

4. p-well drive Date **Feb 21 & 22** Name: **GT, for all groups.**

Perform the drive on all device wafers and all test wafers.

(The standard clean can be omitted if going directly from deposition to drive.)

Standard Clean *Use plastic tweezers after cleaning wafers*

- SC-1: 15 minutes at 80°C
2500 ml DI H₂O + 500 ml NH₄OH + 500 ml H₂O₂
- Cascade rinse: 3 minutes
- HF dip: 15 seconds in 50:1 HF
- Cascade rinse: 1 minute
- SC-2: 15 minutes at 80°C
3000 ml DI H₂O + 500 ml HCl + 500 ml H₂O₂
- Cascade rinse: 3 minutes
- Spin rinse/dry

P-Well Low-Temperature Oxidation (LTO) and Boron Drive *Use plastic tweezers*

- Bubbler on: Temperature: 98°C
Bubbler N₂: 200 sccm—switch to vent
- Push: Ambient: 1 slpm dry N₂
Temperature: 800°C
Rate: 1 inch every 12 seconds
- LTO: Ambient: 200 sccm bubbler N₂ Bubbler switch to tube
Temperature: 800°C
Time: 30 minutes
- Bubbler off: Power: off
(if not used further) Bubbler N₂: off — switch to vent
- Pull: Ambient: 1 slpm dry N₂
Temperature: 800°C
Rate: 1 inch every 12 seconds
- Deglaze: BOE 30 seconds
- Cascade rinse: 3 minutes
- Spin rinse/dry
- Push: Ambient: 1 slpm dry N₂
Temperature: 800°C

NSF Laboratory - CyMOS process traveler

- Ramp up: Ambient: **2 slpm dry N₂**
 Final temperature: **1125°C**
 Elapsed time: ≈ 15 minutes

- Oxidation: Ambient: **H₂O + N₂**
 Temperature: **1125 °C**
 Time: **10 min**

- Drive: Ambient: **2 slam dry N₂**
 Temperature: **1125°C**
 Time: **17 hr, 50 min**

- Ramp down: Ambient: **1 slpm dry N₂**
 Final temperature: **600°C**
 Elapsed time: **overnight**

- Pull: Ambient: **1 slpm dry N₂**
 Temperature: **600°C**
 Rate: **1 inch every 12 seconds**

Measure oxide thickness TW1 _____.

 TW2 _____.

 TW3 _____.

 TW4 _____.

