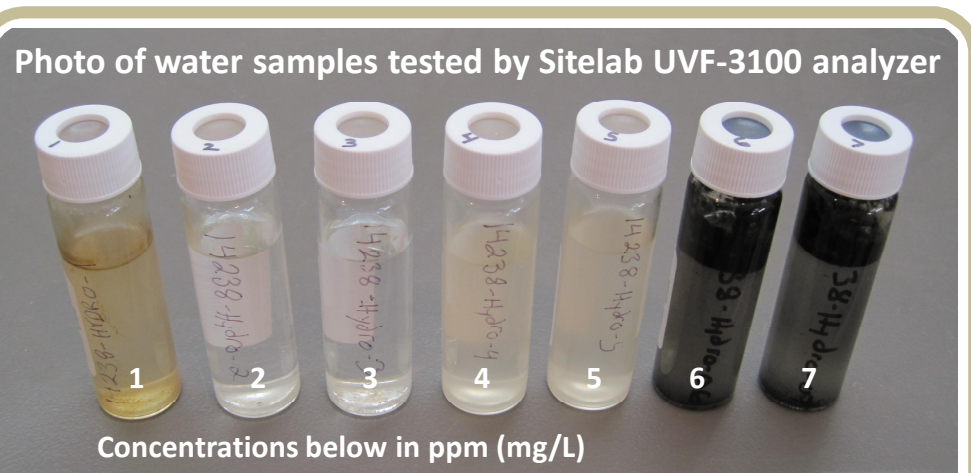




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# Crude Oil in Water

**Produced Water Treatment Site:** A pilot study was performed to test water samples contaminated with produced water from several oil well production sites in Wyoming for a company that provides mobile water treatment systems that enable oil and gas companies to recycle and reuse flow back water more efficiently. The samples were tested for their gasoline range and extended diesel/oil range concentrations. Ratios exhibited in the results provides helpful information about the type of oil being treated at each site.



Concentrations below in ppm (mg/L)

Oil ID #	TEST 1: EDRO C10-C36 Range Hydrocarbons	TEST 2: GRO C6-C10 Range Hydrocarbons	TPH Ratios Exhibited: Test 1÷Test 2
1	1,646	70	24X
2	110	15	7X
3	48	6	8X
4	74	20	4X
5	88	19	5X
6	38,750	4,000	10X
7	18,400	2,000	9X

Higher ratios:  
Oil has lower proportions of GRO = **Heavier Crude**

Lower ratios:  
Oil has higher proportions of GRO = **Lighter Crude**

### Quick Reference Guide for Sitelab UVF-3100 Testing Oil in Water/Soil with HEXANE

Sample Preparation & Analysis...

- 1. Test Water?** Shake sample and pour out 10 mL of water into test bottle. Add to extraction jar.
- 2. Add Solvent** Add Hexane to solvent dispenser bottle. Using a test tube, dispense solvent to the 10 mL line. Empty/pour solvent into extraction jar containing the sample. This creates a 20 mL "2" mixture. Flip the jar and shake sample extraction jar by hand for several minutes.
- 3. Filter Extract** Let extract jars settle for a few minutes before removing lid. Suck up 3 (or 4 mL of extract from the jar's surface using a syringe. Attach a clean filter to the syringe and dispense contents into test tube. Label extraction tube with sample ID and UV-3100-XXXX-YYYYYY.
- 4. Dilute Extract** Adjust the setting on pipette, attach a tip and use a 200 test tube to prepare a dilution for analysis in order for the sample to be detected within calibration range. Examples:
 

Range	Add Solvent	Dilution
1000-2000	1000 µL	1:200
100-1000	100 µL	1:100
10-100	10 µL	1:10
- 5. Add to Cuvette** Pour the dilution made in Step 4 into the glass cuvette. Cuvette needs to be about 3/4 full. Use tissue wipers to clean outside glass to remove fingerprints and liquids. Hexane will allow the cuvette into the black cuvette holder. Be sure not to spill sample. Wait for 30-60 seconds for concentration to stabilize. Display the reading by the digital cuvette holder. Avoid readings below detection limit.
- 6. Test Sample** Lower into analyzer and close the lid. Be sure the cuvette holder's arrow-shaped handle points to the solvent (to the left of chamber). Wait a few seconds for concentration to stabilize. Display the reading by the digital cuvette holder. Avoid readings below detection limit.

Products Used... Calibrate Instrument... Quality Controls...

- Test procedures and equipment are easy to use.
- Solvent is used to extract water samples using test kits available.
- Results take less than 5 minutes.

GRO ● VPH Extended Diesel Range & Oil Range

C6 C10 C36

Total Petroleum Hydrocarbons

Sitelab calibration kits are available in hexane solvent and are used for accurate oil in water analysis. The UVF analyzer contains optical filters sensitive to the same ranges of hydrocarbons reported by the certified laboratories using gas chromatography. Sitelab's GRO and EDRO results correlate well to EPA Method 8015 and other TPH-GC methods.