House Resources Committee

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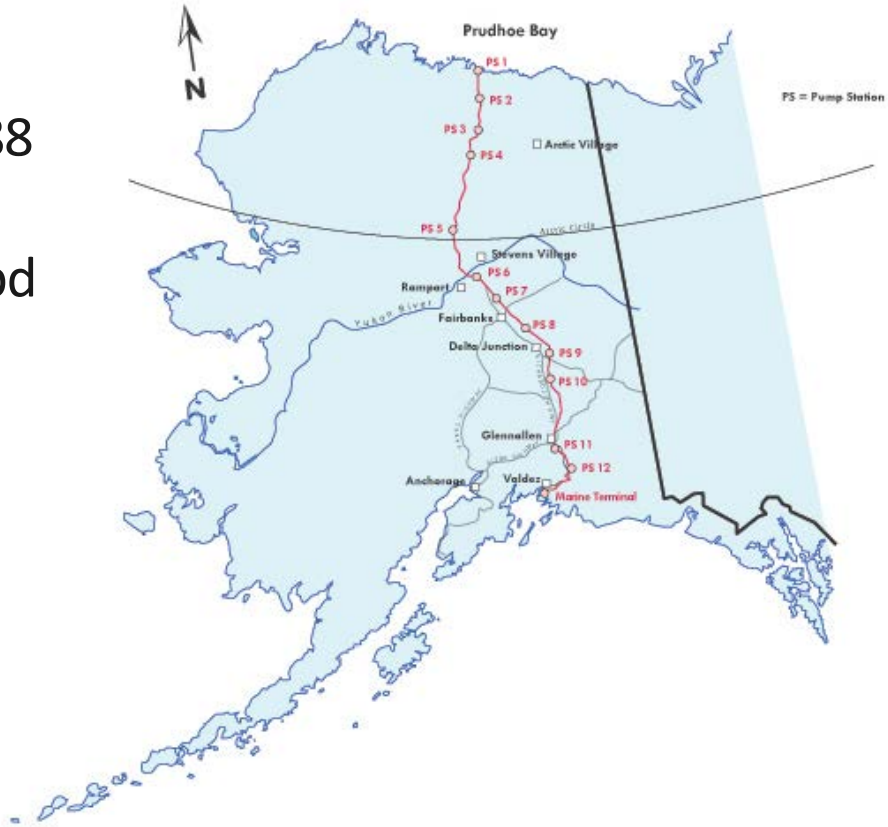
TAPS Facts

- Alyeska Pipeline Service Company was formed in 1970 to design, construct, operate and maintain the Trans Alaska Pipeline System (TAPS). TAPS began operations in 1977.

- Peak throughput: 2.1 million bpd, 1988
- More than 18 billion barrels moved
- 2019 throughput average: 490,366 bpd
- 99.75 reliability in 2019

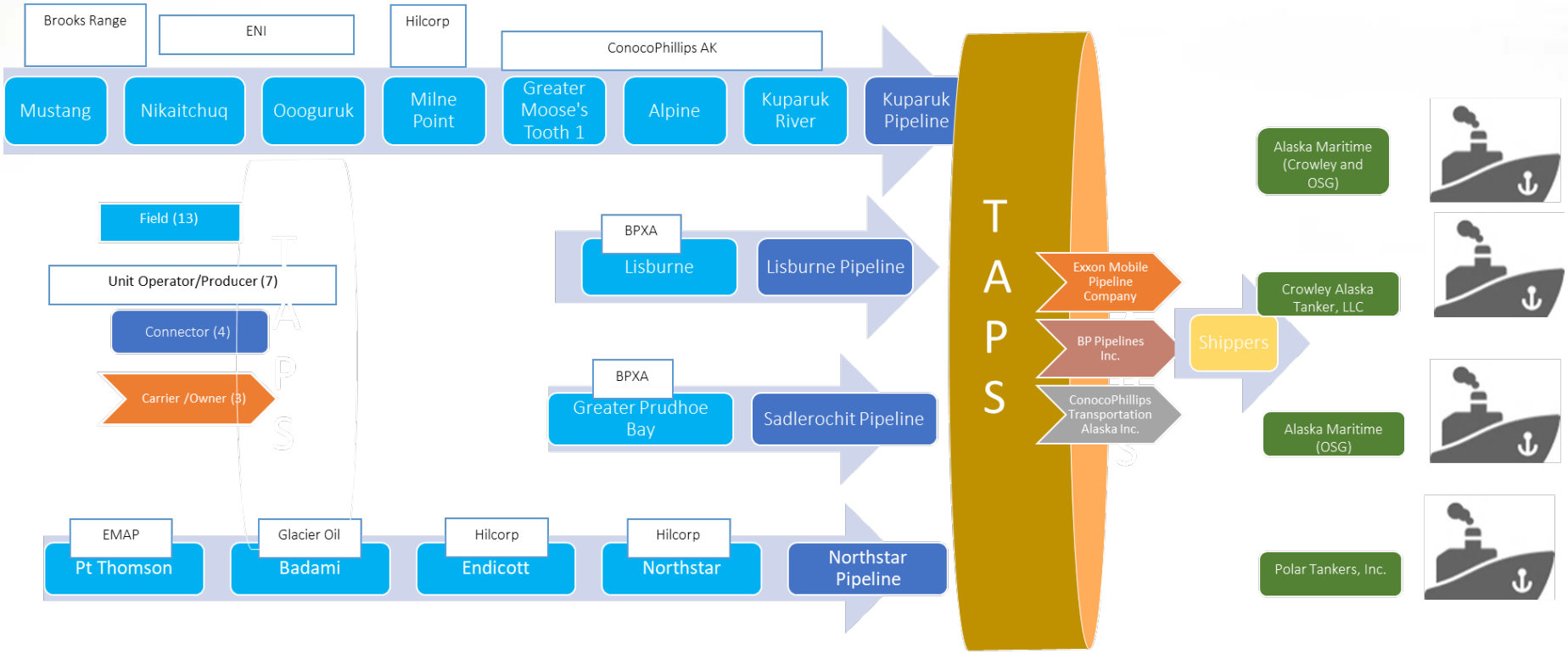


Valdez Marine Terminal Tank Farm

Fourteen tanks in service.

6.6 million barrel working inventory capacity.

Upstream and Downstream Stakeholders



What is the impact of low throughput?

Low throughput results in slower oil flow through the pipeline.

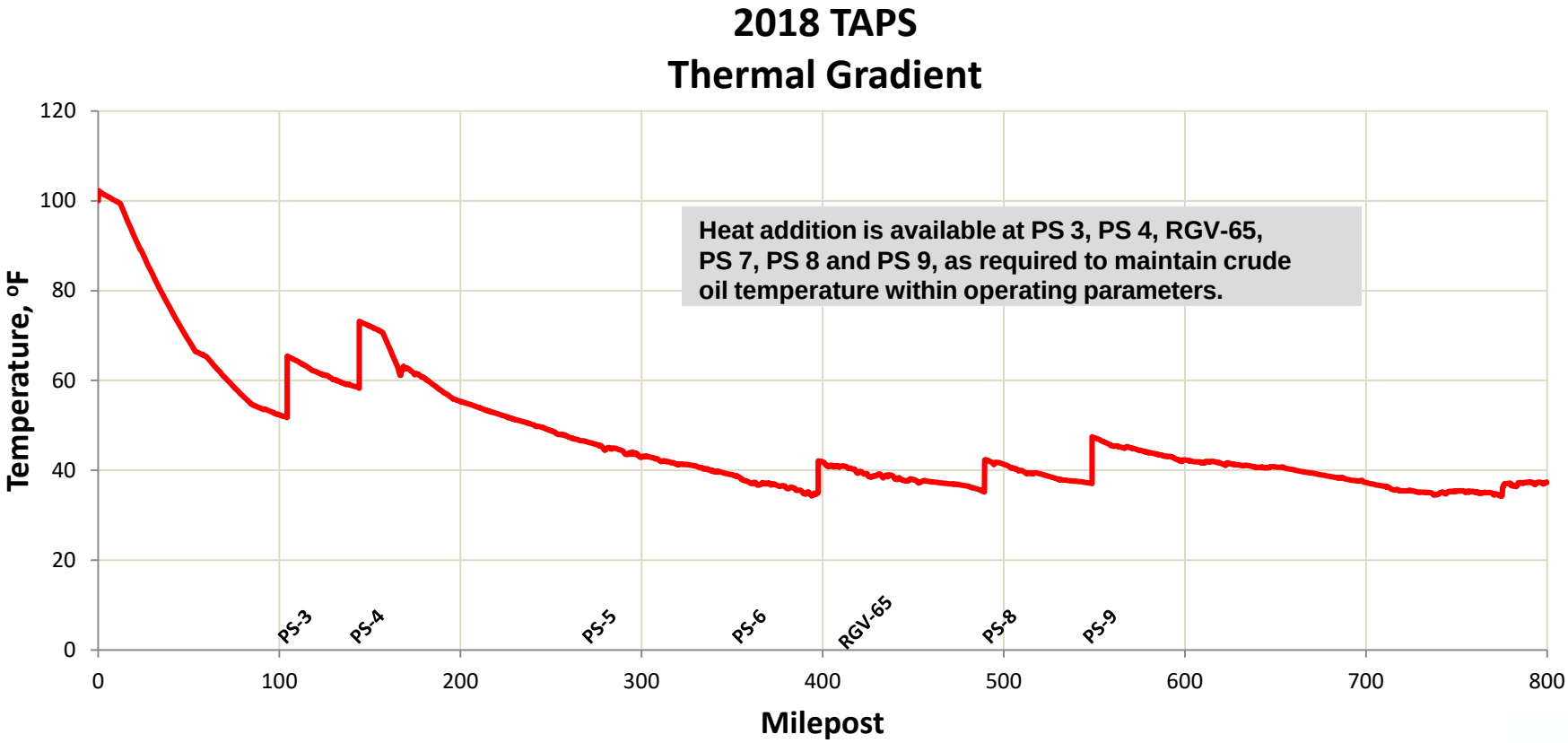
- TAPS was designed to move warm crude oil in an Arctic environment.
- As throughput declines, so does the rate at which crude oil flows through TAPS to Valdez.
  - 4.5 day transit time in 1988
  - 18 day transit time in 2018
- Slower flow rates may allow oil and water to separate during transit.
- Oil cools during longer transit times.
- Cooling may lead to potential ice formation and additional wax accumulation.

Mitigation Strategies

- Minimize the risk of ice formation.
  - Add heat at key locations.
  - Plan for contingency use of freeze depressants.
- Reduce the risk of internal corrosion.
  - Consider extending the use of corrosion inhibitors to the mainline.
  - Continue pigging regime and adjust as needed.
- Manage wax deposition.
  - Improve pig design to reduce risk of plugging.
  - Install additional wax management facilities.
  - Monitor wax and crude oil solids.
- Deploy new technologies to collect predictive data.

Temperature Monitoring

Crude oil temperature is monitored to determine the need for mitigations, such as additional heat.



Additional Heat

- Cold crude oil temperatures on TAPS require added heat to keep the oil above minimum operating temperatures.
- Crude oil can be recirculated at Pump Stations 3, 4, 7 and 9 to add frictional heat.
- Supplemental skid mounted, mobile heaters are available at two locations.
- Work is on-going to optimize the heat addition locations in order to improve long-term efficiency and reduce operational cost and risk.

Slip Stream Heat Operation

How Low Can TAPS Operate?

- Earlier flow assurance research examined TAPS operational issues at flow rates above 300 MBD.
  - Research continues regarding operational issues at rates lower than 300 MBD.
  - Data analysis to date suggests that with additional investment it may be technically possible to safely operate down to annualized throughput rates as low as 200 MBD.
- A dedicated flow assurance team is evaluating new technologies and alternative operating modes to build confidence that TAPS can operate at lower volumes.
- Technical capability does not necessarily equate to economic viability; the long-term sustainability of TAPS may ultimately be limited by per barrel transportation costs.

Questions?