

## CASE STUDY

Above Ground Storage Tank  
 Providing buoyancy compensation  
 internal floating roof sealing project



### Customer needs

- Enhanced emissions abatement efficiency to comply with the latest environmental regulations.
- NFPA 11-compliant firefighting system.

### Challenges

- Maintaining and compensating the buoyancy for which the roof was originally designed.

### Applications

- Renewal of Primary vapor barrier made of PTFE Teflon.
- Qualitech secondary wiper seal.
- BlueSky® sealing system (including Guide Pole Sleeve & roof support leg cover).
- Integrated Rim-Mounted Foam Dam.

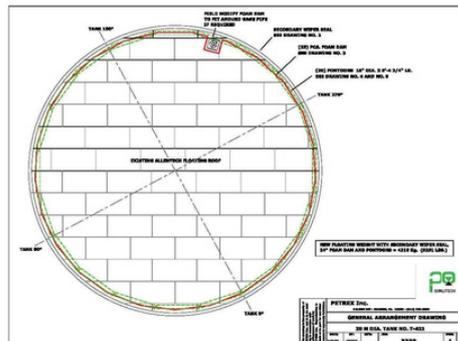
### OVERVIEW

In this case study, a 20m (65.6ft.) diameter storage tank was shut down to replace and upgrade the roof sealing system and its accessories.

### COMPILING DATA

In 2003, this tank was installed with an aluminum full contact internal floating roof.

According to calculations, the new foam dam and the sealing system will add 1069 kg to the roof's self-weight, which stands at 3135 kg.



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### RESULTS



- Fit for purpose in accordance with API 653 standards.
- The seal gap measurement base line inspection for primary and secondary seal exceeded the criteria set by the EPA.
- Rapid firefighting with fast foam accumulation. Compliance to NFPA 11 requirements.

In order to Maintain and compensate the buoyancy for which the roof was originally designed. Our engineers had to perform calculations taking into account a number of factors, including the tank area, roof thickness and lifting capacities of each pontoon, all in accordance with the API 650.H standard, which requires double safety margin for the additional weight.



### SOLUTION

System of buoyant pontoons:

20 cylindrical floating aluminum cells (pontoon) added to the perimeter of the floating roof. For optimum strength and rigidity, each pontoon is held in place by an extruded structural aluminum framing. Each pontoon has a lifting capacity of 91.5 kg, so total system lifting capacity amounts to 1830 kg. In accordance with API stand. The roof is ready to support the added weight.



Qualitech BlueSky® seal system provides near-zero emissions that meet strict emission standards.