

PAC Crude Oil Project

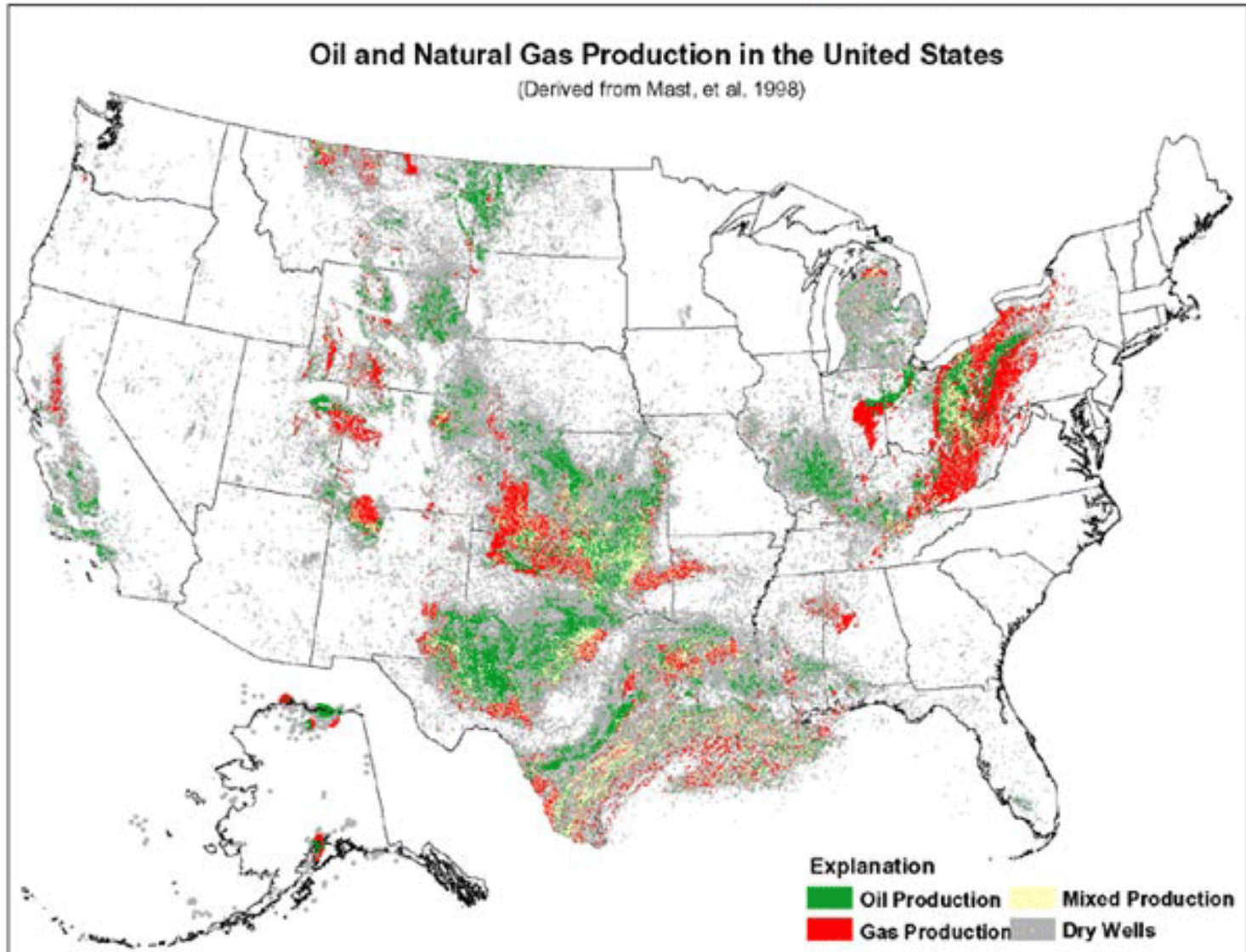
Taking Accurate Boiling Point Determination in Whole Crudes to the next level

Update and observations



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GCC Oct. 2013
Galveston TX

Crude By Location



Overview



No. Customers	6
No: Samples	21
No Sample types:	6

Results:	Simdis Merge
Analysis protocol:	Based on D7169 / using DHA Front End

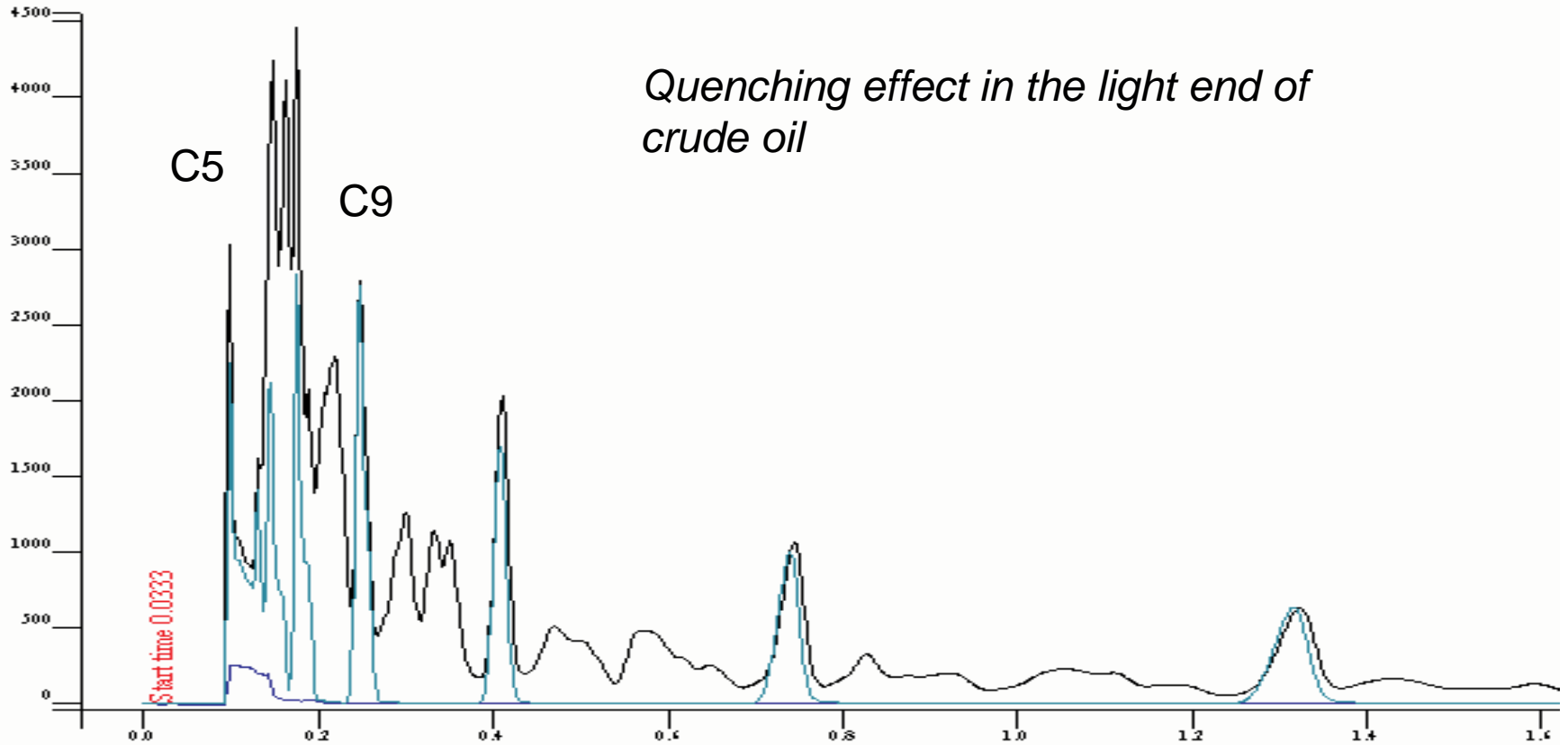
Sample Types By Location



- Eagle Ford Shale
- Bakken
- Oriente
- Alaskan North Shore
- Canadian
- Mix (off the spot market)



Problems - Quenching



Hardware



- PAC HI-TEMP SIMDIS Agilent 7890A
- PAC D6729 combi DHA



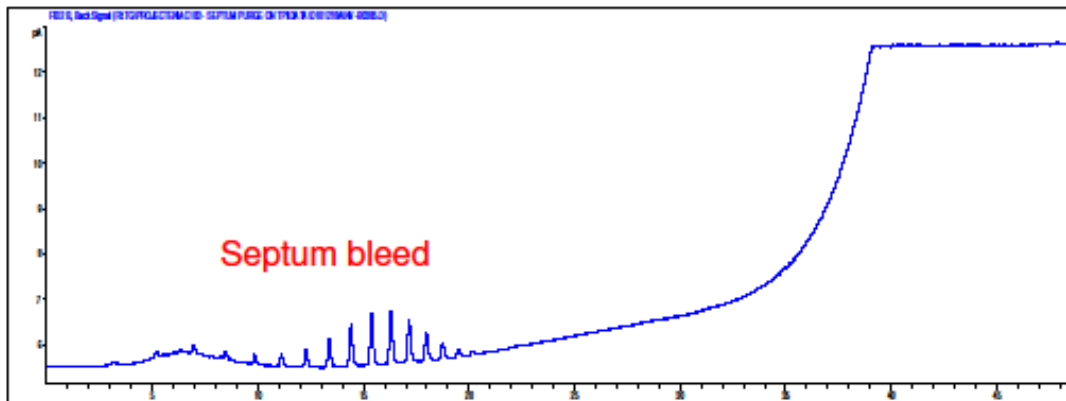
Hardware Advances

- TPI now equipped with septum purge
- Improved Precision with our “Light Solvent Optimized” Liquid Sampler.

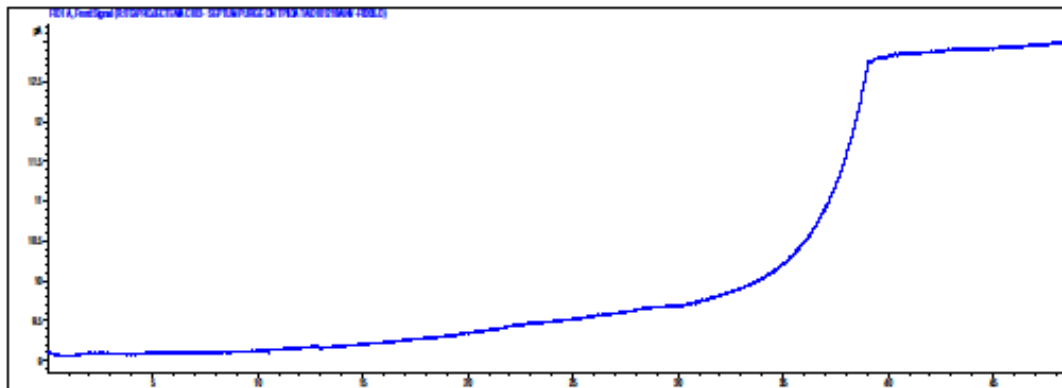
Hardware Advances



SEPTUM PURGE ON TPI Comparison HT SIMDIS



Blank run
*Without septum
purge*



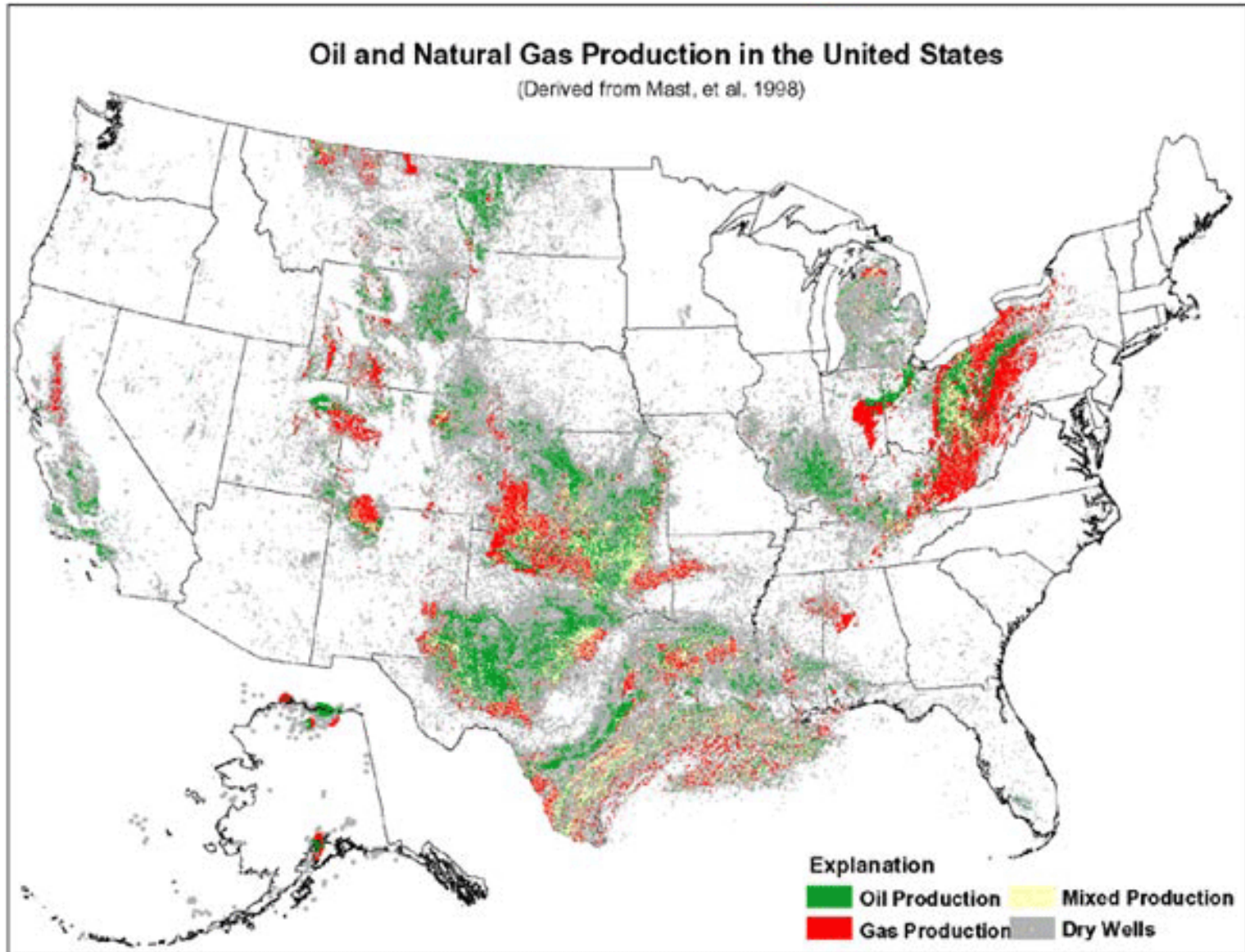
Blank run
*With septum
purge*

Hardware Advances



- **Superior Precision and Recovery data for ASTM D7169 SIMDIS**
- **Improves Injection Performance for Low Boiling Solvents**

Customer Reaction



Help Our CUSTOMERS Gain:

1. A Better understanding of the method
2. A Better understanding of the instrumentation
3. A Better understanding of the results

Project Observations



- All the samples except one, 20 out of 21 had lower initial boiling point after the merge.
- All the samples except one, 20 out of 21 had some recovery.
- Less than half of the samples had to be diluted for the DHA analysis, but all the samples that came off the spot market required dilution.
- Inconclusive

Raw Data



SAMPLE	IPB SIMDIS	IPB after Merge	Found Recovery	diluted
Eagle Ford Shale #1	36	11.7	94.60%	No
Eagle Ford Shale #2	36	11.5	98.7	No
Eagle Ford Shale #3	36	-0.5	98%	No
Eagle Ford Shale #4	36	-5	99%	No
Eagle Ford Shale #5	36	-0.5	97.10%	No
Eagle Ford Shale #6	36	-42	96.40%	No
Oriente	36	27.8	83.40%	Yes
Bakken	36	-11.7	94.90%	No
Alaskan North Shore	36	-0.5	90.30%	No
Spot Market #1	36	-25	87.10%	Yes
Spot Market #2	36	36	87%	Yes
Spot Market #3	36	27.8	90.60%	Yes
Spot Market #4	36	-5	88.50%	Yes
Spot Market #5	36	-42	87%	Yes
Candian Crude A	71	71.8	94.8	Yes
Candian Crude B	36	-11.7	94.10%	Yes
Candian Crude C	36	27.8	82.60%	Yes
West Coast #101	36	-5	94.50%	No
West Coast #102	36	-5	97%	No
West Coast #103	36	-25.4	92.80%	No
West Coast #104	36	27.8	90.60%	No

QUESTIONS ?



solidpartners
provensolutions