

City of Tulare TCP Mitigation Project Group 2 Update



Date: April 4, 2019

Presented by: Brandon Stipe, PE

Regulatory History of TCP

- TCP MCL of 0.005 ug/L (5 ppt) enacted January 1, 2018
- Required sampling in the first quarter
- A result above the MCL required monthly sampling
- Compliance is based on a Six Month Running Average
- Any sample that would move the six month average above the MCL is assessed as an immediate violation

Regulatory History of TCP for Tulare

- Well 37 was the first well found in violation.
- Division of Drinking Water (DDW) Issued Compliance Order No. 03-24-18R-013 in May 2018 for Well 37 being out of compliance with the TCP MCL
- Includes a provision to add wells to the order if they are found to be in violation of the TCP MCL
- Starts a 3 year clock for the system to be in compliance

System Compliance Required by June 2021

Updates to the Original Compliance Order

- September 2018:
 - Well 37
 - Wells 8, 13, 17, 34, and 38
- November 2018:
 - Well 37 | Wells 8, 13, 17, 34, and 38
 - Wells 11 and 44
- March 2019:
 - Well 37 | Wells 8, 13, 17, 34, and 38 | Wells 11 and 44
 - Well 35

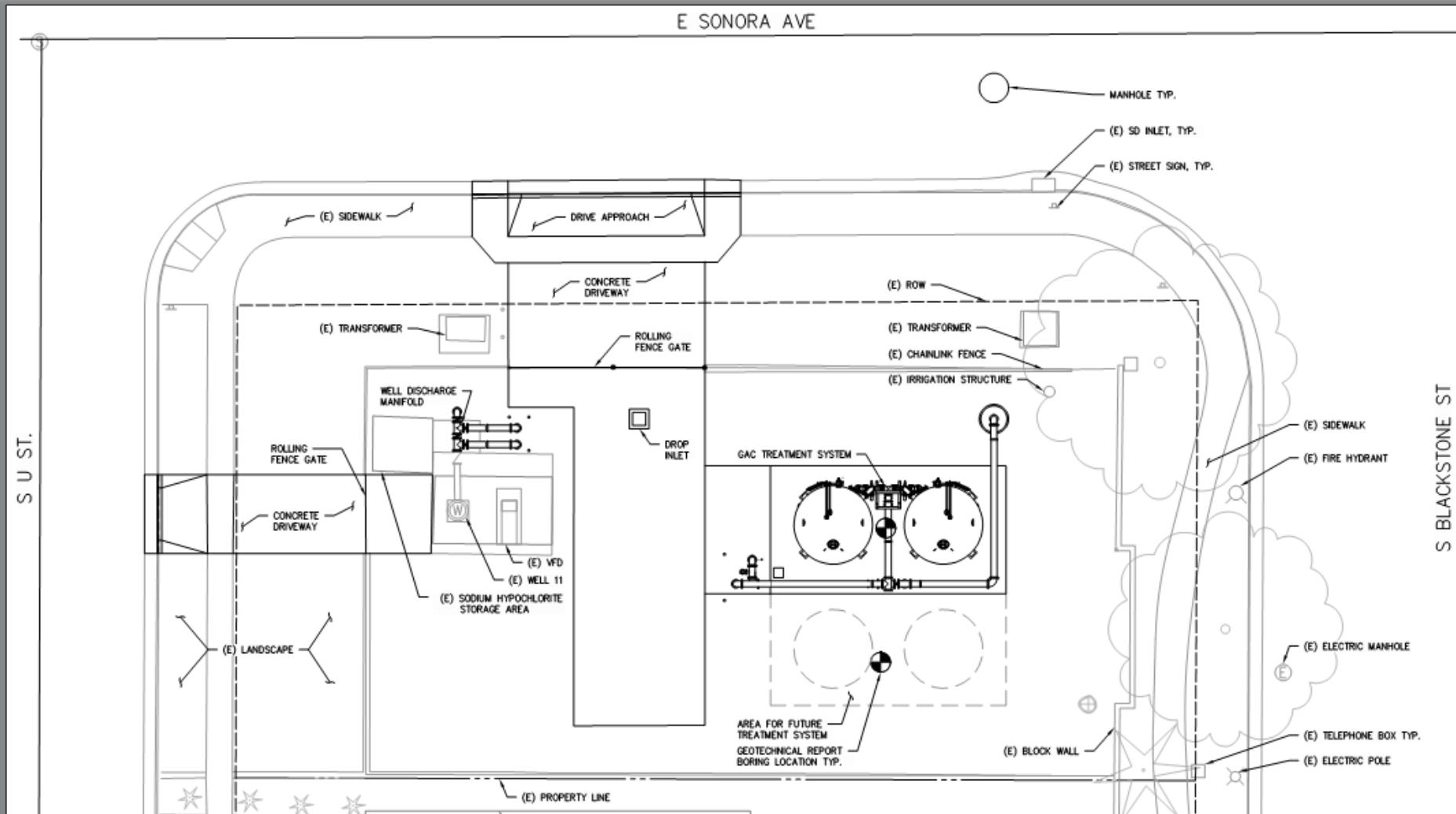
TCP Mitigation Project Status

- Group 1 – Well 17 and Well 37
 - Currently in Construction
 - Expected Completion is September 2019
- Group 2 – Well 11, Well 34, and Well 38
 - 75% Design Submittal and Review with City Staff Completed
 - Anticipated Bid in June 2019
 - Construction to be completed 9 months after award ~March 2020
- Group 3 – Well 35
 - Conceptual Design Completed

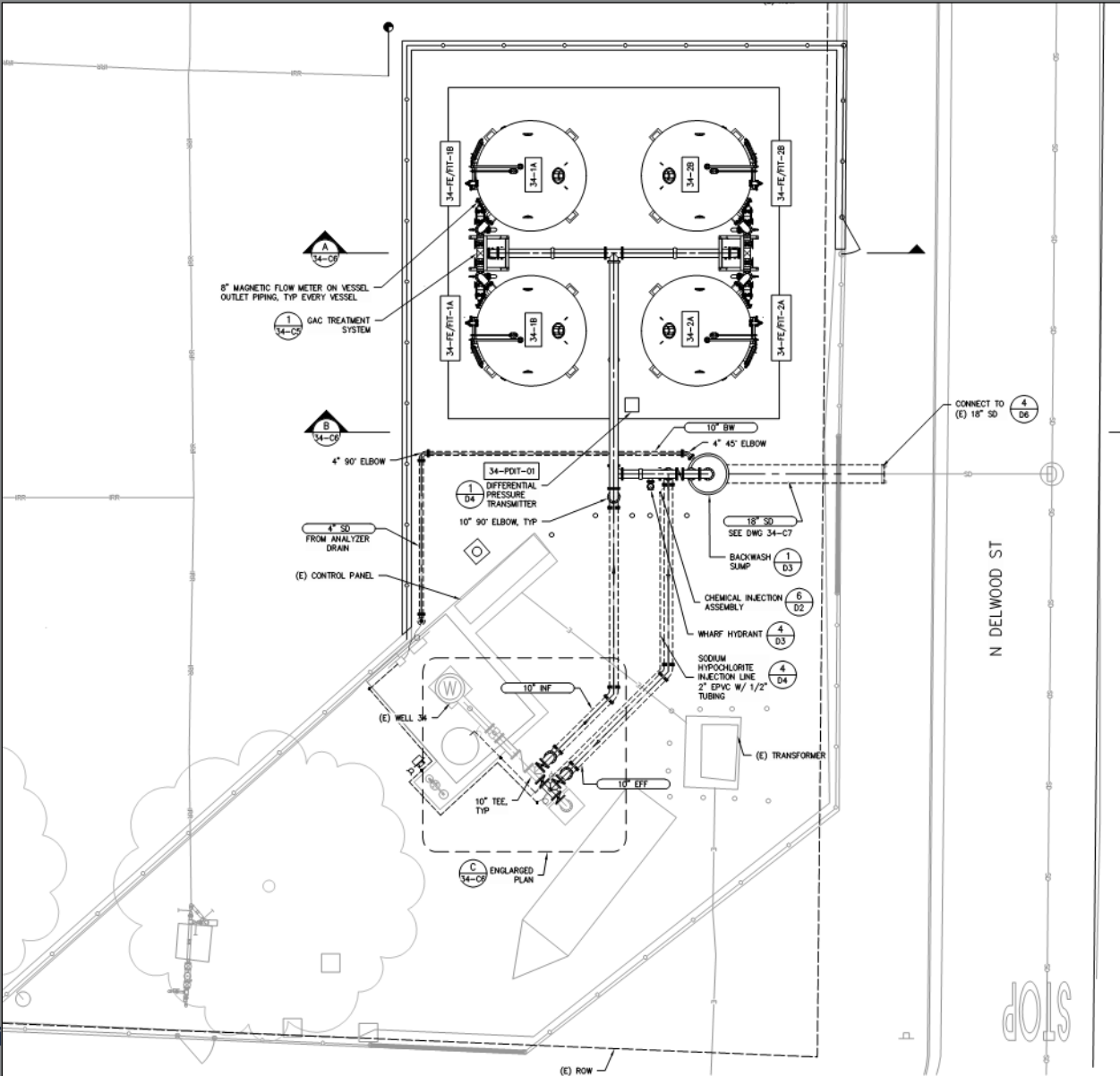
Group 2 GAC Design Criteria

Design Criteria			
Parameter	Well 11	Well 34	Well 38
Well Pump Capacity	778 gpm	1,089 gpm	1,340 gpm
Drive Type	VFD	Constant	Constant
No. of Vessels	2	4	4
Vessel Diameter, each	12 ft	12 ft	12 ft
Carbon Capacity, each	714 cu ft	714 cu ft	714 cu ft
Vessel Configuration	Series	Series	Series
Empty Bed Contact Time	13.7 min	19.6 min	15.9 min
Hydraulic Loading Rate	6.88 gpm/sq ft	4.81 gpm/sq ft	5.92 gpm/sq ft

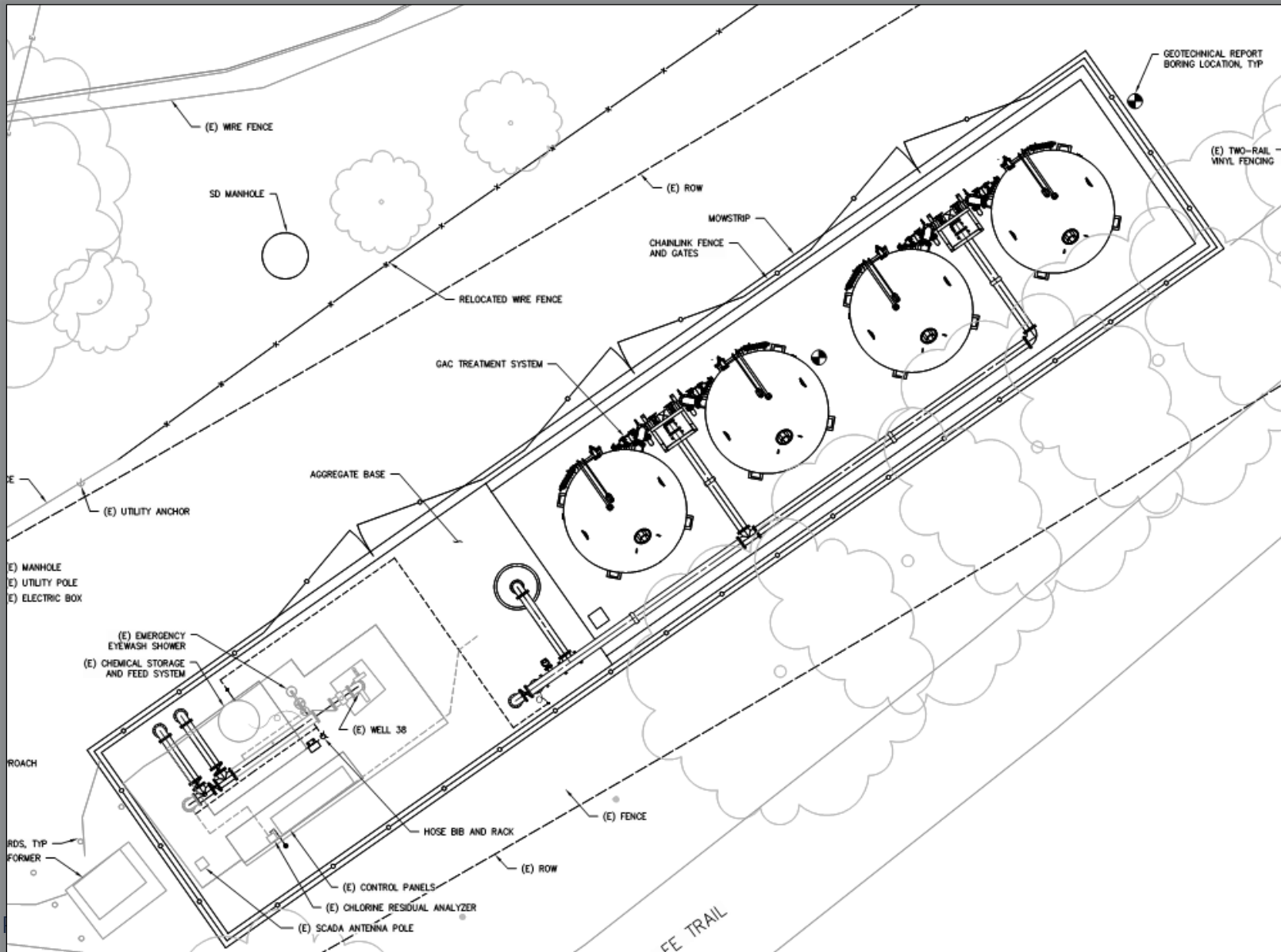
Well 11 – Blackstone and Sonora



Well 34 – Cross and Delwood



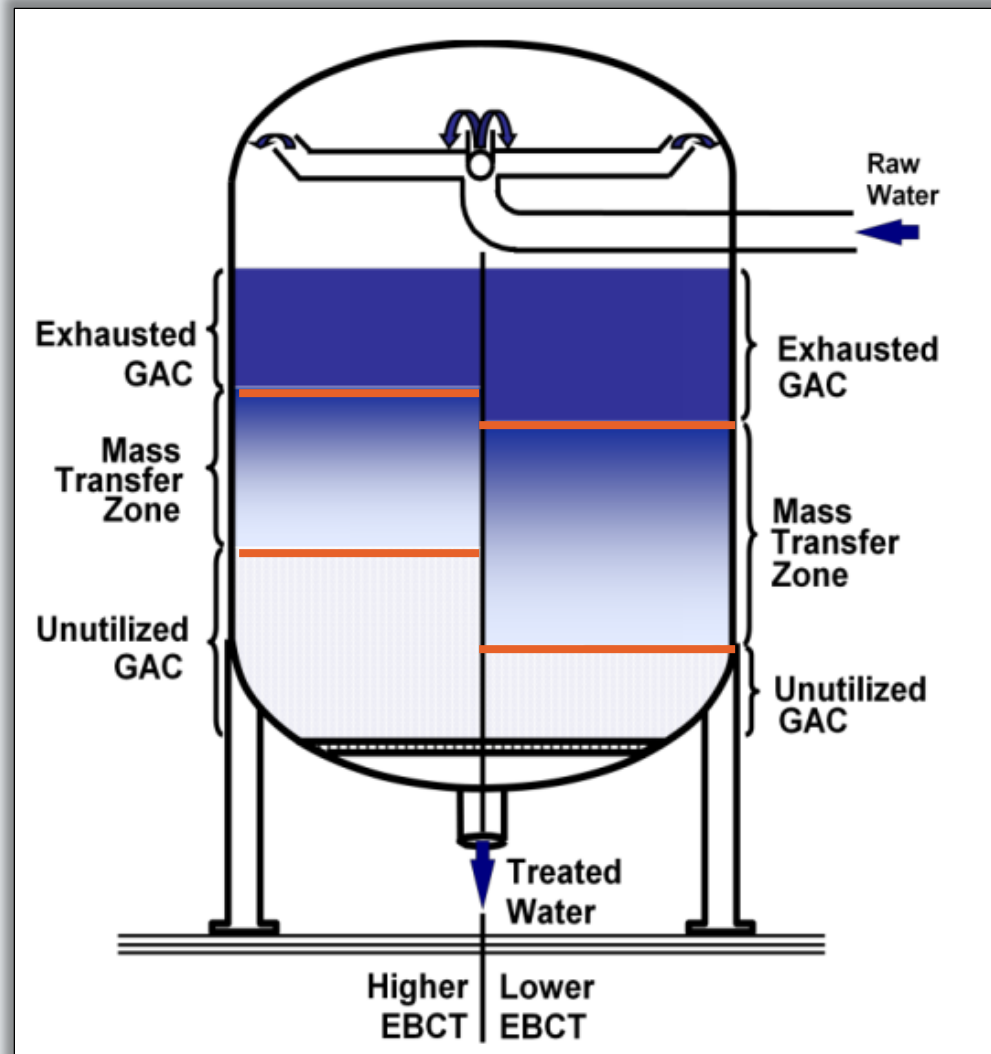
Well 38 – Laspina at Live Oak Park



Opinion of Probable Construction Cost

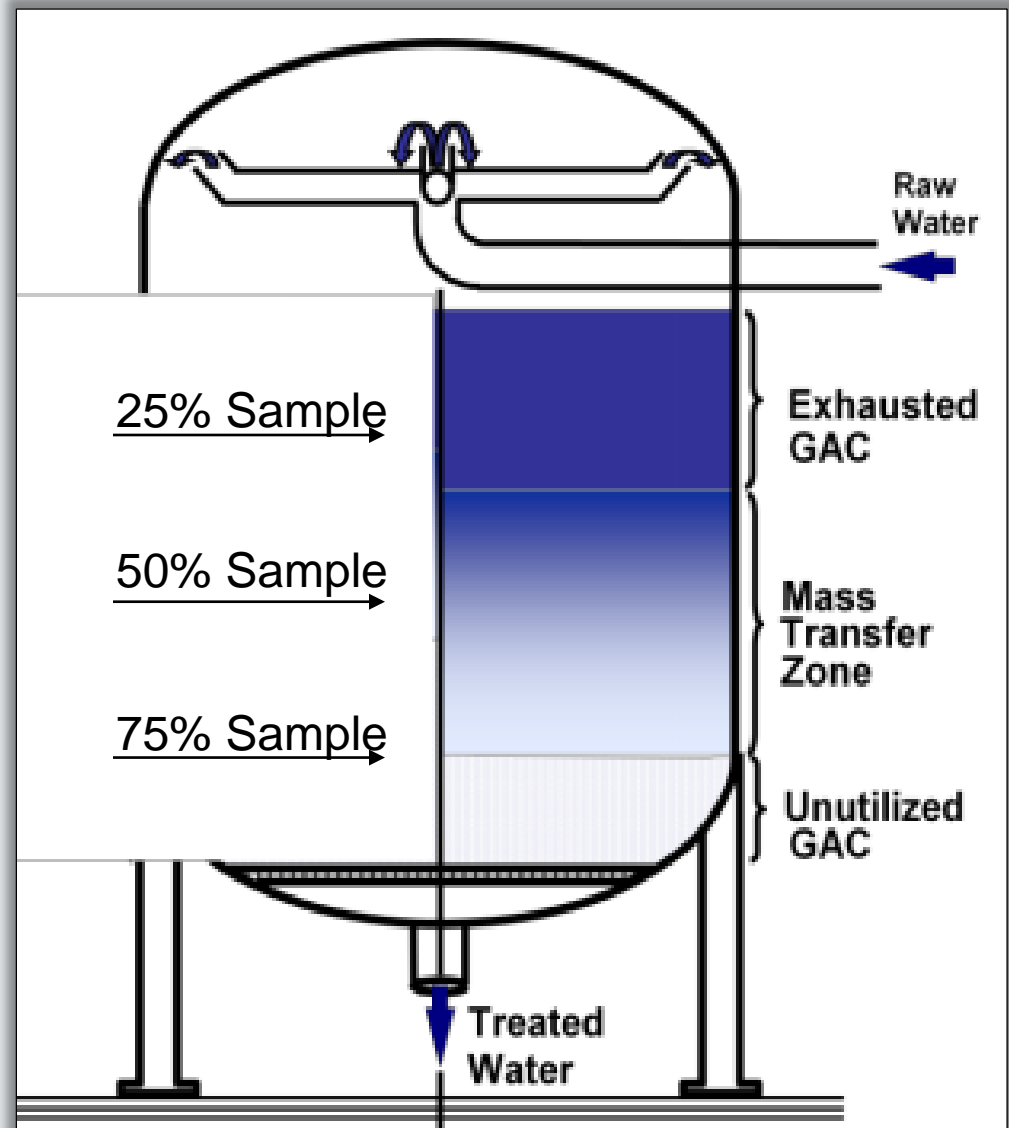
Group 2 - Well 11, 34, and 38 OPC Cost	
Description	Amount
General Conditions	\$215,000
Well 11	\$850,000
Well 34	\$1,186,000
Well 38	\$1,275,000
Subtotal Base Bid Amount	\$3,526,000
Estimate Uncertainty (15%)	\$528,900
Escalation to Mid-Point (1.5%)	\$52,900
Opinion of Probable Construction Cost	\$4,107,800

Empty Bed Contact Time and GAC Utilization

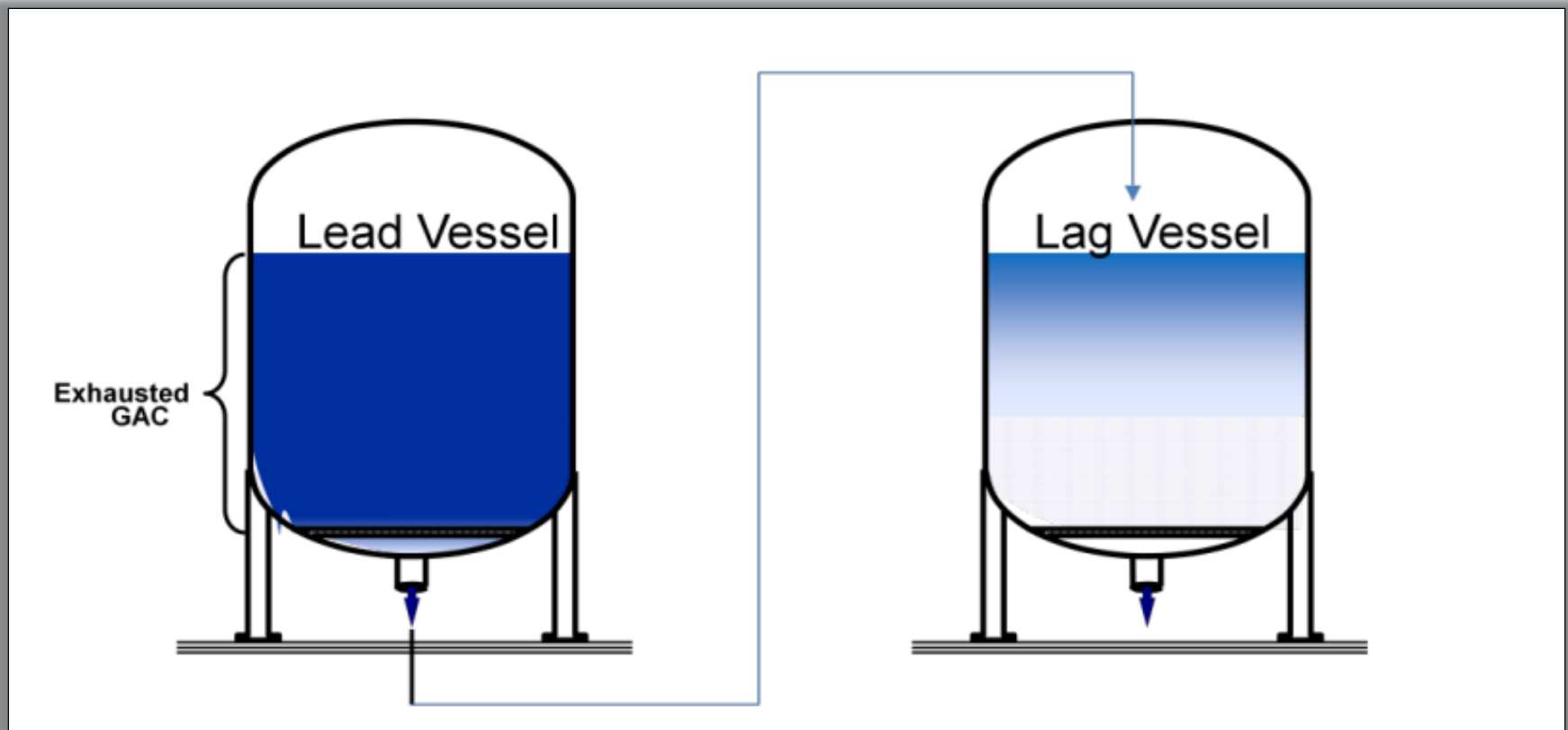


Parallel Operation

- Bottom 25% of the GAC is replaced having removed no TCP
- Half of the MTZ has not removed any TCP
- IF the MTZ is only half of the vessel, parallel operation under utilizes a minimum of 10,000 lbs of GAC per vessel



Series Operation



- Allows you to fully exhaust the GAC in one vessel while treating in the second vessel
- Required by DDW for sources with high TCP influent levels