

[Sandeno East Asphalt Plant] DCONSTRUCTIONEAST

Customer: PTRHTF30107
 D-CONSTRUCTION
 16805 QUARRY RD
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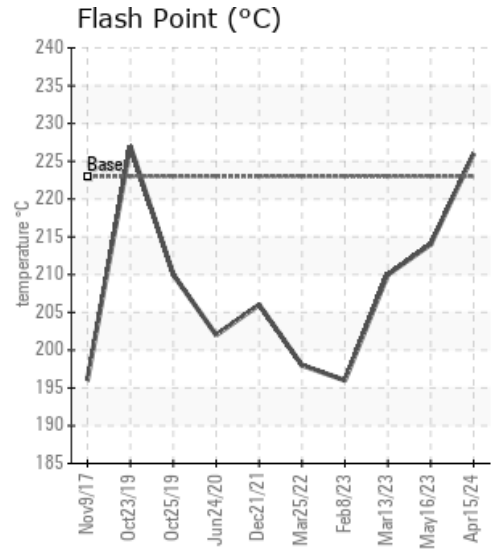
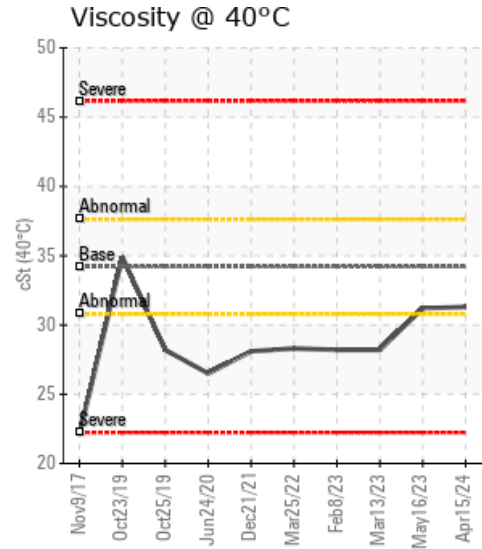
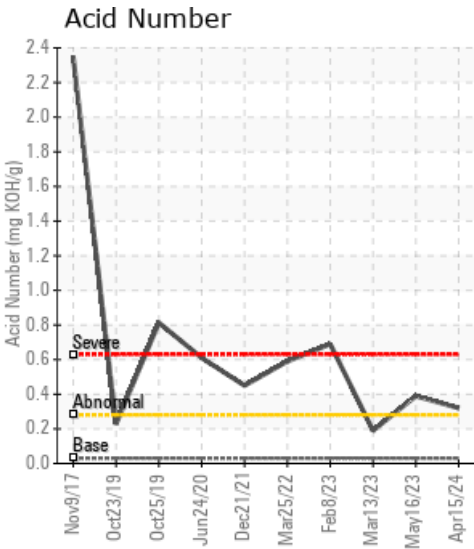
System Information
 System Volume: 350 gal
 Bulk Operating Temp: 500F / 260C
 Heating Source:
 Blanket:
 Fluid: PETRO CANADA PETRO-THERM
 Make: BURKE

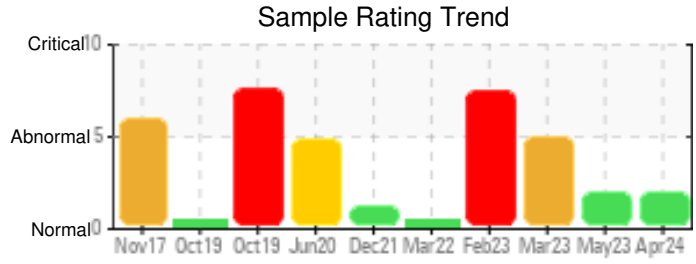
Sample Information
 Lab No: 02630813
 Analyst: Yvette Trzcinski
 Sample Date: 04/15/24
 Received Date: 04/22/24
 Completed: 04/25/24
 Yvette Trzcinski
 yvette.trzcinski@HFSinclair.com

Recommendation: Acid number is slightly high for Petro-therm but has not increased since last year the solids are low and the flash point and distillation points of 10%, 50% are within specification and the boiling point at 90% is slightly high. fluid is acceptable for continued service resample in 6-9 months

Comments: Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.

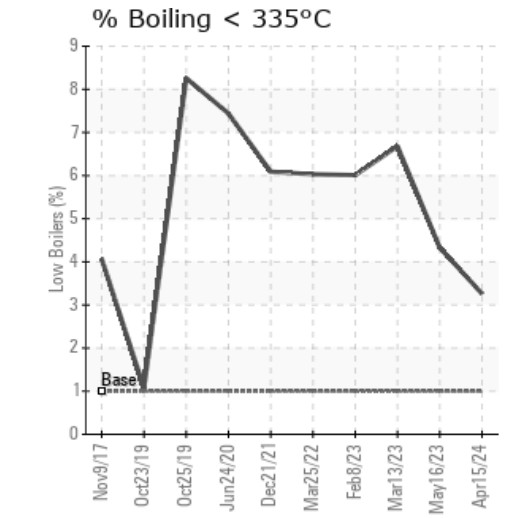
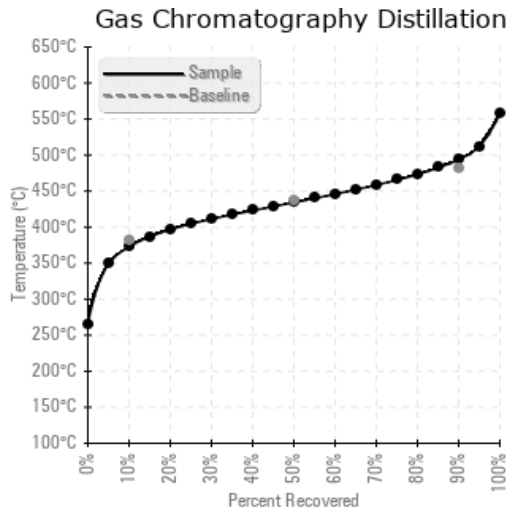
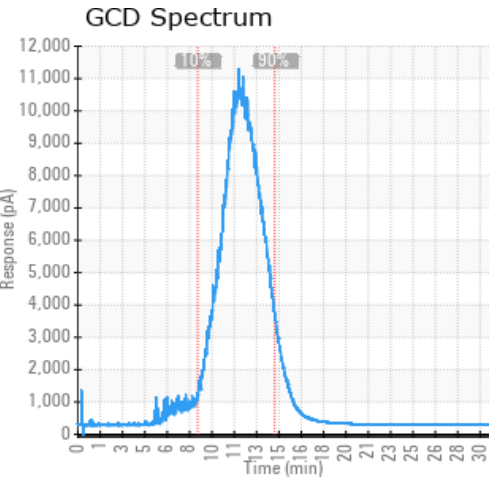
Sample Date	Received Date	Fluid Age	Sample Location	Flash Point (COC)	Water (KF)	Viscosity (40°C)	Acid Number	Solids	GCD 10%	GCD 50%	GCD 90%	GCD % < 335°C
	mm/dd/yy			°F/°C	ppm	cSt	mg/KOH/g	%wt	°F/°C	°F/°C	°F/°C	%
04/15/24	04/22/24	0.0y		439 / 226	15	31.3	0.32	0.089	703 / 373	814 / 434	920 / 494	3.26
05/16/23	05/25/23	0.0y		417 / 214	117.8	31.2	0.39	0.272	694 / 368	811 / 433	919 / 493	4.33
03/13/23	03/27/23	2.0y		410 / 210	22.9	28.2	0.19	0.440	672 / 356	805 / 429	916 / 491	6.68
02/08/23	02/28/23	2.0y		385 / 196	460.6	28.2	0.69	0.656	678 / 359	805 / 430	915 / 491	6.01
03/25/22	04/01/22	2.0y	SANDENO EAST	388 / 198	45.8	28.3	0.59	0.166	676 / 358	805 / 430	917 / 492	6.03
Baseline Data				433 / 223		34.2	0.03		720 / 382	817 / 436	900 / 482	1.00





Sample Date	Iron	Chromium	Nickel	Aluminum	Copper	Lead	Tin	Cadmium	Silver	Vanadium	Silicon	Sodium	Potassium	Titanium	Molybdenum	Antimony	Manganese	Lithium	Boron	Magnesium	Calcium	Barium	Phosphorus	Zinc
04/15/24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05/16/23	41	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	3	0	4	8
03/13/23	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
02/08/23	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
03/25/22	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4
Baseline Data			0	0						0			0	0					0				0	

Elemental analysis results (above) in parts per million (ppm). [10,000 ppm = 1.0%]



Historical Comments	
05/16/23	sample was taken at the same location as the sample from 3.13.2023 and the system has been topped up with close to 230 gallons of new Petro-Therm. The viscosity is in spec the acid number has increased from the last sample but the solids which we were concerned about has lowered from 0.440 to 0.272 that is a good sign. Resample the system at the end of the season before shutting the system down Acid Number (AN) is abnormally high. (GCD) 90% Distillation Point is marginally high.
03/13/23	Re-sample is showing much lower acid number and a lower solids than the sample from February but the solids are at a cautionary level which can lead to solids plating out in the system in low flow areas or could which could lead to performance and control issues in the system. The flash point, boiling temperatures and acid number are within specification resample in 9 -12 months Pentane Insolubles levels are abnormally high. Visc @ 40°C is abnormally low.
02/08/23	Pentane Solids are very high as is the acid number I recommend resampling to ensure this is a representative sample of the oil in the system before making any recommendations. Pentane Insolubles levels are severely high. Acid Number (AN) is abnormally high. Visc @ 40°C is abnormally low.
03/25/22	The fluid viscosity, boiling points and insolubles are all within specification. There is a slight decrease in the flash point due to some low boilers (GCD % < 335 C) which are low viscosity components due to degradation in the system. Venting of the low boilers is an option if they continue to increase. Fluid is acceptable for continued usage resample in 6-12 months.

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