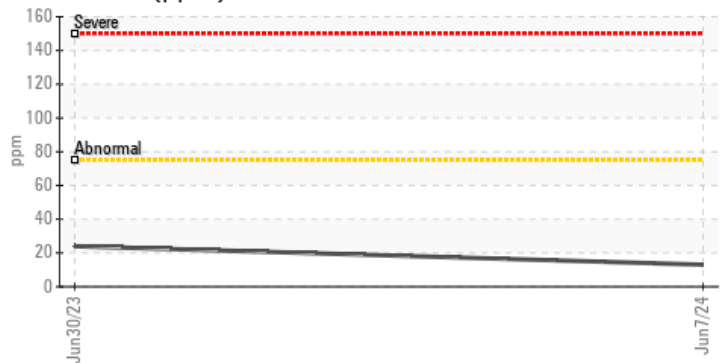
### Chromium (ppm)



### Copper (ppm)



### Silicon (ppm)



### Viscosity @ 40°C



### Additives

