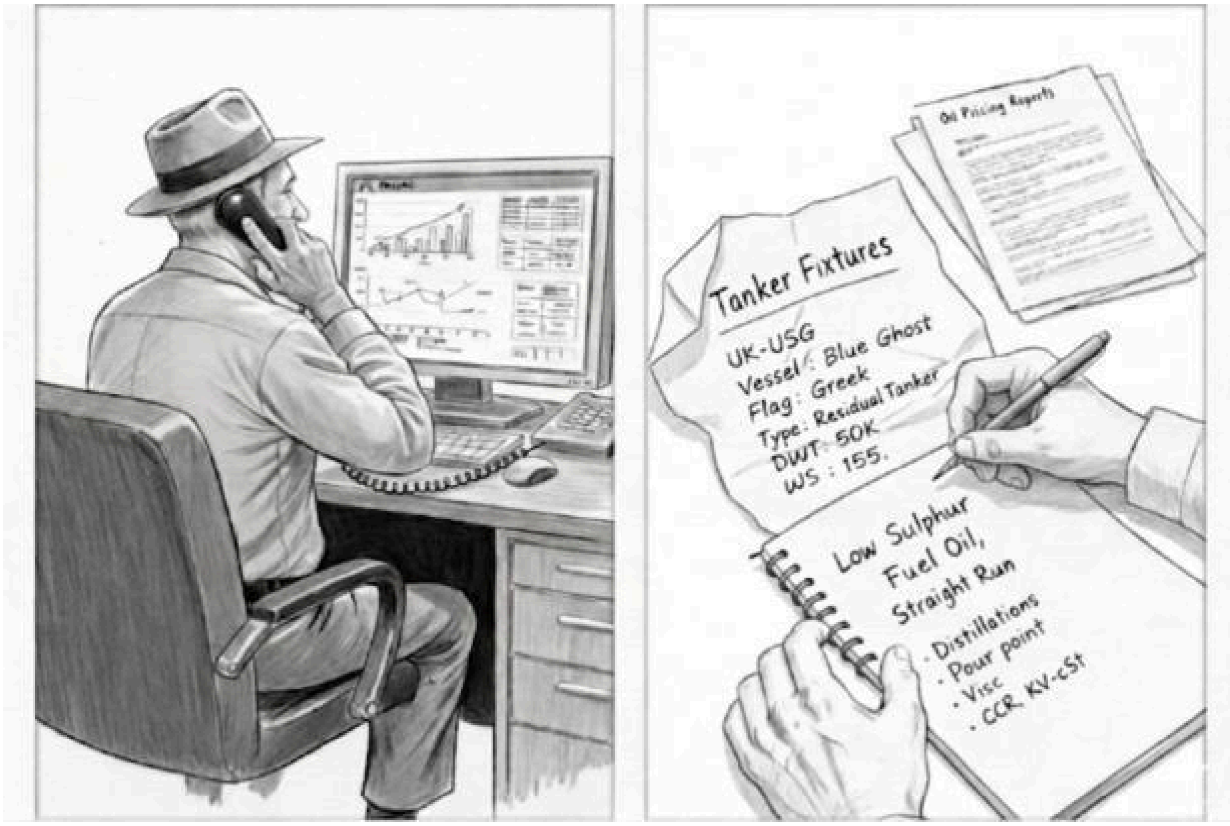
Oil Pricing Reports
Tanker Fixtures
UK-USG
Vessel: Blue Ghost
Flag: Greek
Type: Residual Tanker
DWT: 50K
WS : 155.
Low Sulphur
Fuel Oil,
Straight Run
· Distillations
· Pour point
· Visc
· CCR, KV-cSt

You're finding out what people want and don't want. If their cat crackers aren't engineered right to accept and fed this material into cat crackers, then they won't want to touch it with a ten-foot pole. Atmospheric tower bottoms have limited avenues of marketing. I'm not surprised that you've found a lot of negative reactions from the people you might be talking to.

-The Mentor on LSAR marketing here in the U.S.

We started to become proficient in obtaining low sulphur resid offers from various suppliers in NWE and the Med. During a period stretch of three months, we built up relations with eight major oil companies outside the U.S. for material supply. These were outside the relationships that we already had. We procured offers for other products as well: vacuum gasoils, cracked fuel oils of various sulphur contents, gas cargoes, slurry oils (inside U.S.), even environmental diesel for California when the CARB fiasco unfolded.

We had no success with any of the above products. Price, quality, or lack of demand always seemed to vitiate a potential deal. Of all the products that we received offers for; the low sulphur atmospheric residue was our product of choice. I look back at this now and wonder why we favored the material so much. It wasn't very desirable here in the U.S., the price was either too high or there was a particular property or multiple properties that didn't meet a refiner's need. We figured that since we were recently lucky with W Petroleum's material that we would have further equivalent luck. This, unfortunately, was not the case.

As far as demand went, our problem was that most of the refiners that we talked with in the Gulf and Atlantic Coasts had their own atmospheric residue to get rid of. Most of the refiners started off their refineries with a crude unit that made atmospheric residue, and unless they had excess vacuum tower capacity and were also capable of feeding it directly to one of their catalytic cracker operations, then they didn't have any need for it.

Outside of the problems of price and lack of demand, the other reason that the European low sulphur resid wasn't desired was due to individual refinery requirements regarding the quality of the resid. One East Coast refiner found a 4 ppm, wt.% sodium content too high on a NWE cargo we were offering. Another refiner in the Gulf Coast found one resid cargo that we had very desirable until he learned that the 6 ppm, wt.% was that of the vanadium content. Still another East Coast refiner had an interest in another NWE cargo that we had of low sulphur resid, until he learned that the CCR content was 6 wt.%. He said that his refinery needed the CCR to be around 1 wt.%; another due to distillation results, another due to viscosity, another, pour point.

I understood the lack of interest in a material by a refiner due to its metals being a catalyst poison. Truthfully, I didn’t understand the CCR (Conradson carbon residue) or the distillations or viscosity very well. Traders would always ask us a particular property or properties and we would read it off the offer to them. They would either go on down the list of properties with us or stop where a property was undesirable.

In one of my question and answer sessions with the Mentor, I discussed with him the problems of marketing the European low sulphur resid as well as some basic petroleum information on CCR, distillation and viscosity.

“When I was marketing this low sulphur resid, a refiner was concerned with the Conradson carbon residue,” I said. “What’s the problem with the Conradson carbon residue?”

“The Conradson carbon residue reflects the amount of free carbon on the oil, and while carbon burns, it also has abrasiveness in the oil, and it carries with it the possibility of being a precursor to a more detailed analysis of the metals that they do. This is because inside of those nodules of carbon can be most anything: sulphur, metals, whatever," he said.

“But as far as its presence in straight run resid,” I said, “what’s the problem?”

“It’s more important for straight run, from the standpoint of its effect in catalytic crackers, because all it does is consume oxygen to burn and make heat and you get no yield out of it, besides getting some potential catalyst damaging material," he said.

“I see, it can end up contributing to catalyst problems,” I said.

“The Conradson carbon residue is a measure of the carbon residue that is left after you boil the oil,” he said. “The carbon is already there.”

“In respect to distillation results on the resid offers that I have which contain the percentage of volume at 10%, 20%, 30%, etc., along with the atmospheric temperatures next to the percentages, is this how much of the material is burned off at each level of temperature?” I asked.

“That’s how much is boiled,” he said, “not burned.”

“How much is boiled off?” I asked.

“Yeah,” he said. “For example, the initial boiling point, 50% point, and endpoint of water is 212F. It immediately goes to steam at 212F. It soaks up a lot of heat. Gasoline on the other hand, starts boiling at like, maybe 100F, 120F, and doesn’t complete boiling until 425F. That’s boiling now, that’s not burning. The point at which material flashes is determined by testing its flash point. It would be where it starts burning. Those distillations are carried out in an oxygen free atmosphere, otherwise it would blow up.”

“One refinery trader was interested in the recovery on the distillations,” I said. “What is recovery?”

“They’re talking about the percent recovery and percent loss after you’ve boiled everything off. Almost all distillations include at the bottom a percent loss, so as to total up to 100%. It gives a feel for how much of the material was actually recovered. When you get to the endpoint, you think it’s 100% recovered, but it’s not because some has been lost and some is still a residue like a solid in the bottom of the distillation beaker. The amount boiled measures the reduction of the volume in the beaker that you’re boiling the material out of. The recovery measures the amount of material that has been recovered after the gaseous material has been recondensed to a liquid. There is a slight difference; 60% boiled is generally like 59.9% recovered," he said.

“Well, I have one offer where they go all the way down the spectrum: IBP, 5%, 10%, 20%, 30%, 40%, 50%, 57.9%, 60%, and the 57.9% is the last distillation in the grouping, with the 60% isolated away,” I said.

Distillation – typical

	DEG C
IBP	300
5%	382
10%	412
20%	443
30%	471
40%	491
50%	525
57.9%	541
60%	540

“Well,” he said, “that’s where the material started cracking (57.9%). If they took another distillation (60%), you’ll see that the temperature is lower (540 C) When the material starts cracking, it soaks up heat and it causes the temperature to suddenly drop. That’s how they can tell it’s cracked.”

“Another subject that I’ve been wondering about is the subject of viscosity,” I said. “I noticed that all the offers I have present the kinematic viscosity as part of the typical or guaranteed properties. Can you explain kinematic viscosity?”

“Kinematic viscosity is measured in centistokes and it is more or less a natural viscosity the comes from measuring the poise of the material. The real true measure of viscosity is measured in poise, which is a term that covers a whole bunch of feet & feet per second to adequately describe a viscosity. Viscosity is a measure of the flow-ability or the resistance to flow of a material. The lower the viscosity, the more freely it flows and the better it can be pumped," he said.

“It sounds like it kind of plays into the pour point,” I said.

“Pour point is basically that point at which the viscosity of the material goes to infinity more or less,” he said.