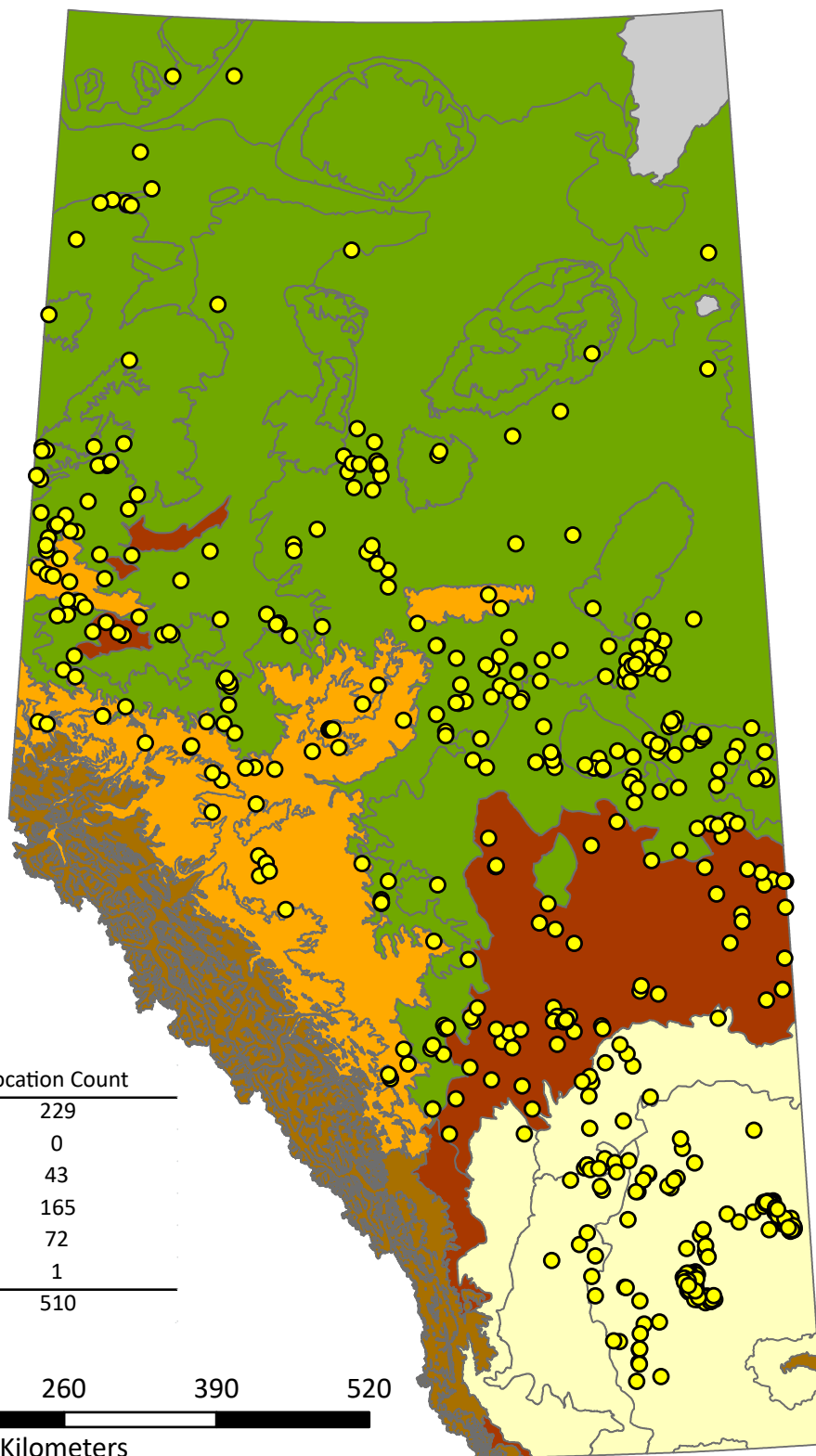




FIGURES



Natural Region	Location Count
Boreal	229
Canadian Shield	0
Foothills	43
Grassland	165
Parkland	72
Rocky Mountain	1
Total	510



NORTH SHORE
Environmental Consultants
143, 201 Kaska Road
Sherwood Park, Alberta
T8A 2J6
(780) 467-3354

Natural Regions of Alberta








-  Boreal
-  Canadian Shield
-  Foothills
-  Grassland
-  Parkland
-  Rocky Mountain
-  Candidate Locations

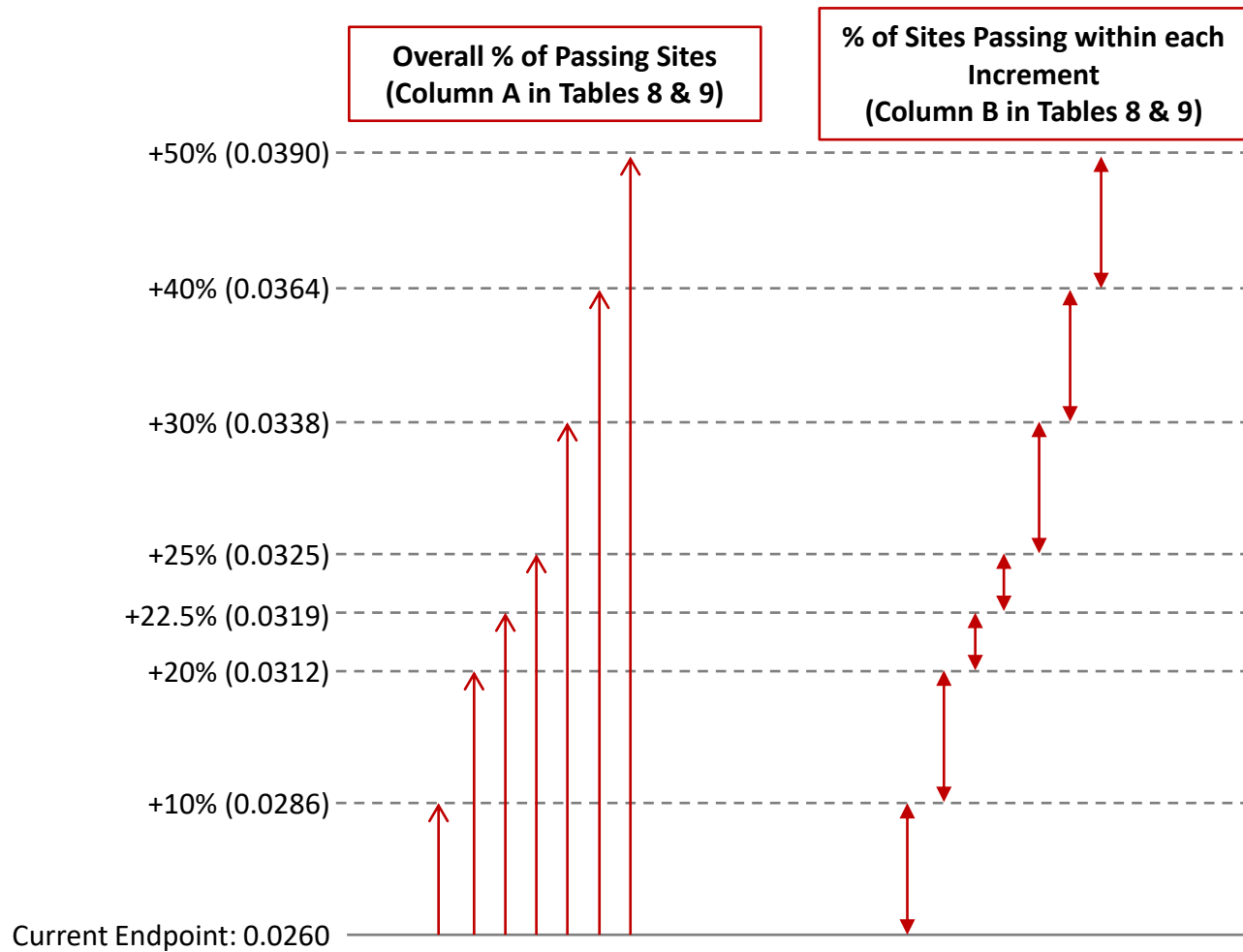
Figure 1: GIS Map of Candidate Site Locations

Scale: 1:5,977,078

JUNE 2020

Projection: NAD 1983 CSRS 10TM AEP Forest.
Source: Alberta Parks 2017, Cenovus Energy Inc, Canadian Natural Resources Ltd., Husky Energy Inc., Orphan Well Association.

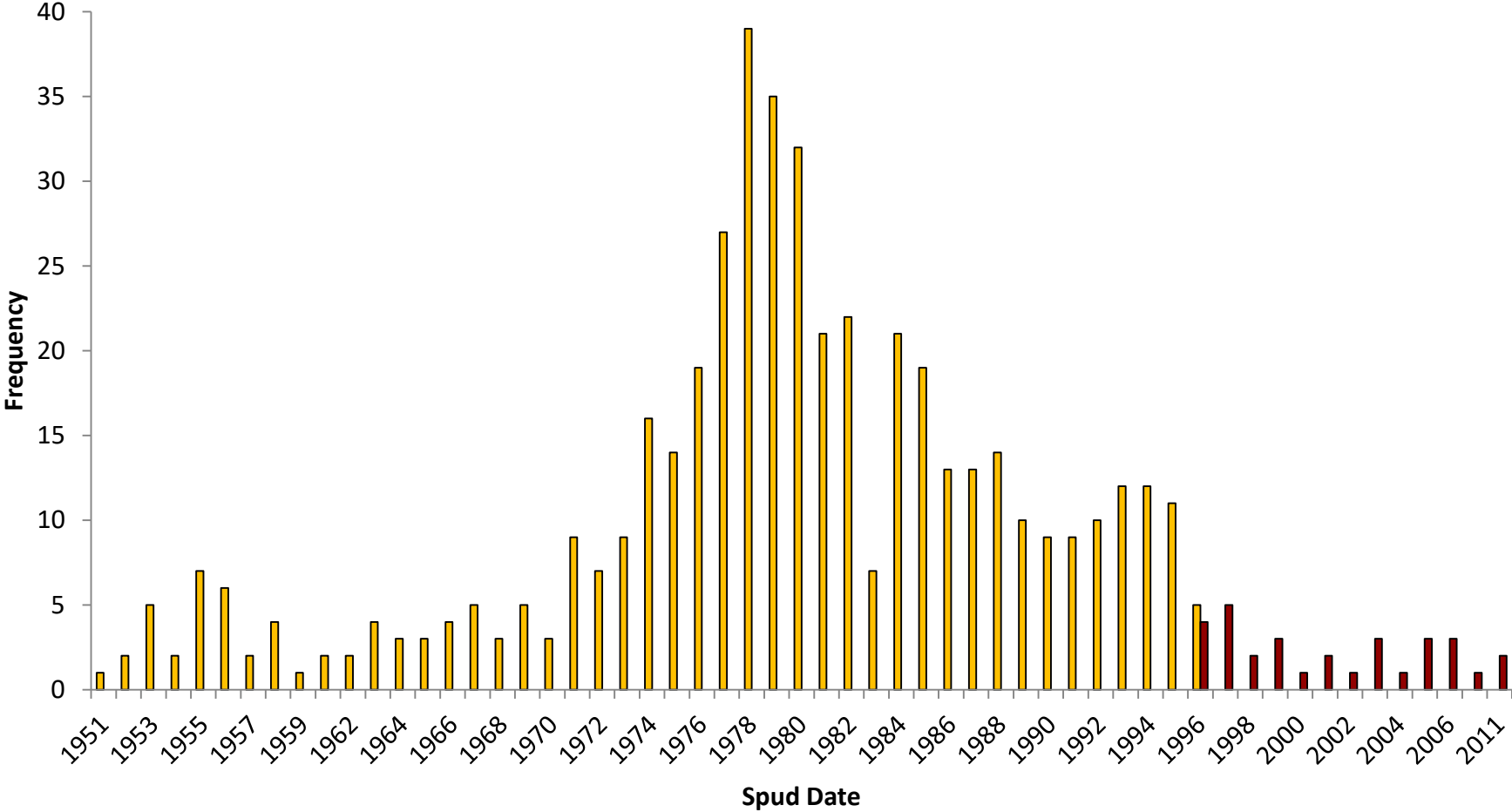
Figure 2: Diagram of Increased Endpoint Evaluation Methodology for Salt Calculation





APPENDIX - GRAPHS

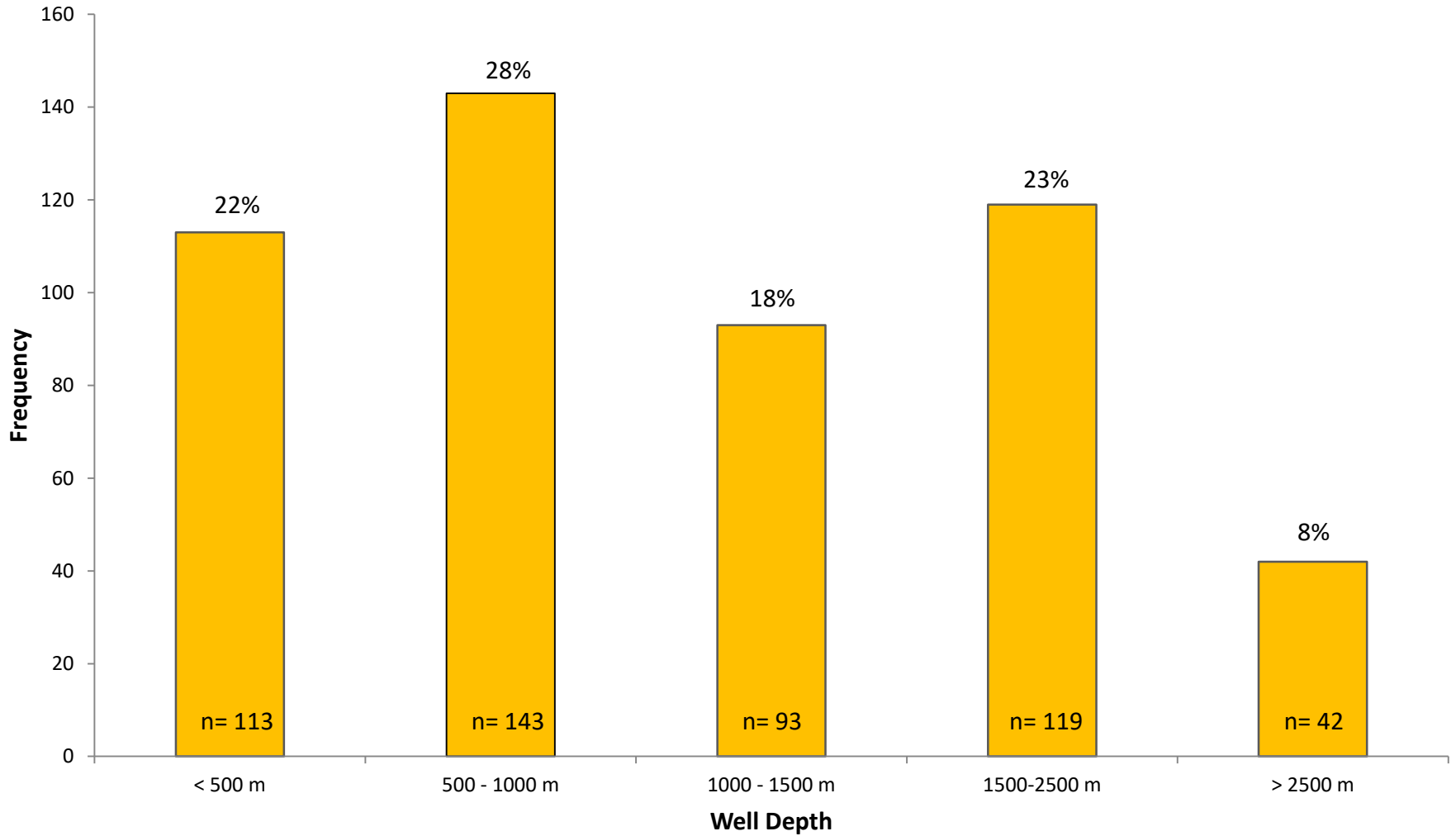
Graph 1: All Sites – Spud Date Histogram



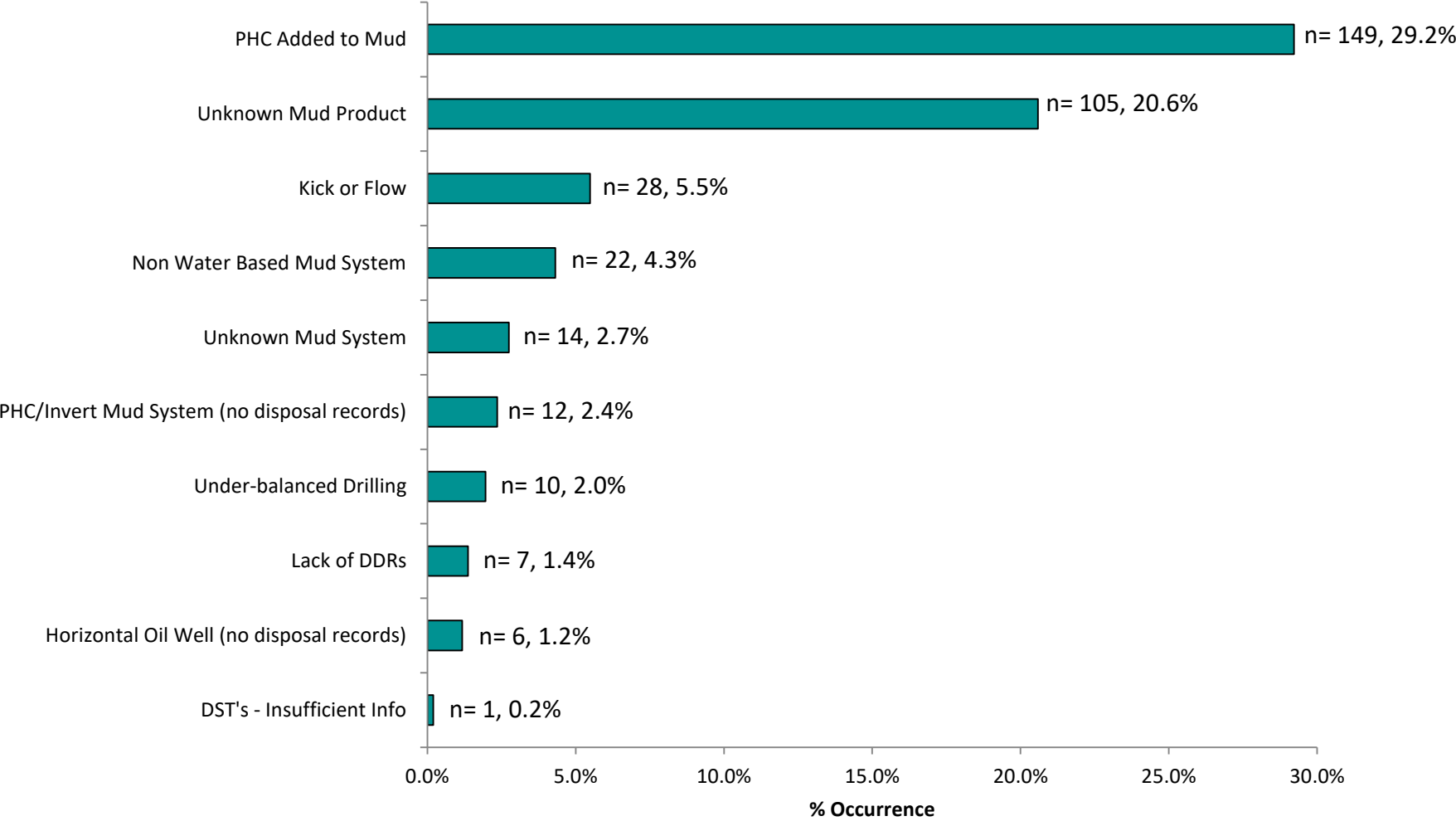
Pre Oct. 22, 1996 (1:1 mix ratio)
n=479, 93.9%

Post Oct. 22, 1996 (3:1 mix ratio)
n=31, 6.1%

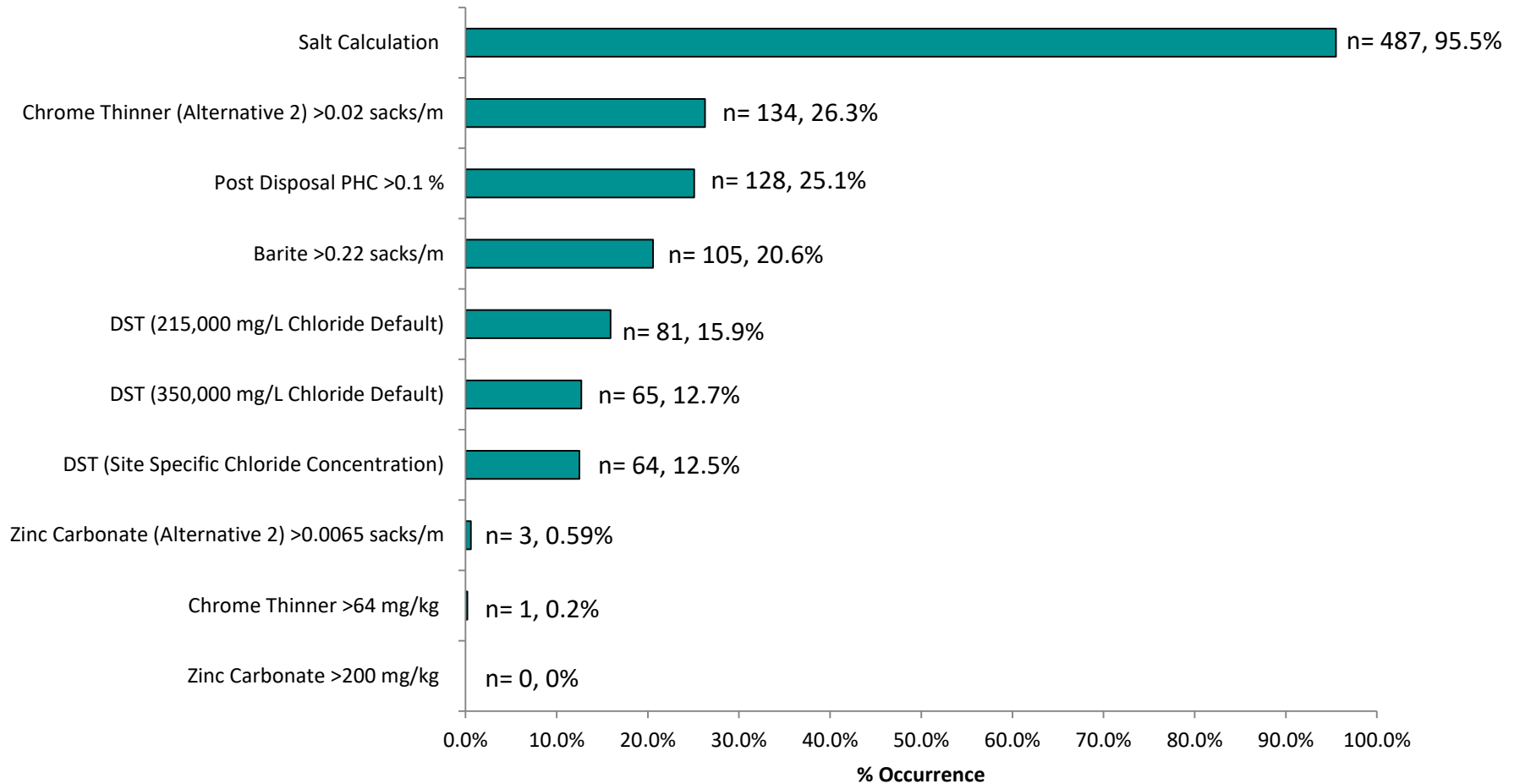
Graph 2: All Sites - Well Depth Histogram



Graph 3: All Condition Triggers - % Occurrence

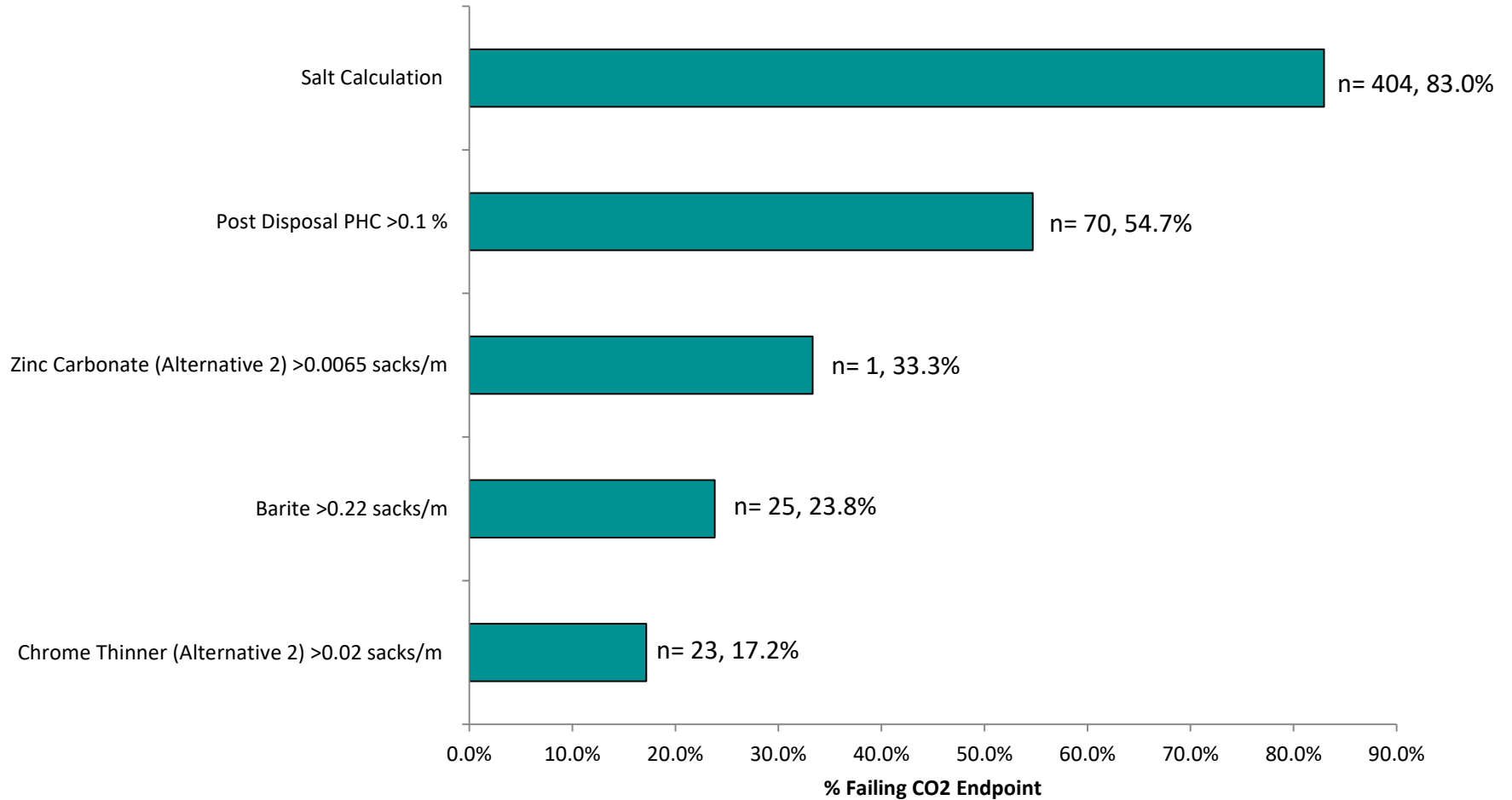


Graph 4: All Calculation Triggers - % Occurrence



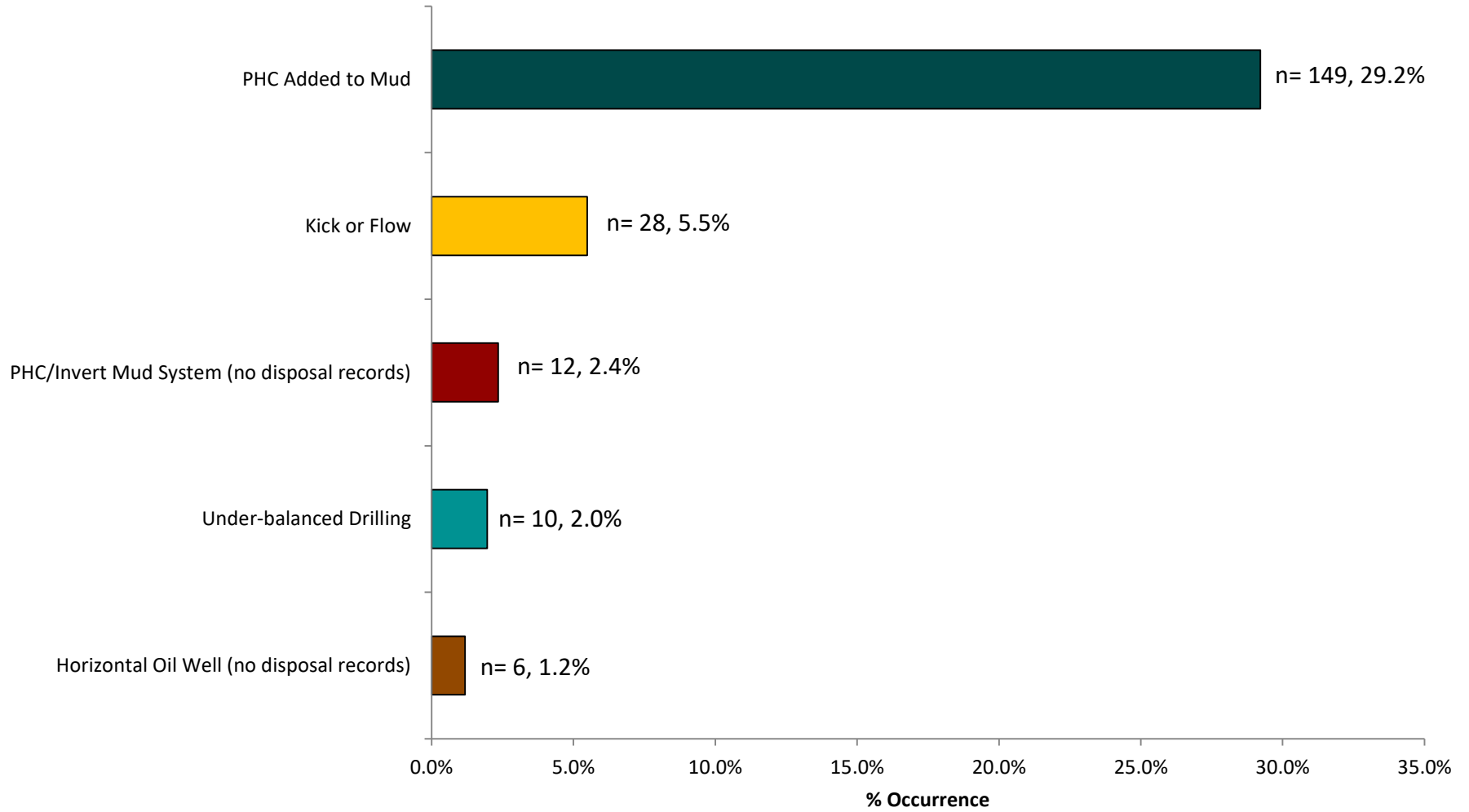
Note: % Occurrence includes all sites where the calculations were completed (both passing and failing CO2 endpoints)

Graph 5: All Calculation Triggers - % Failing CO2 Endpoint

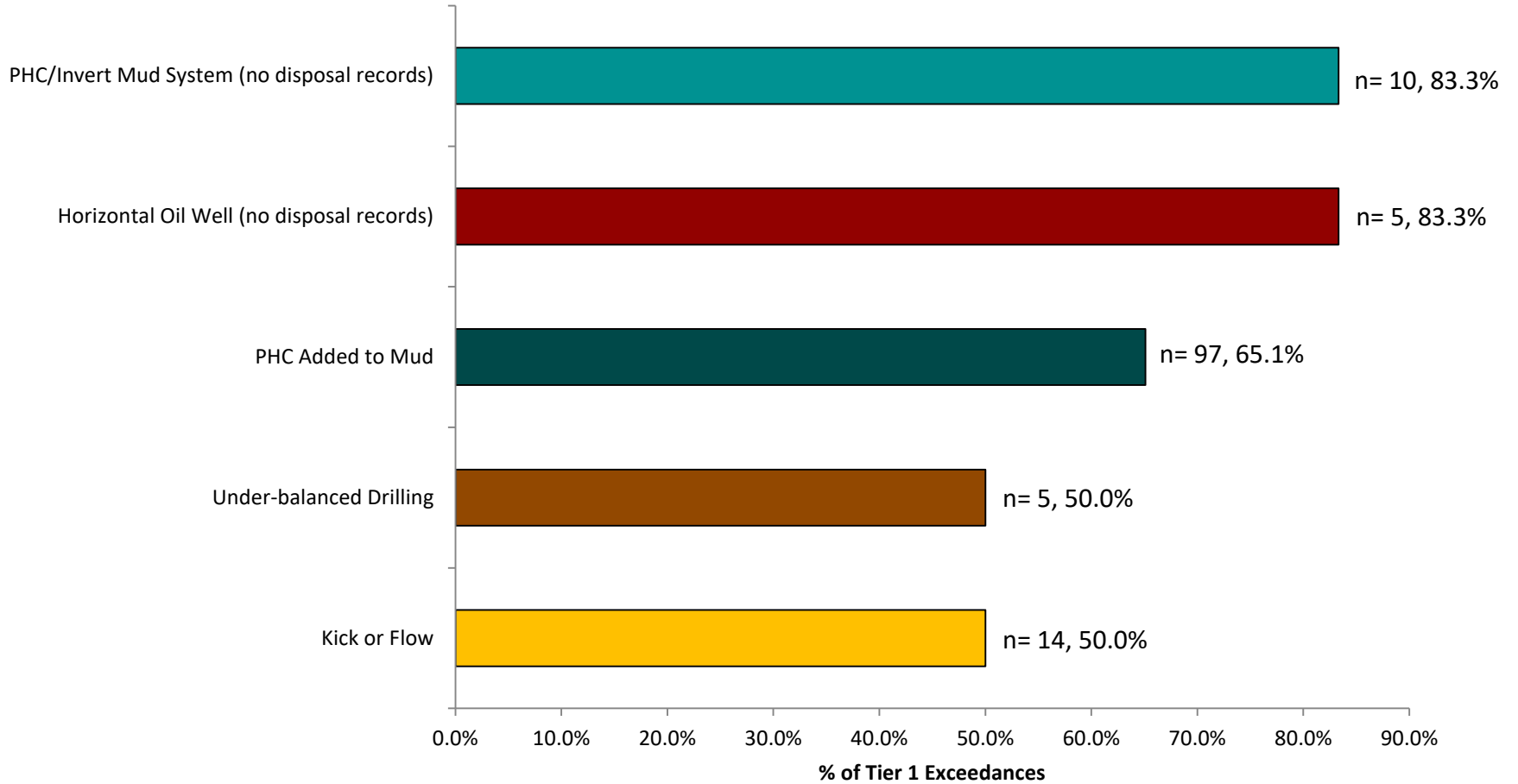


Note: %of sites Failing the CO2 Endpoint was calculated per total occurrences of each trigger.

Graph 6: PHC - Condition Triggers % Occurrence

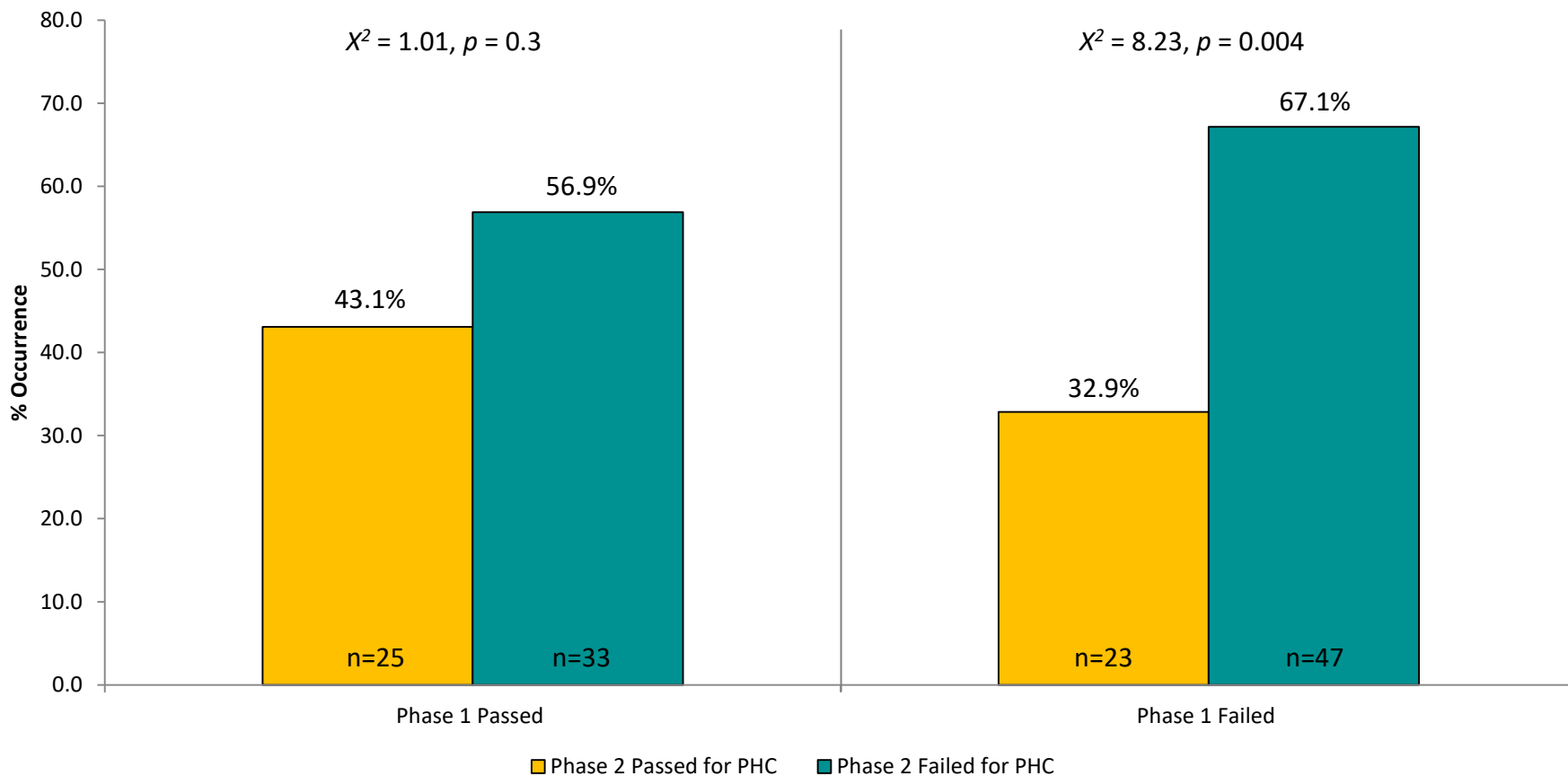


Graph 7: PHC Condition Occurrence - % of Tier 1 Exceedances



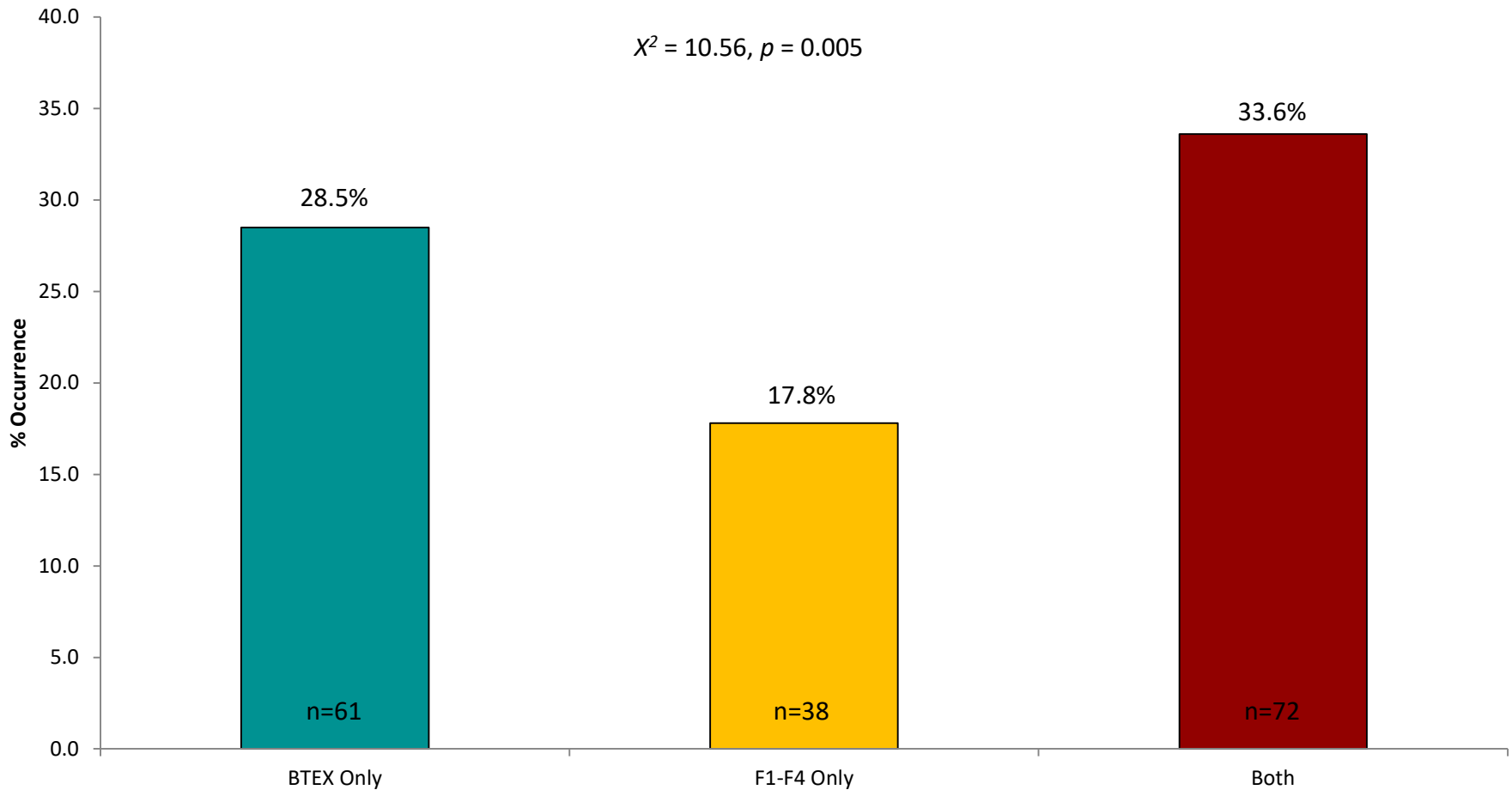
Note: % of Tier 1 Exceedances was calculated per total occurrences of each PHC Condition.

Graph 8: PHC - Comprison of CO2 Post-Disposal PHC Values to Phase 2 Outcomes



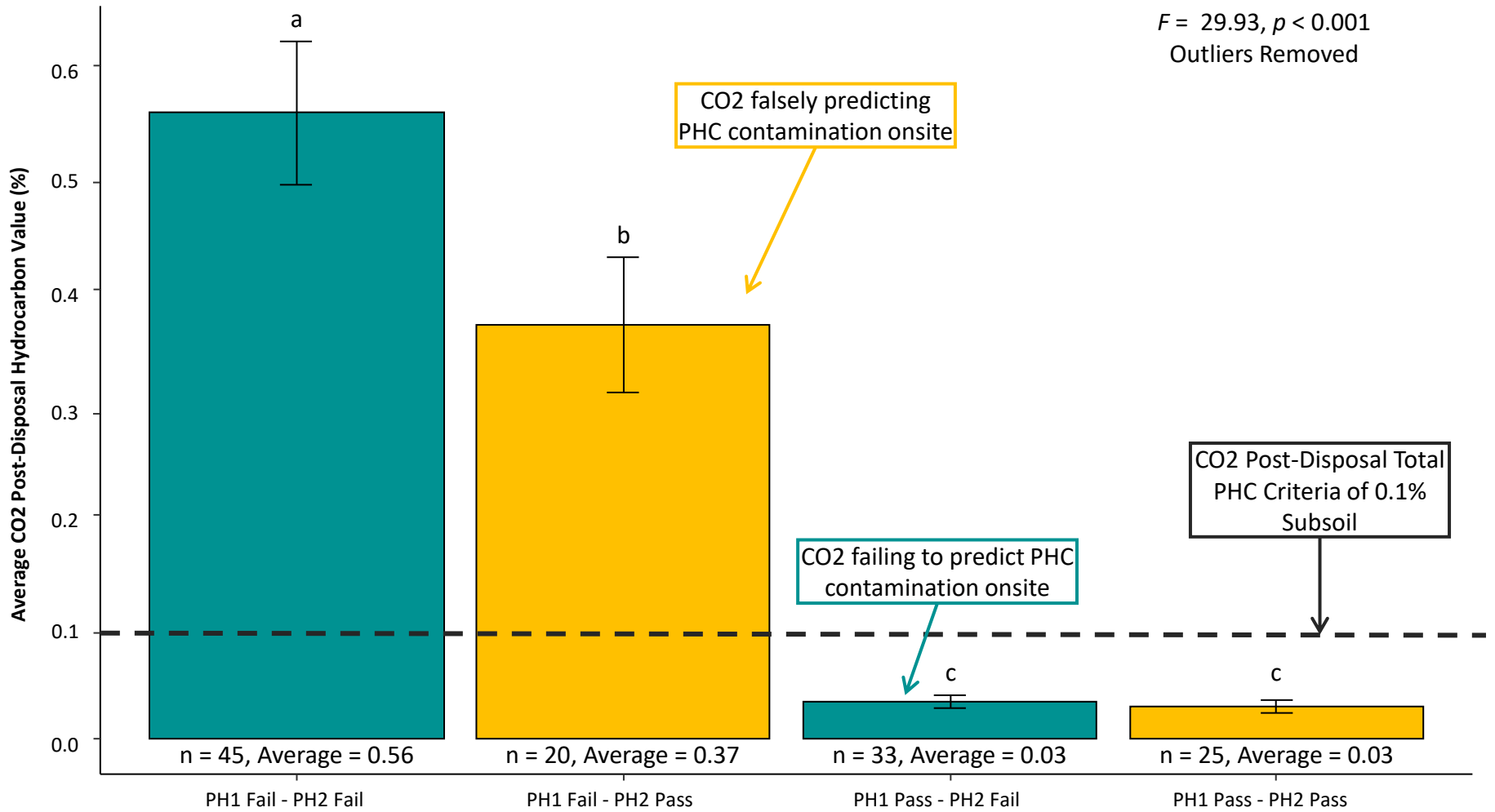
Note: CO2 Post-Disposal PHC endpoint of 0.1% total PHC in subsoil. Includes all sites where the calculation was completed (both passing and failing the 0.1% total PHC endpoint).

Graph 9: PHC - % of Phase 2 Exceedances by Hydrocarbon Type with No PHC Triggers in CO2

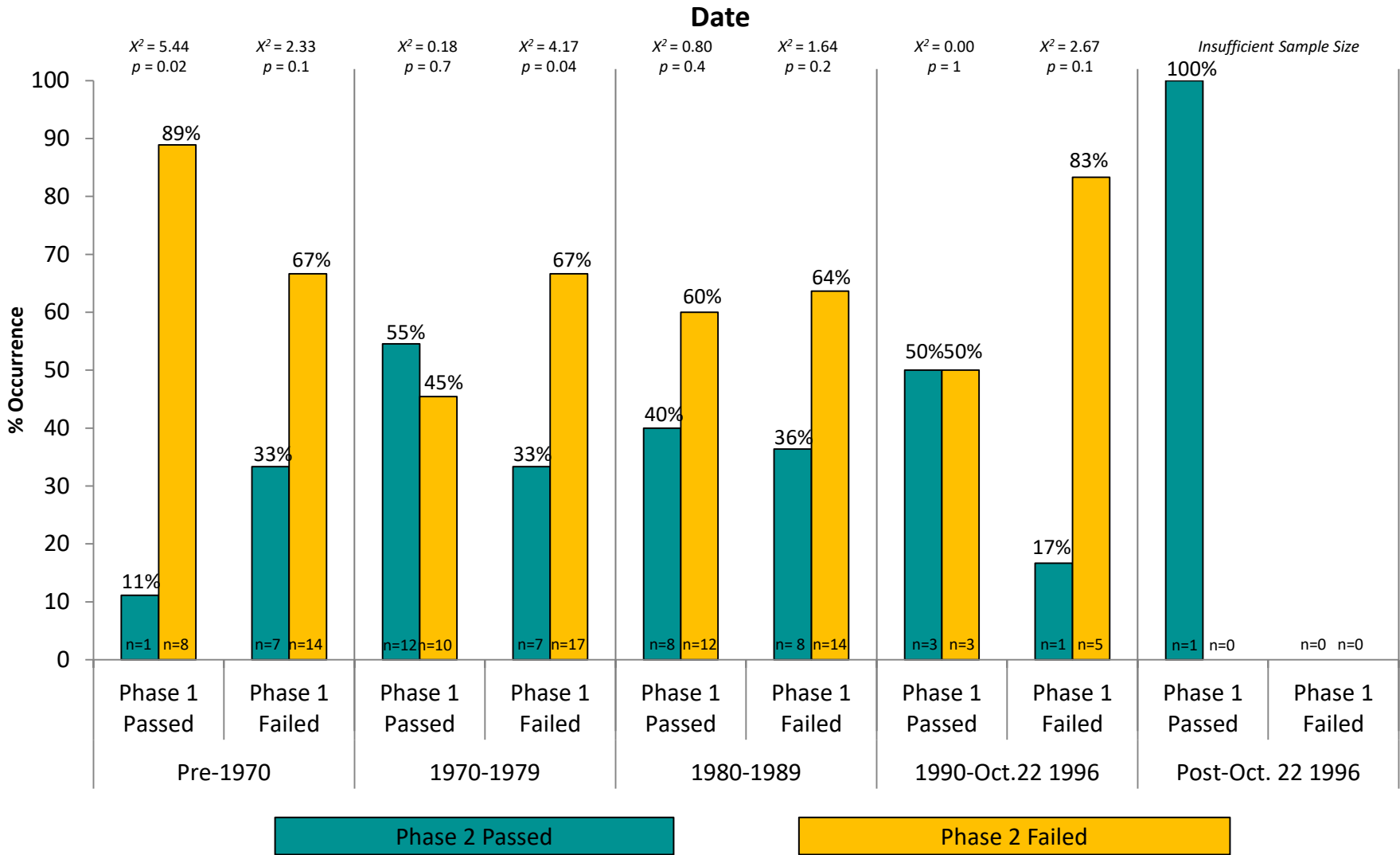


Note: Includes all sites where no PHC or other condition or calculation triggers were identified in CO2; however, sampling for PHC was completed during the Phase 2.

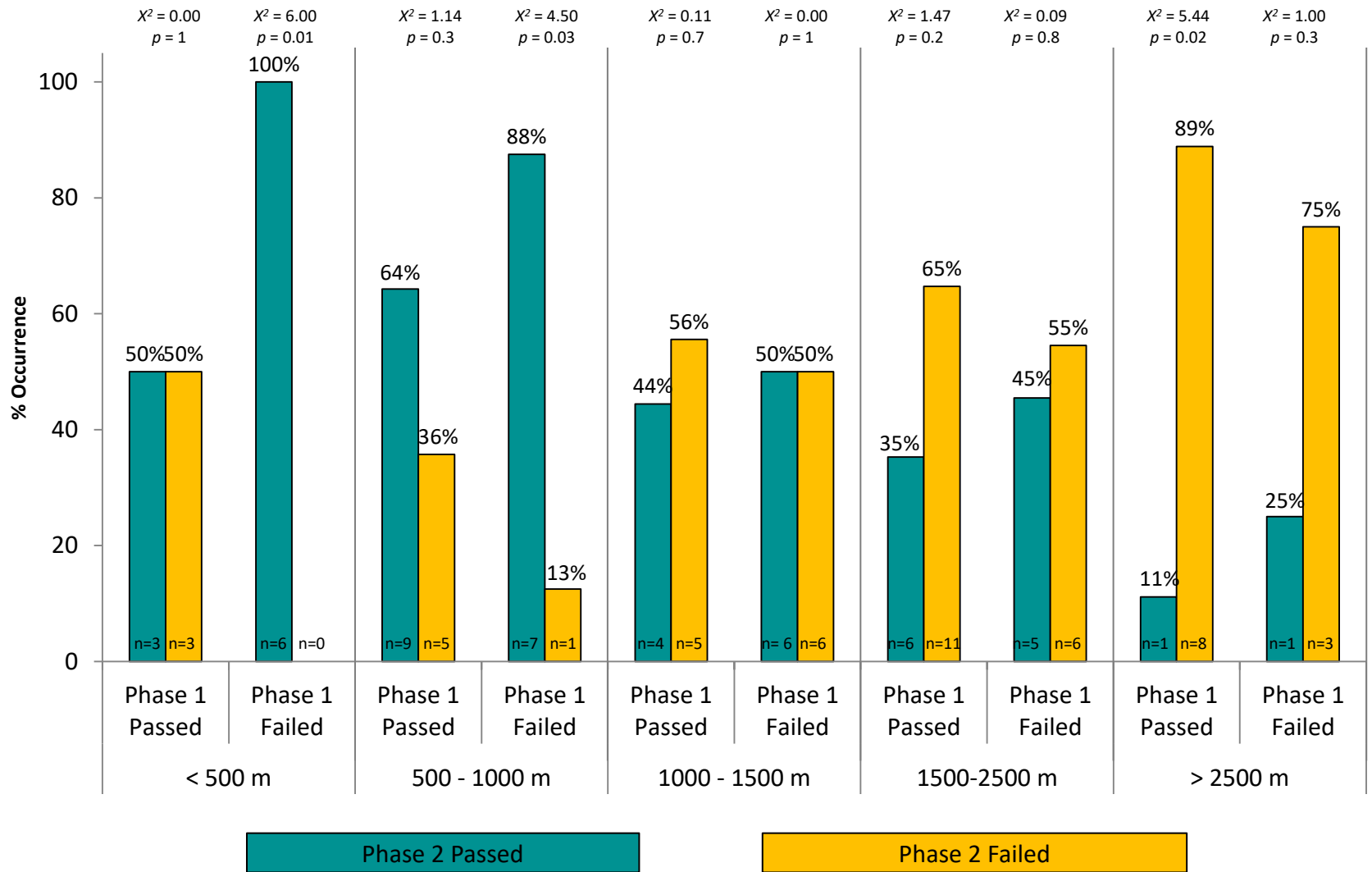
Graph 10: PHC - Post-Disposal Hydrocarbon Values Based on Phase 1 and Phase 2 Outcomes



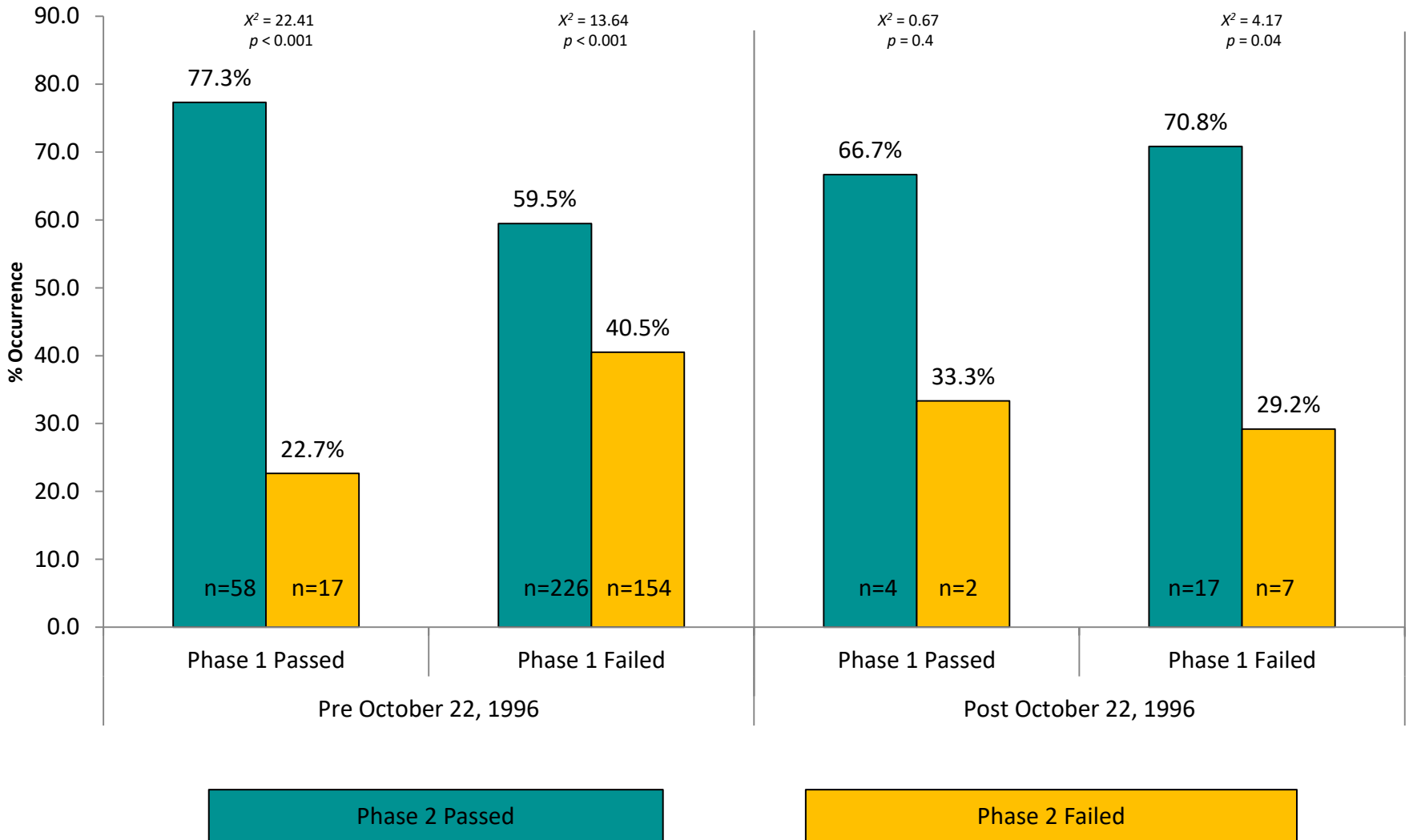
Graph 11: PHC - Comparison of Post-Disposal PHC Trigger to Phase 2 Outcomes by Spud



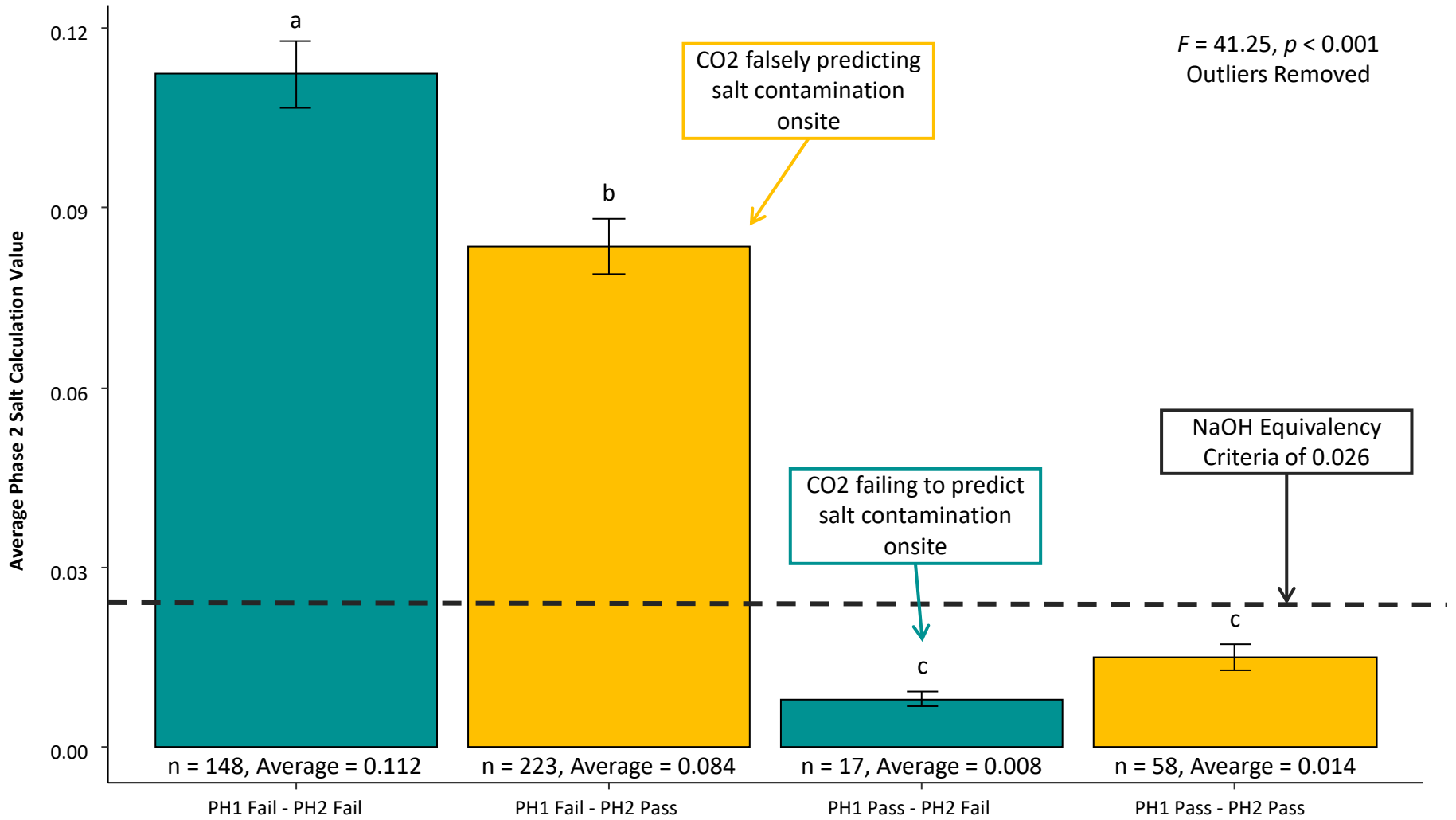
Graph 12: PHC - Comparison of Post-Disposal PHC Trigger to Phase 2 Outcomes by Well Depth



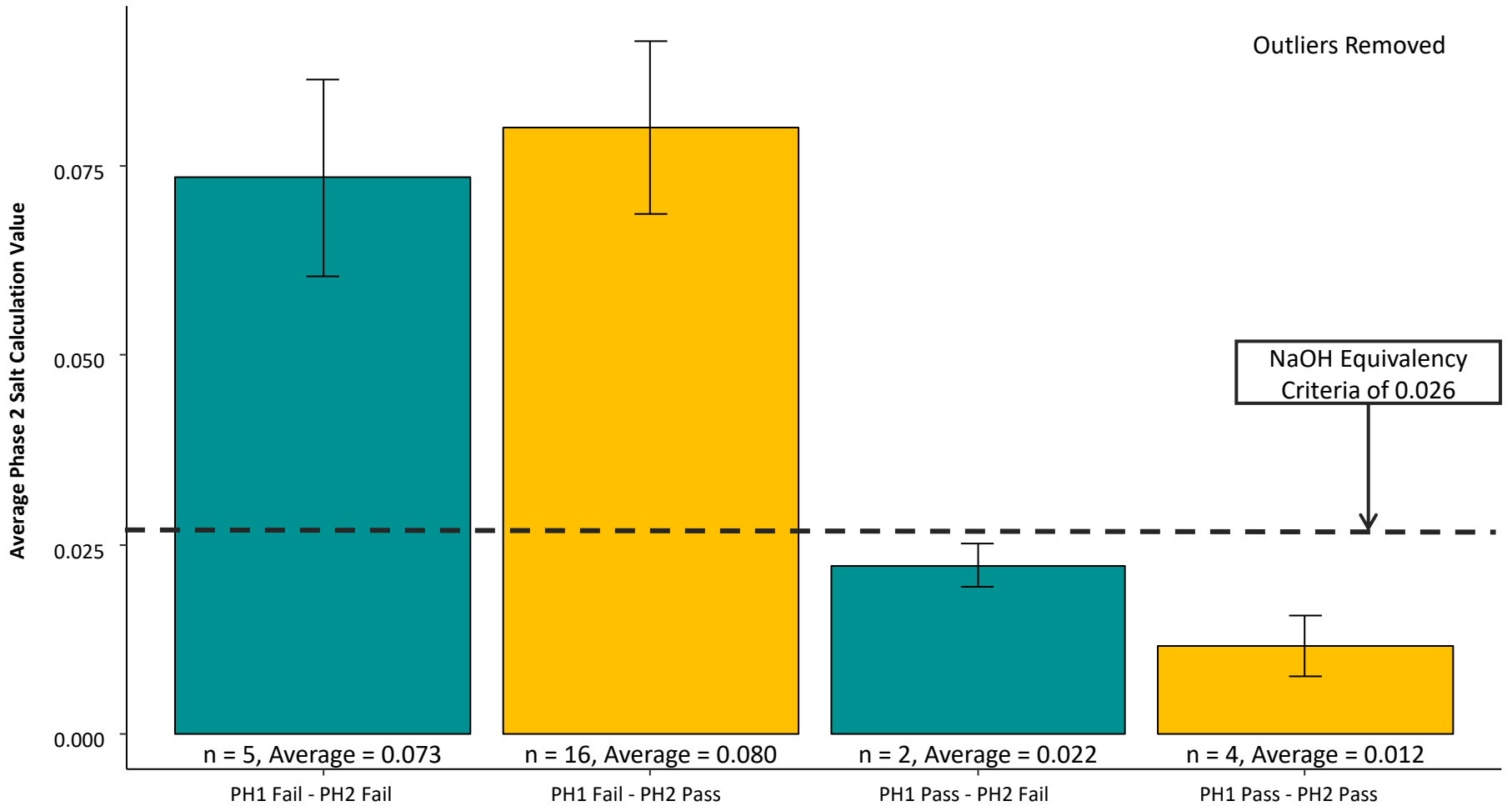
Graph 13: Salinity - Comparison of CO2 Salt Calculation Values to Phase 2 EC Outcomes



Graph 14: Salinity - CO2 Salt Calculation Values based on Phase 2 EC Outcomes (Pre-October 22, 1996)

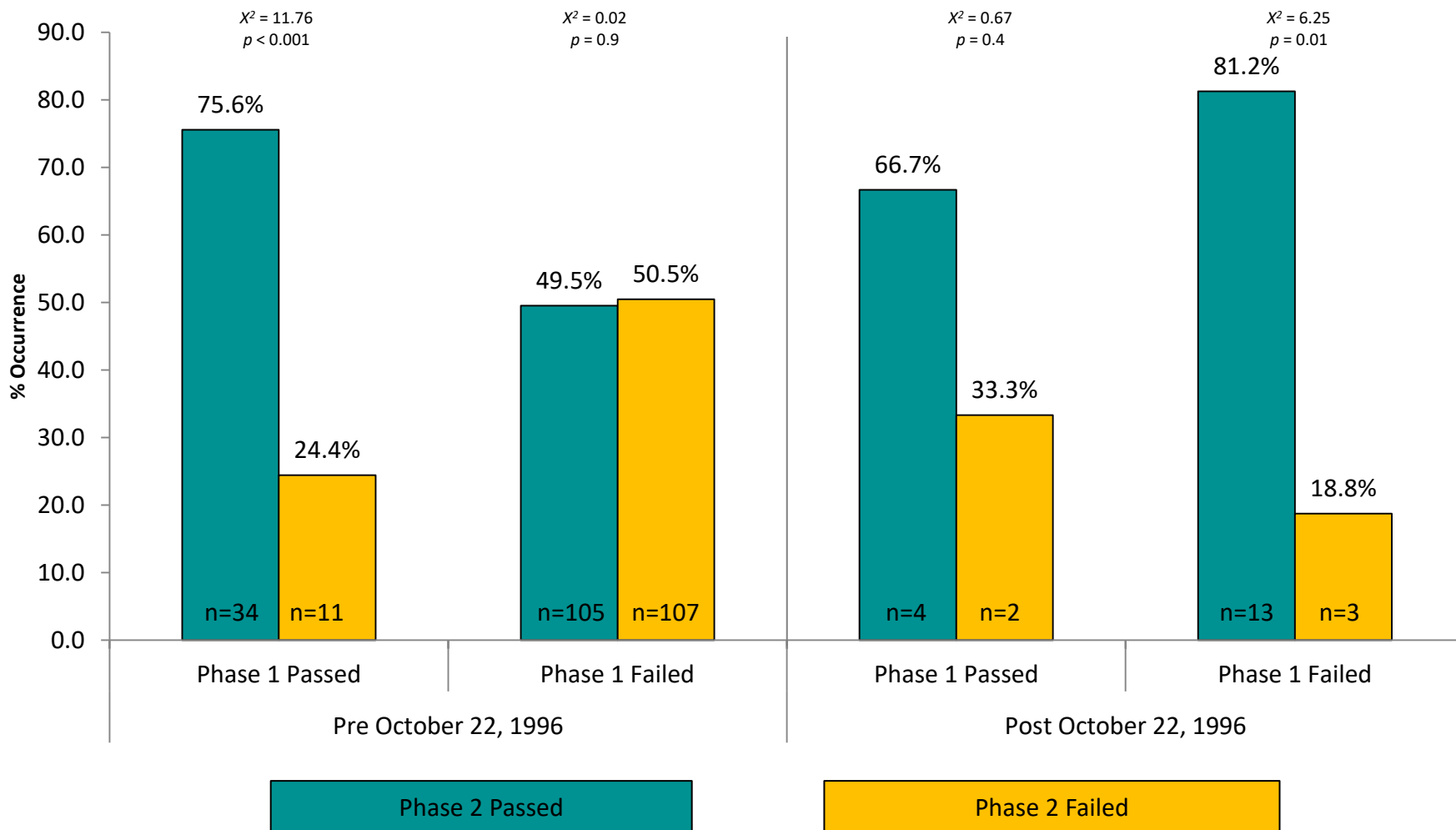


Graph 15: Salinity - CO2 Salt Calculation Values based on Phase 2 EC Outcomes (Post-October 1996)

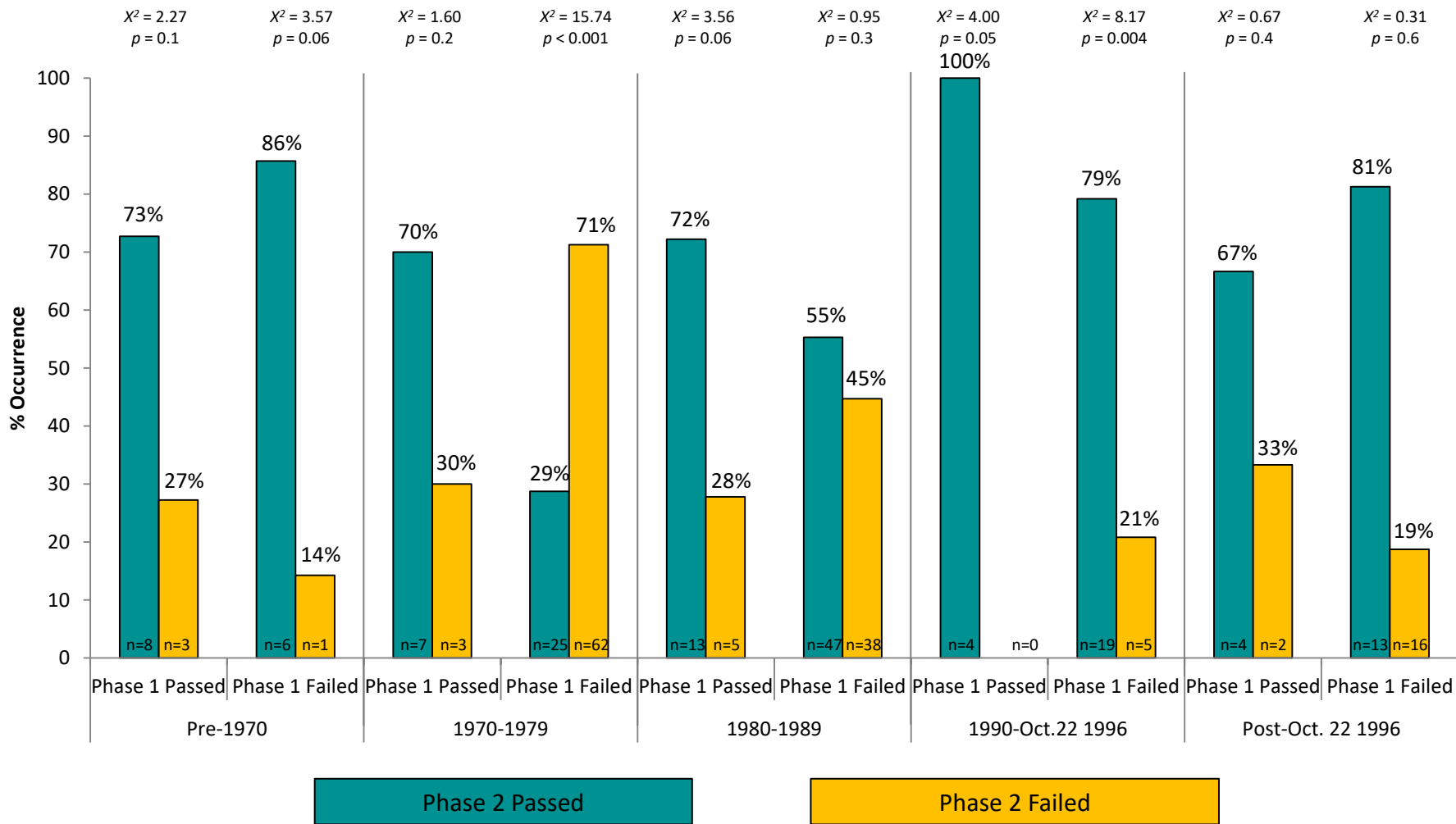


Note: Statistical analysis could not be completed due to low sample size.

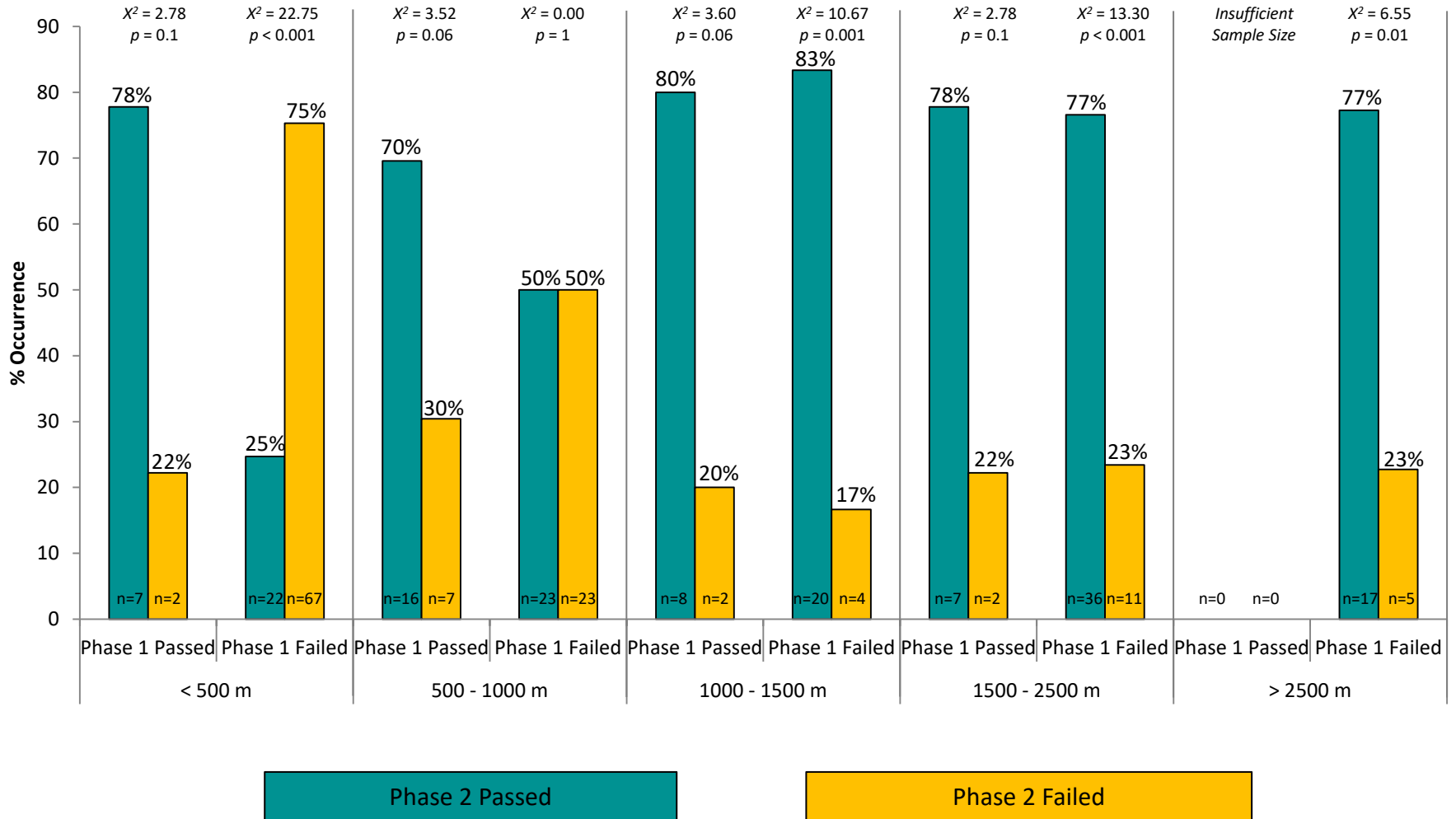
**Graph 16: Salinity – CO2 Salt Calculation Values (Mud Additives Only)
compared to Phase 2 EC Outcomes**



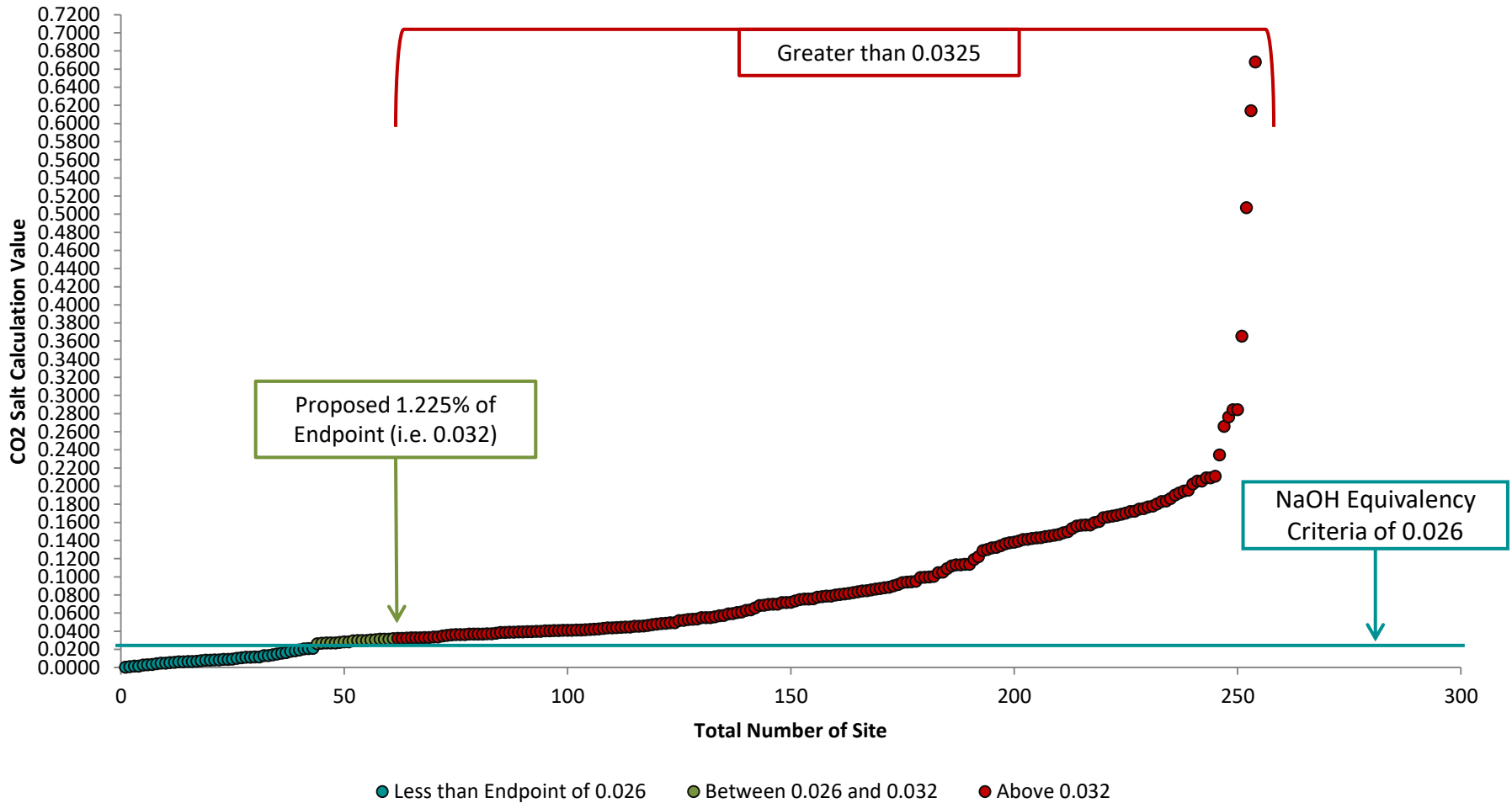
Graph 17: Salinity - Comparison of CO2 Salt Calculation Values (Mud Additives Only) to Phase 2 Outcomes by Spud Date



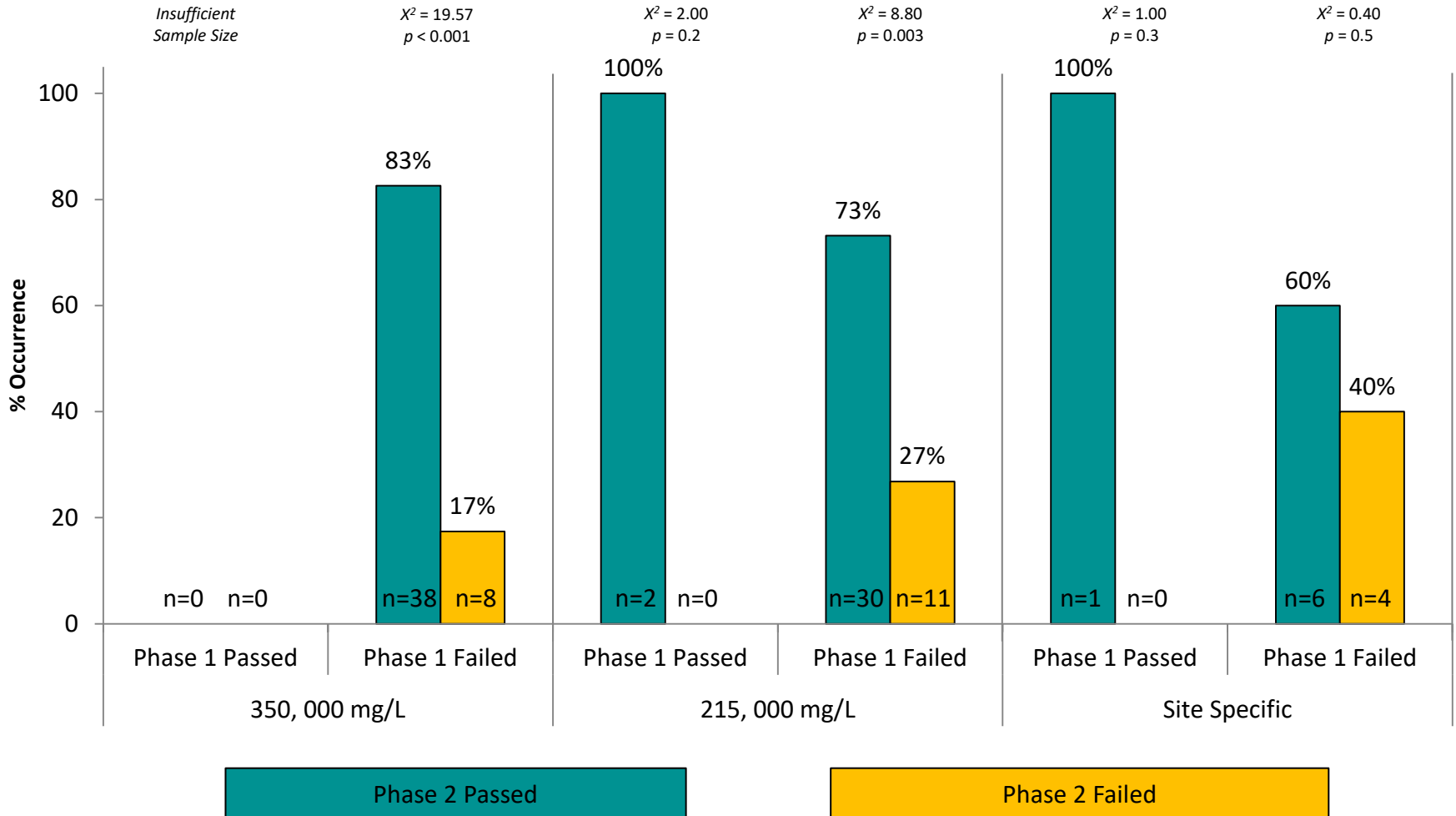
Graph 18: Salinity - Comparison of CO2 Salt Calculation Values (Mud Additives Only) to Phase 2 EC Outcomes by Well Depth



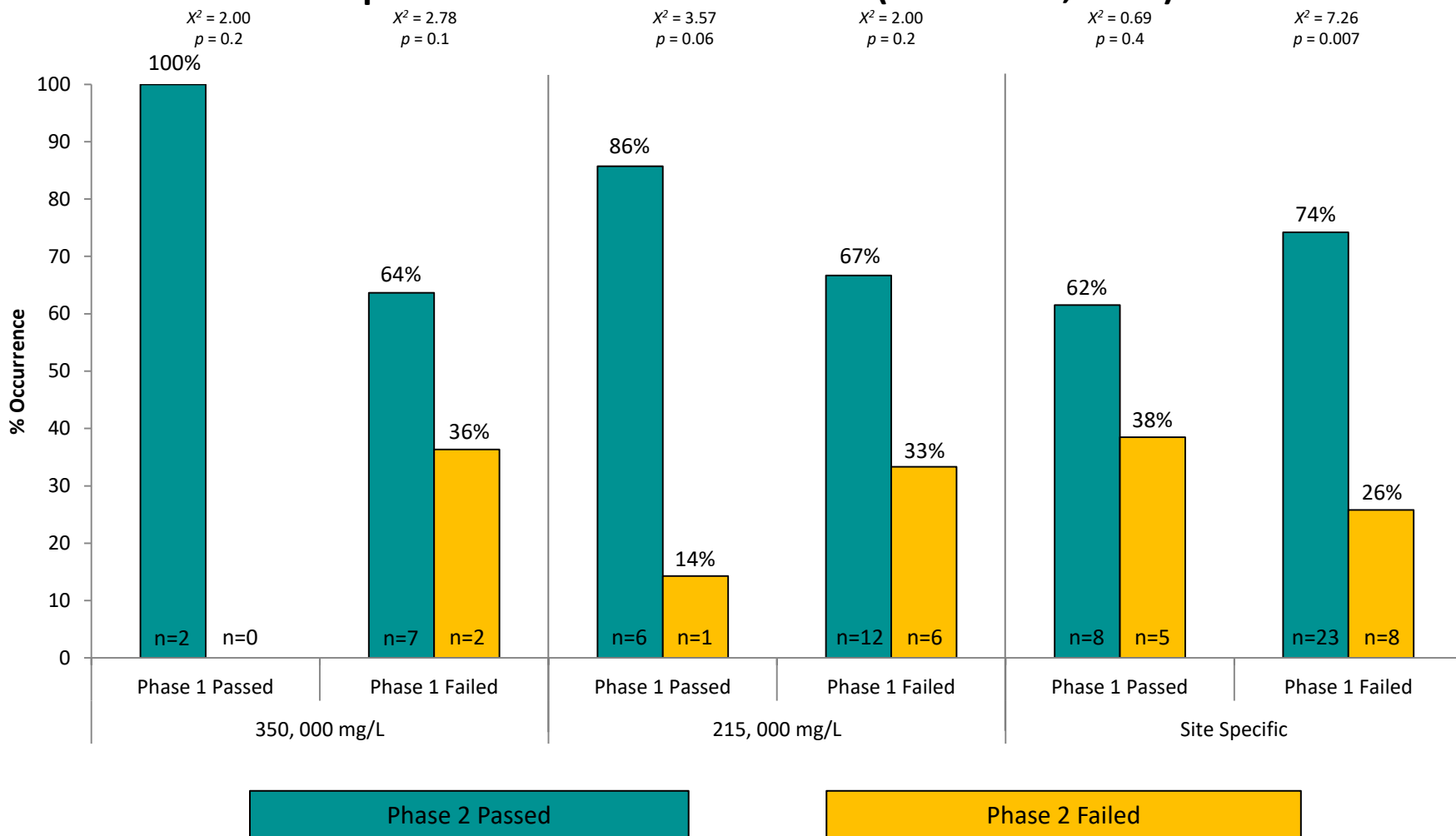
Graph 19: Salinity - CO2 Salt Calculation Values (Mud Additives Only) Divided by Different Endpoints



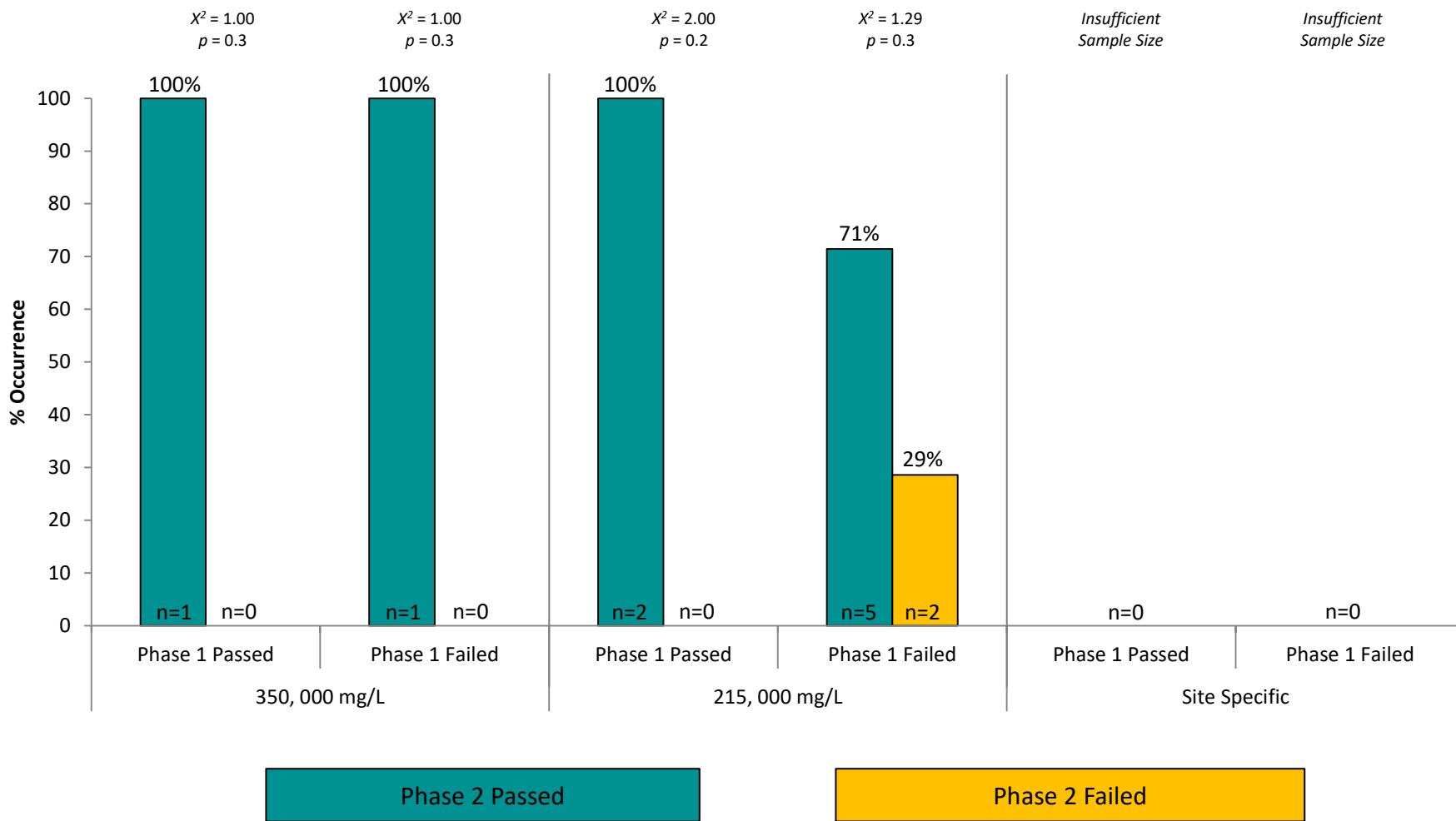
Graph 20: Salinity – DST Contribution (>50%) to CO2 Salt Calculation Compared to Phase 2 EC Outcomes (Pre-Oct 22, 1996)



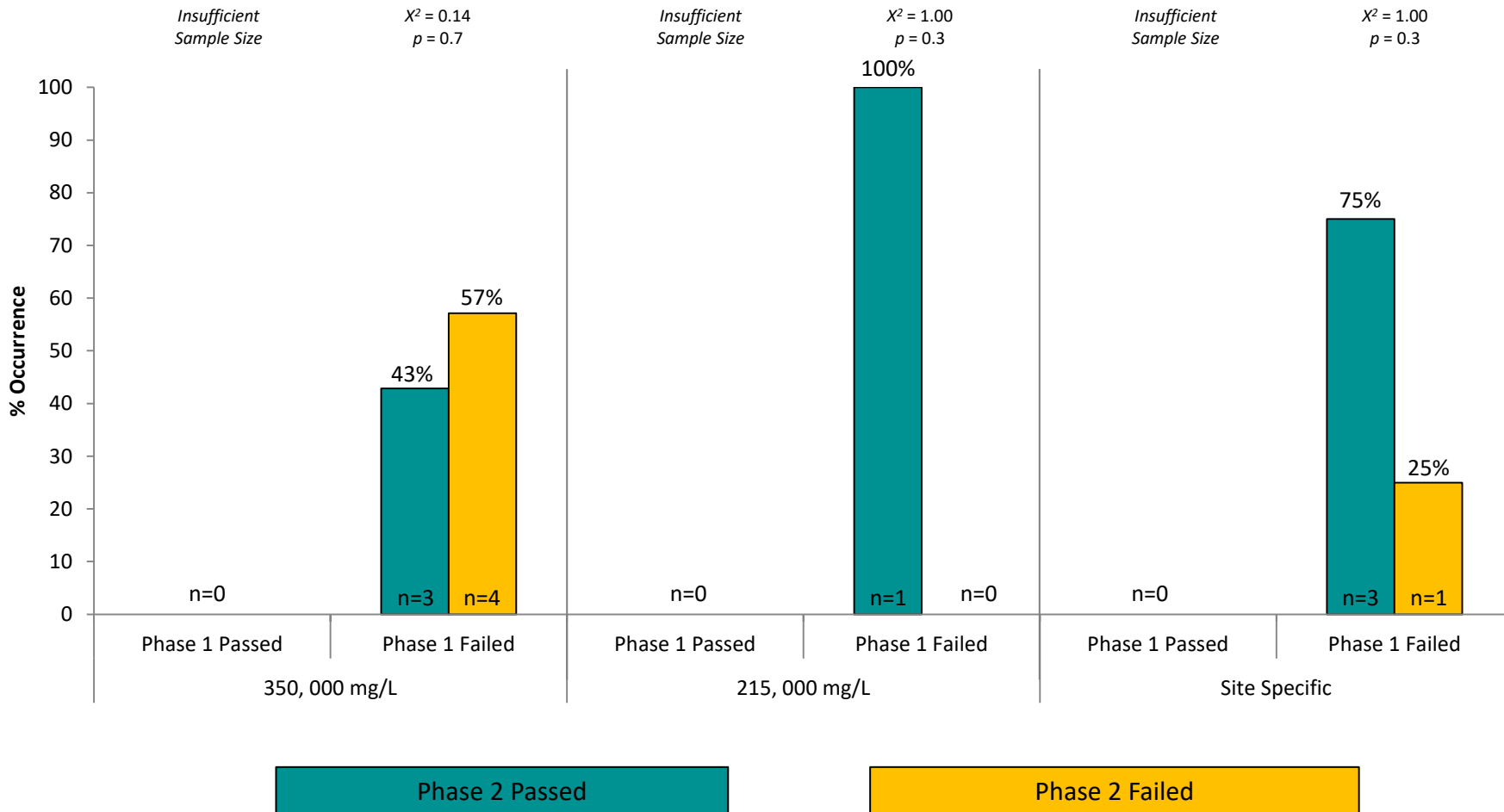
Graph 21: Salinity - DST Contribution (0.1 - 40%) to CO2 Salt Calculation Compared to Phase 2 EC Outcomes (Pre-Oct 22, 1996)



Graph 22: Salinity - DST Contribution (41 - 60%) to CO2 Salt Calculation Compared to Phase 2 EC Outcomes (Pre-Oct 22, 1996)



Graph 23: Salinity - DST Contribution (61 - 80%) to CO2 Salt Calculation Compared to Phase 2 EC Outcomes (Pre-Oct 22, 1996)



Note: Statistical analysis could not be completed due to low sample size.

Graph 24: Salinity - DST Contribution (81 - 100%+) to CO2 Salt Calculation Compared to Phase 2 EC Outcomes (Pre-Oct 22, 1996)

