



Certificate of Analysis  
 Number: 2500-23090066-001A

Greeley Laboratory  
 2881 S. 31st Ave  
 Unit 6-8  
 Greeley, CO 80631

Jeff Braden  
 Ensolum  
 11049 W 44th Ave, Ste 100  
 Wheat Ridge, CO 80033

Sep. 28, 2023

Station Name: Ikenouye F 29-23  
 Sample Conditions:

Sampled By: Jeff Braden  
 Sample Of: Liquid Spot  
 Sample Date: 09/06/2023 10:30

**Analytical Data**

Test	Method	Result	Units	Detection Limit	Lab Tech.	Analysis Date
Total Sediment and Water	ASTM D-4007	0.00	vol%		SO	09/12/2023
Sulfur Content by X-ray	ASTM D-4294	0.014	wt%		SO	09/12/2023
Viscosity - Kinematic @ 100°F	ASTM D-445	0.6940	cSt		MRL	09/20/2023
Viscosity - Kinematic @ 100°F	ASTM D-445	28.01	SUS		MRL	09/20/2023
API Gravity @ 60° F	ASTM D-5002	58.71	°		SO	09/12/2023
Specific Gravity @ 60/60° F	ASTM D-5002	0.7439	—		SO	09/12/2023
Density @ 60° F	ASTM D-5002	0.7395	g/ml		SO	09/12/2023
VP of Crude Oil: V/L = 4:1 @ 100 °F	ASTM D-6377	6.41	psi		SO	09/12/2023
RVPE (D323 Equivalent) @ 100 °F	ASTM D-6377	5.35	psi		SO	09/12/2023
Initial Boiling Point	ASTM D-86-IBP	145	°F		MRL	09/20/2023
Pour Point	ASTM D-97	-70	°C		SO	09/15/2023

**Comments:**

AS-D-4007: TRACE AMOUNT OF SEDIMENT FOUND  
 AS-D-97: EXCEEDS MAX TEMP RANGE OF -70C FOR TESTING METHOD  
 RESULT WILL BE GREATER THAN -70C (COLDER)

Data reviewed by: Ryleigh Jacobs, Laboratory Analyst  
 Methods: ASTM D-4007, ASTM D-4294, ASTM D-5002, ASTM D-6377, ASTM D-97

Data reviewed by: Matthew Loveley, Laboratory Manager  
 Methods: ASTM D-445, ASTM D-86-IBP

Quality Assurance: The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.



Certificate of Analysis  
Number: 1030-23090329-001A

Houston Laboratories  
8820 Interchange Drive  
Houston, TX 77054  
Phone 713-660-0901

Jenifer Hakkarinen  
PDC Energy  
1775 Sherman Street  
Suite 3000  
Denver, CO 80203

Sep. 27, 2023

Station Name: Ikenouye F29-23  
Sample Conditions:

Sampled By: JB  
Sample Of: Liquid Spot  
Sample Date: 09/06/2023 10:30

Analytical Data

Test	Method	Result	Units	Detection Limit	Lab Tech.	Analysis Date
Viscosity - Kinematic @ 104°F	ASTM D-445	0.6940	cSt		ES	09/20/2023
Viscosity - Kinematic @ 104°F	ASTM D-445	28.02	SUS		ES	09/20/2023
Initial Boiling Point	ASTM D-86-IBP	145	°F		ES	09/20/2023

Comments:

AS-D-86-IBP: Visual color is Light Straw.

Data reviewed by: Michael Staley, ASTM Manager

Quality Assurance:

The above analyses are performed in accordance with ASTM, UOP, GPA guidelines for quality assurance, unless otherwise stated.

