

| Date / Initials | Feeding | Feedline change | Cleaning | Spec pH headers | Spec pH buckets | Temp / Salinity | Alkalinity Samples | Notes |
|-----------------|---------|-----------------|----------|-----------------|-----------------|-----------------|--------------------|--|
| 3/28 LTR | ✓ | 4,3,2,1 | ✓ | ✓ | ✓ | ✓ | | lowered H2&H3 pH to 7.55, all tanks feeding buckets. |
| 3/29 LTR | ✓ | 3,4,2,1 | | ✓ | ✓ | ✓ | | lowered H2&H3 to 7.45 pH |
| 3/30 LTR | ✓ | 3,2,4,1 | | ✓ | ✓ | ✓ | | lowered H2&H3 to 7.35 pH 10:30 AM |
| 3/31 MG | ✓ | 4,2,1,3 | ✓ | ✓ | ✓ | ✓ | | need alkalinity tomorrow |
| 4/1 LTR | ✓ | 3,1,2,4 | | ✓ | ✓ | ✓ | ✓ | |
| 4/2 LTR | ✓ | 1,2,4,3 | | ✓ | ✓ | ✓ | | |
| 4/3 LTR | ✓ | 3,1,4,2 | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 4/4 MG | ✓ | 1,3,4,2 | ✓ | ✓ | ✓ | ✓ | | mort bag 7 |
| 4/5 MG | ✓ | 2,3,1,4 | | ✓ | ✓ | ✓ | | overfilled seawater line on algae tank, kept pump @ 75 |
| 4/6 LTR | ✓ | 1,4,2,3 | | ✓ | ✓ | ✓ | | |
| 4/7 LTR | ✓ | 3,2,1,4 | | ✓ | ✓ | ✓ | | |
| 4/8 LTR | ✓ | 2,4,1,3 | ✓ | ✓ | ✓ | ✓ | | |
| 4/9 MG | ✓ | 1,3,2,4 | | ✓ | ✓ | ✓ | ✓ | |
| 4/10 LTR | ✓ | 4,1,3,2 | | ✓ | ✓ | ✓ | | |
| 4/11 LTR | ✓ | 2,3,4,1 | ✓ | ✓ | ✓ | ✓ | | |
| 4/12 LTR | ✓ | 4,3,1,2 | | ✓ | ✓ | ✓ | | |
| 4/13 LTR | ✓ | 4,2,3,1 | | ✓ | ✓ | ✓ | | temp increased to 10.5°C (50.9°F) |
| 4/14 LTR | ✓ | 4,1,2,3 | | ✓ | ✓ | ✓ | | temp up to 11°C (51.8°F) |
| 4/15 MG | ✓ | 2,1,3,4 | ✓ | ✓ | ✓ | ✓ | | " 11.5°C (52.7°F) |
| 4/16 MG | ✓ | 2,1,4,3 | | ✓ | ✓ | ✓ | | " 12.0°C (53.6°F) |
| 4/17 LTR | ✓ | 3,4,1,2 | | ✓ | ✓ | ✓ | | " 12.5°C (54.5°F) |
| 4/18 LTR | ✓ | 1,4,3,2 | ✓ | ✓ | ✓ | ✓ | | " 13.0°C (55.4°F) |
| 4/19 MG | ✓ | 1,2,3,4 | | ✓ | ✓ | ✓ | | " 13.5 (56.3°F) |
| 4/20 LTR | ✓ | 2,4,3,1 | | ✓ | ✓ | ✓ | | " 14°C (57.2°F) |
| 4/21 LTR | ✓ | 1,3,4,2 | | ✓ | ✓ | ✓ | | " 14.5°C (58.1°F) 50ml CA |
| 4/22 MG | ✓ | 1,2,3,4 | ✓ | ✓ | ✓ | ✓ | ✓ | " 15.0°C (59.0°F) 50ml |
| 4/23 RC | ✓ | 4,1,3,2 | | | ✓ | | | " 15.5 (59.9) 50ml |
| 4/24 RC | ✓ | 4,3,2,1 | ✓ | ✓ | ✓ | ✓ | | " 16.0 (60.8) 50ml |
| 4/25 LTR | ✓ | 2,4,1,3 | ✓ | ✓ | ✓ | ✓ | | " 16.5°C 1 mort bucket 10 |
| 4/26 LTR | ✓ | 1,4,3,2 | | ✓ | ✓ | ✓ | | " 17°C 50 ml paste |
| 4/27 LTR | ✓ | 3,4,2,1 | | ✓ | ✓ | ✓ | | " 17.5°C 50 ml paste |
| 4/28 MG | ✓ | 2,3,1,4 | | ✓ | ✓ | ✓ | ✓ | " 18°C 50ml paste |
| 4/29 LTR | ✓ | 3,1,2,4 | ✓ | ✓ | ✓ | ✓ | | 50ml paste |
| 4/30 LTR | ✓ | 3,4,1,2 | | ✓ | ✓ | ✓ | | 50ml paste |
| 5/1 MG | ✓ | 4,2,1,3 | | ✓ | ✓ | ✓ | | 50ml paste; 1/2 header |
| 5/2 LTR | ✓ | 4,2,3,1 | | ✓ | ✓ | ✓ | | siphon buckets, 50ml paste, clean feedlines |
| 5/3 MG | ✓ | 1,4,2,3 | | ✓ | ✓ | ✓ | | |

| Date / Initials | Feeding | Feedline change | Cleaning | Spec pH headers | Spec pH buckets | Temp/Salinity | Alkalinity Samples | Notes |
|-----------------|---------|-----------------|----------|-----------------|-----------------|---------------|--------------------|------------------------|
| 5/9 LTR | | 4,3,2,1 | ✓ | | | | | |
| 5/10 RC | ✓ | 3,4,2,1 | ✓ | | | | | |
| 5/11 LTR | ✓ | 3,2,4,1 | ✓ | ✓ | | | | 1 mort bucket llo |
| 5/12 LTR | ✓ | 4,2,1,3 | ✓ | | | | | |
| 5/13 LTR | ✓ | 3,1,2,4 | | ✓ | | | | |
| 5/14 LTR | ✓ | 1,2,4,3 | | | ✓ | | | + 60ml paste |
| 5/15 MG | ✓ | 3,1,4,2 | ✓ | | | | | + 60ml paste |
| 5/16 LTR | ✓ | 1,3,4,2 | ✓ | | ✓ | | | 2 mort bucket 5 + 60ml |
| 5/17 LTR | ✓ | 2,3,1,4 | | | | | | + 60ml paste |
| 5/18 MG | ✓ | 1,4,2,3 | ✓ | | | | | + 60ml paste |
| 5/19 mg/LTR | ✓ | 3,2,1,4 | ✓ | | | ✓ | | + 60ml paste |
| 5/20 | | 2,4,1,3 | | | | | | |
| 5/21 MC | ✓ | 1,3,2,4 | | | | | | + 60ml paste |
| 5/22 MG | ✓ | 4,1,3,2 | ✓ | | | | | + 60ml paste |
| 5/23 LTR | ✓ | 2,3,4,1 | ✓ | ✓ | | | | |
| 5/24 LTR | ✓ | 4,3,1,2 | ✓ | | | | | |
| | | 4,2,3,1 | | | | | | |
| | | 4,1,2,3 | | | | | | |
| | | 2,1,3,4 | | | | | | |
| | | 2,1,4,3 | | | | | | |
| | | 3,4,1,2 | | | | | | |
| | | 1,4,3,2 | | | | | | |
| | | 1,2,3,4 | | | | | | |
| | | 1,4,3,1 | | | | | | |
| | | 1,3,4,2 | | | | | | |
| | | 1,2,3,4 | | | | | | |
| | | 4,1,3,2 | | | | | | |
| | | 4,3,2,1 | | | | | | |
| | | 2,4,1,3 | | | | | | |
| | | 1,4,3,1 | | | | | | |
| | | 3,4,2,1 | | | | | | |
| | | 2,3,1,4 | | | | | | |
| | | 3,1,2,4 | | | | | | |
| | | 3,4,1,2 | | | | | | |
| | | 4,2,1,3 | | | | | | |
| | | 4,2,3,1 | | | | | | |
| | | 1,4,2,3 | | | | | | |

4 → ~~A,B~~
 B,D
 3 → A,C
 2 → F,H
 1 → E,G
 + 4 buckets per day.

1 2 3 4 5 6 7 8 9 10
 72 56 83 85 78 45 (50) (79) 58 59

| | | | | | | | | | |
|----------|--------|----|-------|---------|----|-----------------------|----------------------|----|-----|
| DATE | 3/9/22 | | | 3/12/22 | | | 3/14/22 ⁴ | | |
| TIME | 11:15 | | | | | | divulget | | |
| INITIALS | MG/RC | | | | | | | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 12.08 | | 28.38 | 10.20 | | 21.88 ^{20.8} | 10.32 | | |
| HEAD 2 | 12.08 | | 28.42 | 10.15 | | | 10.30 | | |
| HEAD 3 | 12.30 | | 28.45 | 10.45 | | | 10.58 | | |
| HEAD 4 | 11.98 | | 28.41 | 10.23 | | | 10.25 | | |
| REP 1 | 13.05 | | 28.48 | 10.33 | | | 10.36 | | |
| REP 2 | 13.03 | | 28.47 | 10.31 | | | 10.29 | | |
| REP 3 | 13.03 | | 28.47 | 10.48 | | | 10.72 | | |
| REP 4 | 12.89 | | 28.46 | 10.45 | | | 10.77 | | |
| REP 5 | 13.04 | | 28.48 | 10.34 | | | 10.40 | | |
| REP 6 | 12.89 | | 28.45 | 10.31 | | | 10.29 | | |
| REP 7 | 13.10 | | 28.49 | 10.33 | | | 10.38 | | |
| REP 8 | 13.13 | | 28.49 | 10.34 | | | 10.33 | | |
| REP 9 | 12.83 | | 28.46 | 10.27 | | | 10.28 | | |
| REP 10 | 13.07 | | 28.49 | 10.28 | | | 10.28 | | |
| REP 11 | 12.79 | | 28.44 | 10.45 | | | 10.72 | | |
| REP 12 | 12.90 | | 28.47 | 10.50 | | | 10.74 | | |
| REP 13 | 12.83 | | 28.45 | 10.31 | | | 10.30 | | |
| REP 14 | 12.76 | | 28.46 | 10.30 | | | 10.28 | | |
| REP 15 | 12.81 | | 28.46 | 10.30 | | | 10.30 | | |
| REP 16 | 12.83 | | 28.46 | 10.29 | | | 10.32 | | |

calibrated
divulget
-12-34
468.74
770.77

| | | | | | | | | | |
|-------|--|----------------|----------------------------------|-------|--|----------------|-------------------------------------|----------------------------|--|
| 1 21 | | original count | 442.0 post weight 12 animals (g) | 9 20 | | original count | 448.7 | 65 mL/min - 4g Ph dripping | |
| 2 21 | | | 447.0 | 10 22 | | | 419.2 new - 140 mL/min - no dropper | | |
| 3 20 | | | 528.7 | 11 18 | | | 449.0 | adjustment | |
| 4 21 | | | 497.4 | 12 18 | | | 528.5 | tank valve | |
| 5 21 | | | 502.1 | 13 21 | | | 540.3 | | |
| 6 21 | | | 454.1 | 14 21 | | | 457.5 | | |
| 7 22* | | | 452.2 | 15 19 | | | 545.0 | | |
| 8 21 | | | 487.1 | 16 19 | | | 553.3 | | |
| | | | *1 mort | | | | *weight of 12 animals in bag | | |

| DATE | 3/15 | | | 3/22 | | | 3/23 | | |
|----------|---------|------|-----------|---------|-------|-------|---------|-------|-----|
| TIME | 4:00 PM | | | 3:30 PM | | | 2:00 PM | | |
| INITIALS | LTR | | | LTR | | | LTR | | |
| | TEMP | PH | SAL (ppt) | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.10 | 7.54 | 29.82 | 10.21 | 30.17 | 10.02 | 7.95 | 30.32 | |
| HEAD 2 | 10.18 | 7.65 | 29.79 | 10.30 | 30.22 | 10.27 | 7.70 | 30.37 | |
| HEAD 3 | 10.33 | 7.64 | 29.87 | 10.13 | 30.12 | 10.26 | 7.72 | 30.37 | |
| HEAD 4 | 10.35 | 6.60 | 29.79 | 10.29 | 30.18 | 10.26 | 7.99 | 30.32 | |
| REP 1 | 10.06 | 6.88 | 29.74 | 10.61 | 30.22 | 10.57 | 7.92 | 30.55 | |
| REP 2 | 10.05 | 6.94 | 29.77 | 10.50 | 30.27 | 10.44 | 7.93 | 30.36 | |
| REP 3 | 10.45 | 7.56 | 29.93 | 10.60 | 30.31 | 10.57 | 7.92 | 30.37 | |
| REP 4 | 10.41 | 7.57 | 29.89 | 10.49 | 30.30 | 10.55 | 7.92 | 30.36 | |
| REP 5 | 10.46 | 7.60 | 29.90 | 10.66 | 30.35 | 10.70 | 7.90 | 30.38 | |
| REP 6 | 10.37 | 7.61 | 29.87 | 10.60 | 30.29 | 10.62 | 7.90 | 30.34 | |
| REP 7 | 10.47 | 7.52 | 29.90 | 10.62 | 30.30 | 10.67 | 7.92 | 30.36 | |
| REP 8 | 10.43 | 7.53 | 29.87 | 10.61 | 30.31 | 10.56 | 7.93 | 30.35 | |
| REP 9 | 10.03 | 6.94 | 29.70 | 10.57 | 30.22 | 10.53 | 7.76 | 29.76 | |
| REP 10 | 10.03 | 6.92 | 29.76 | 10.48 | 30.19 | 10.49 | 7.64 | 30.30 | |
| REP 11 | 10.41 | 7.58 | 29.33 | 10.46 | 30.28 | 10.45 | 7.85 | 30.34 | |
| REP 12 | 10.41 | 7.56 | 28.98 | 10.48 | 30.30 | 10.52 | 7.83 | 30.35 | |
| REP 13 | 10.31 | 7.59 | 29.88 | 10.69 | 30.32 | 10.54 | 7.88 | 30.56 | |
| REP 14 | 10.34 | 7.61 | 29.88 | 10.47 | 30.29 | 10.48 | 7.87 | 30.35 | |
| REP 15 | 10.40 | 7.53 | 29.88 | 10.56 | 30.33 | 10.49 | 7.87 | 30.36 | |
| REP 16 | 10.38 | 7.52 | 29.85 | 10.59 | 30.32 | 10.51 | 7.87 | 30.35 | |

b1 → b3 pH before
 b2 → b4 adjustments
 b9 → b10 (disabling
 b10 → b12 and refilling
 buckets)
 these tanks Temp + Sal
 at pH 6.9 for after.
 some time.

1 2 3 4
 7.78 7.91 7.95 7.81

| DATE | 3/24 | | | 3/25 | | | 3/28 | | |
|----------|-------|------|-------|-------|------|-------|------------------------|----------------------|-------------|
| TIME | 2:30 | | | 1:50 | | | 2:45 | | |
| INITIALS | LTR | | | LTR | | | MC/LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.10 | 7.91 | 30.23 | 10.20 | 7.84 | 30.09 | 10.16 | 7.97 | 29.71 |
| HEAD 2 | 9.97 | 7.67 | 30.30 | 10.19 | 7.64 | 30.24 | 10.18 | 7.81 | 29.73 |
| HEAD 3 | 10.18 | 7.69 | 30.33 | 10.22 | 7.45 | 30.26 | 10.21 | 7.82 | 29.61 |
| HEAD 4 | 10.26 | 7.97 | 30.32 | 10.12 | 7.89 | 30.24 | 10.05 | 7.96 | 29.78 |
| REP 1 | 10.45 | 7.96 | 30.26 | 10.36 | 7.88 | 30.24 | 10.40 | 7.80 ^{7.94} | 29.01 |
| REP 2 | 10.38 | 7.97 | 30.31 | 10.29 | 7.88 | 30.25 | 10.32 | 7.83 ^{7.92} | 29.59 29.80 |
| REP 3 | 10.49 | 7.96 | 30.34 | 10.26 | 7.87 | 30.26 | 10.33 | 7.76 ^{7.87} | 29.74 |
| REP 4 | 10.42 | 7.97 | 30.32 | 10.26 | 7.87 | 30.25 | 10.28 | 7.82 | 29.78 |
| REP 5 | 10.57 | 7.93 | 30.36 | 10.37 | 7.87 | 30.26 | 10.24 | 7.75 ^{7.79} | 29.81 |
| REP 6 | 10.56 | 7.91 | 30.33 | 10.4* | 7.87 | 30.28 | 10.22 | 7.75 ^{7.82} | 29.83 |
| REP 7 | 10.58 | 7.92 | 30.35 | 10.4* | 7.88 | 30.26 | 10.22 ^{10.54} | 7.85 | 29.86 29.80 |
| REP 8 | 10.46 | 7.93 | 30.30 | 10.4* | 7.89 | 30.27 | 10.22 | 7.89 | 29.86 |
| REP 9 | 10.46 | 7.95 | 30.21 | 10.5* | 7.92 | 30.20 | 10.51 | 7.92 | 29.46 |
| REP 10 | 10.39 | 7.98 | 30.30 | 10.3* | 7.92 | 30.22 | 10.36 | 7.91 | 29.70 |
| REP 11 | 10.39 | 7.97 | 30.32 | 10.3* | 7.91 | 30.25 | 10.40 | 7.83 | 29.77 |
| REP 12 | 10.39 | 7.97 | 30.34 | 10.3* | 7.93 | 30.22 | 10.43 | 7.80 | 29.82 |
| REP 13 | 10.51 | 7.96 | 30.33 | 10.4* | 7.94 | 30.24 | 10.37 | 7.79 | 29.79 |
| REP 14 | 10.45 | 7.90 | 30.34 | 10.4* | 7.94 | 30.24 | 10.38 | 7.80 | 29.76 |
| REP 15 | 10.42 | 7.92 | 30.33 | 10.4* | 7.91 | 30.26 | 10.40 | 7.92 | 29.82 |
| REP 16 | 10.43 | 7.93 | 30.31 | 10.4* | 7.92 | 30.23 | 10.41 | 7.93 | 29.76 |

bucket 12

• 1 clam per bucket for histo

1 mort.

* temps after
Reps recorded
on salinity
meter.

| DATE | 3/29 | | | 3/30 | | | 3/31 | | |
|----------|-------|------|-------|-------|------|-------|----------|------|-------|
| TIME | 9:15 | | | 1:15 | | | 11:00 am | | |
| INITIALS | LTR | | | LTR | | | MG | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.07 | 8.00 | 29.56 | 10.10 | 8.06 | 30.06 | 10.01 | 8.06 | 30.10 |
| HEAD 2 | 10.29 | 7.78 | 29.63 | 10.08 | 7.60 | 30.13 | 10.23 | 7.63 | 30.24 |
| HEAD 3 | 10.15 | 7.67 | 29.62 | 10.01 | 7.62 | 30.13 | 10.26 | 7.64 | 30.24 |
| HEAD 4 | 10.05 | 8.00 | 29.62 | 10.08 | 8.05 | 30.10 | 10.20 | 8.04 | 30.23 |
| REP 1 | 10.39 | 7.92 | 29.65 | 10.61 | 7.88 | 30.14 | 10.54 | 7.98 | 29.69 |
| REP 2 | 10.35 | 7.85 | 29.64 | 10.53 | 7.94 | 30.13 | 10.50 | 7.99 | 30.22 |
| REP 3 | 10.46 | 7.71 | 29.68 | 10.68 | 7.65 | 30.17 | 10.69 | 7.65 | 30.21 |
| REP 4 | 10.44 | 7.66 | 29.69 | 10.53 | 7.58 | 30.13 | 10.50 | 7.59 | 30.17 |
| REP 5 | 10.40 | 7.72 | 29.68 | 10.70 | 7.59 | 30.18 | 10.77 | 7.62 | 30.22 |
| REP 6 | 10.34 | 7.71 | 29.67 | 10.51 | 7.59 | 30.14 | 10.55 | 7.59 | 30.15 |
| REP 7 | 10.59 | 7.93 | 29.75 | 10.75 | 7.92 | 30.12 | 10.71 | 7.95 | 30.19 |
| REP 8 | 10.41 | 7.94 | 29.68 | 10.57 | 7.96 | 30.10 | 10.56 | 7.99 | 30.15 |
| REP 9 | 10.34 | 7.91 | 29.63 | 10.49 | 8.00 | 30.16 | 10.38 | 8.00 | 30.16 |
| REP 10 | 10.36 | 7.91 | 29.66 | 10.52 | 7.98 | 30.15 | 10.43 | 7.92 | 30.21 |
| REP 11 | 10.41 | 7.68 | 29.63 | 10.53 | 7.64 | 30.17 | 10.50 | 7.58 | 30.21 |
| REP 12 | 10.41 | 7.70 | 29.68 | 10.51 | 7.62 | 30.15 | 10.47 | 7.58 | 30.16 |
| REP 13 | 10.34 | 7.68 | 29.68 | 10.48 | 7.64 | 30.15 | 10.42 | 7.55 | 30.19 |
| REP 14 | 10.32 | 7.73 | 29.67 | 10.47 | 7.65 | 30.13 | 10.45 | 7.58 | 30.19 |
| REP 15 | 10.37 | 7.90 | 29.68 | 10.53 | 8.00 | 30.11 | 10.46 | 7.96 | 30.19 |
| REP 16 | 10.49 | 7.87 | 29.74 | 10.48 | 8.03 | 30.11 | 10.41 | 8.00 | 30.19 |

| | | | | |
|------------------------|----------|--------|--------|------|
| Reps pH | 1 in b14 | direct | in b14 | |
| before lowered to 7.45 | gaping | 1 | 7.36 | |
| Header after | | 2 | 7.35 | |
| | det | 3 | 7.77 | |
| | 1 | 7.36 | 4 | 7.89 |
| | 2 | 7.35 | | |
| | 3 | 7.75 | | |
| | 4 | 7.86 | | |

| DATE | 4/1 | | | 4/2 | | | 4/3 | | |
|----------|---------|------|-------|----------|------|-------|---------|------|-------|
| TIME | 2:00 PM | | | 12:00 PM | | | 2:00 PM | | |
| INITIALS | LJR | | | LJR | | | LJR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.11 | 8.05 | 30.21 | 10.21 | 8.03 | 30.23 | 10.09 | 8.08 | 30.24 |
| HEAD 2 | 10.09 | 7.64 | 30.16 | 10.24 | 7.66 | 30.28 | 10.07 | 7.64 | 30.30 |
| HEAD 3 | 10.08 | 7.62 | 30.21 | 10.33 | 7.62 | 30.31 | 10.35 | 7.64 | 30.32 |
| HEAD 4 | 10.05 | 8.05 | 30.21 | 10.00 | 8.02 | 30.26 | 10.12 | 8.07 | 30.29 |
| REP 1 | 10.60 | 8.01 | 30.25 | 10.62 | 7.98 | 30.30 | 10.56 | 8.01 | 30.36 |
| REP 2 | 10.50 | 8.01 | 30.23 | 10.58 | 7.98 | 30.25 | 10.58 | 8.01 | 30.35 |
| REP 3 | 10.67 | 7.62 | 30.25 | 10.69 | 7.63 | 30.32 | 10.62 | 7.65 | 30.34 |
| REP 4 | 10.52 | 7.60 | 30.23 | 10.59 | 7.61 | 30.30 | 10.56 | 7.62 | 30.32 |
| REP 5 | 10.66 | 7.61 | 30.26 | 10.71 | 7.63 | 30.32 | 10.62 | 7.62 | 30.34 |
| REP 6 | 10.53 | 7.61 | 30.24 | 10.60 | 7.63 | 30.30 | 10.53 | 7.68 | 30.33 |
| REP 7 | 10.77 | 8.00 | 30.21 | 10.84 | 7.96 | 30.32 | 10.59 | 8.02 | 30.34 |
| REP 8 | 10.59 | 7.98 | 30.19 | 10.67 | 7.97 | 30.25 | 10.62 | 8.01 | 30.33 |
| REP 9 | 10.47 | 7.99 | 30.15 | 10.46 | 7.98 | 30.31 | 10.47 | 8.02 | 30.27 |
| REP 10 | 10.43 | 7.99 | 30.23 | 10.45 | 7.96 | 30.25 | 10.42 | 8.04 | 30.32 |
| REP 11 | 10.52 | 7.60 | 30.20 | 10.53 | 7.60 | 30.32 | 10.54 | 7.61 | 30.29 |
| REP 12 | 10.60 | 7.59 | 30.23 | 10.50 | 7.61 | 30.30 | 10.49 | 7.61 | 30.32 |
| REP 13 | 10.54 | 7.60 | 30.24 | 10.54 | 7.65 | 30.30 | 10.45 | 7.62 | 30.33 |
| REP 14 | 10.46 | 7.59 | 30.22 | 10.51 | 7.64 | 30.31 | 10.45 | 7.64 | 30.33 |
| REP 15 | 10.60 | 7.99 | 30.22 | 10.55 | 7.95 | 30.30 | 10.52 | 8.03 | 30.32 |
| REP 16 | 10.55 | 8.00 | 30.23 | 10.48 | 7.97 | 30.31 | 10.41 | 8.04 | 30.31 |

| | | | | |
|-----------|------|---|------|------|
| Durafet 1 | 7.35 | 2 | 7.35 | 7.34 |
| 2 | 7.35 | 2 | 7.36 | 7.37 |
| 3 | 7.76 | 3 | 7.74 | 7.77 |
| 4 | 7.88 | 4 | 7.85 | 7.89 |

| | | | | | | | | | |
|----------|----------|------|-------|----------|------|-------|----------|------|-------|
| DATE | 4/4/22 | | | 4/5 | | | 4/6 | | |
| TIME | 10:30 am | | | 10:00 am | | | 10:00 AM | | |
| INITIALS | mg | | | mg | | | LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.25 | 8.10 | 30.15 | 9.96 | 8.04 | 30.31 | 10.30 | 8.07 | 30.31 |
| HEAD 2 | 10.17 | 7.67 | 30.34 | 10.27 | 7.66 | 30.28 | 10.00 | 7.59 | 30.39 |
| HEAD 3 | 10.25 | 7.43 | 30.36 | 10.18 | 7.61 | 30.35 | 10.08 | 7.57 | 30.40 |
| HEAD 4 | 10.17 | 8.08 | 30.36 | 10.25 | 8.03 | 30.35 | 10.22 | 8.06 | 30.37 |
| REP 1 | 10.35 | 8.06 | 30.19 | 10.40 | 7.89 | 30.36 | 10.47 | 7.98 | 30.40 |
| REP 2 | 10.39 | 8.04 | 30.34 | 10.42 | 7.93 | 30.37 | 10.60 | 7.95 | 30.40 |
| REP 3 | 10.41 | 7.63 | 30.34 | 10.46 | 7.60 | 30.39 | 10.59 | 7.57 | 30.41 |
| REP 4 | 10.39 | 7.62 | 30.34 | 10.35 | 7.54 | 30.37 | 10.45 | 7.55 | 30.39 |
| REP 5 | 10.41 | 7.59 | 30.34 | 10.44 | 7.56 | 30.40 | 10.48 | 7.57 | 30.42 |
| REP 6 | 10.32 | 7.59 | 30.35 | 10.35 | 7.56 | 30.39 | 10.40 | 7.56 | 30.38 |
| REP 7 | 10.38 | 8.03 | 30.36 | 10.42 | 7.95 | 30.40 | 10.54 | 7.98 | 30.38 |
| REP 8 | 10.35 | 8.04 | 30.35 | 10.41 | 7.97 | 30.39 | 10.50 | 7.98 | 30.39 |
| REP 9 | 10.29 | 8.06 | 30.32 | 10.31 | 7.97 | 30.39 | 10.40 | 7.92 | 30.39 |
| REP 10 | 10.26 | 8.07 | 30.35 | 10.30 | 7.97 | 30.38 | 10.36 | 7.92 | 30.37 |
| REP 11 | 10.28 | 7.63 | 30.37 | 10.39 | 7.60 | 30.40 | 10.49 | 7.55 | 30.37 |
| REP 12 | 10.32 | 7.62 | 30.34 | 10.36 | 7.57 | 30.38 | 10.45 | 7.54 | 30.39 |
| REP 13 | 10.31 | 7.61 | 30.35 | 10.35 | 7.60 | 30.38 | 10.37 | 7.56 | 30.39 |
| REP 14 | 10.30 | 7.61 | 30.36 | 10.30 | 7.59 | 30.22 | 10.35 | 7.56 | 30.40 |
| REP 15 | 10.30 | 8.03 | 30.35 | 10.35 | 7.99 | 30.37 | 10.42 | 7.91 | 30.42 |
| REP 16 | 10.28 | 8.06 | 30.35 | 10.31 | 8.00 | 30.36 | 10.35 | 7.93 | 30.41 |

| | | |
|---------|-------|--------|
| | draft | |
| draft 1 | 7.35 | 1 7.37 |
| 2 | 7.37 | 2 7.35 |
| 3 | 7.80 | 3 7.80 |
| 4 | 7.91 | 4 7.91 |
| | | |
| | | |
| | | |

| DATE | 4/7 | | | 4/8 | | | 4/9 | | |
|----------|---------|------|-------|----------|------|-------|-------|------|-------|
| TIME | 1:00 PM | | | 11:00 PM | | | | | |
| INITIALS | LTR | | | LTR | | | | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.00 | 8.04 | 30.30 | 10.02 | 8.12 | 30.38 | 10.25 | 8.03 | 30.32 |
| HEAD 2 | 10.32 | 7.65 | 30.30 | 10.30 | 7.65 | 30.39 | 10.41 | 7.66 | 30.35 |
| HEAD 3 | 10.14 | 7.62 | 30.33 | 10.16 | 7.63 | 30.39 | 10.11 | 7.63 | 30.35 |
| HEAD 4 | 10.10 | 8.03 | 30.26 | 10.11 | 8.13 | 30.37 | 10.21 | 8.04 | 30.30 |
| REP 1 | 10.76 | 7.99 | 30.34 | 10.57 | 8.08 | 30.40 | 10.52 | 7.93 | 30.41 |
| REP 2 | 10.71 | 7.97 | 30.31 | 10.53 | 8.09 | 30.41 | 10.43 | 7.98 | 30.40 |
| REP 3 | 10.71 | 7.61 | 30.38 | 10.77 | 7.57 | 30.43 | 10.56 | 7.61 | 30.42 |
| REP 4 | 10.78 | 7.61 | 30.41 | 10.47 | 7.61 | 30.39 | 10.46 | 7.65 | 30.38 |
| REP 5 | 10.56 | 7.60 | 30.37 | 10.58 | 7.61 | 30.43 | 10.48 | 7.57 | 30.41 |
| REP 6 | 10.65 | 7.98 | 30.39 | 10.50 | 7.62 | 30.41 | 10.40 | 7.58 | 30.40 |
| REP 7 | 10.78 | 7.63 | 30.36 | 10.71 | 8.07 | 30.44 | 10.48 | 7.98 | 30.40 |
| REP 8 | 10.72 | 7.97 | 30.33 | 10.54 | 8.07 | 30.41 | 10.42 | 7.96 | 30.39 |
| REP 9 | 10.56 | 7.98 | 30.36 | 10.47 | 8.08 | 30.41 | 10.41 | 7.95 | 30.42 |
| REP 10 | 10.59 | 7.97 | 30.35 | 10.48 | 8.05 | 30.42 | 10.41 | 7.96 | 30.41 |
| REP 11 | 10.62 | 7.61 | 30.32 | 10.60 | 7.63 | 30.39 | 10.41 | 7.59 | 30.39 |
| REP 12 | 10.61 | 7.61 | 30.37 | 10.46 | 7.61 | 30.40 | 10.39 | 7.57 | 30.40 |
| REP 13 | 10.57 | 7.61 | 30.38 | 10.44 | 7.61 | 30.40 | 10.39 | 7.58 | 30.40 |
| REP 14 | 10.54 | 7.62 | 30.37 | 10.45 | 7.62 | 30.43 | 10.40 | 7.58 | 30.40 |
| REP 15 | 10.58 | 7.98 | 30.38 | 10.51 | 8.05 | 30.41 | 10.38 | 7.95 | 30.39 |
| REP 16 | 10.50 | 7.97 | 30.36 | 10.46 | 8.05 | 30.42 | 10.40 | 7.98 | 30.40 |

| | | | | | | |
|----------|---|------|---|------|---|------|
| duration | 1 | 7.35 | 1 | 7.36 | 1 | 7.38 |
| | 2 | 7.35 | 2 | 7.35 | 2 | 7.37 |
| | 3 | 7.72 | 3 | 7.81 | 3 | 7.76 |
| | 4 | 7.84 | 4 | 7.91 | 4 | 7.86 |

| DATE | 4/10 | | | 4/11 | | | 4/11 | | |
|----------|-------|------|-------|-------|------|-------|-------|------|-------|
| TIME | 12:00 | | | 11:00 | | | 12:00 | | |
| INITIALS | LTR | | | LTR | | | LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 9.96 | 8.06 | 30.23 | 10.02 | 8.08 | 30.27 | 10.04 | 8.12 | 29.92 |
| HEAD 2 | 10.25 | 7.64 | 30.30 | 9.96 | 7.63 | 30.28 | 10.19 | 7.68 | 29.93 |
| HEAD 3 | 9.98 | 7.60 | 30.30 | 10.21 | 7.62 | 30.33 | 10.07 | 7.64 | 29.92 |
| HEAD 4 | 10.24 | 8.06 | 30.28 | 10.19 | 8.07 | 30.23 | 10.12 | 8.12 | 29.90 |
| REP 1 | 10.52 | 8.03 | 30.29 | 10.51 | 8.03 | 30.30 | 10.40 | 8.09 | 29.94 |
| REP 2 | 10.53 | 8.01 | 30.33 | 10.56 | 8.05 | 30.31 | 10.37 | 8.07 | 29.94 |
| REP 3 | 10.55 | 7.57 | 30.33 | 10.51 | 7.59 | 30.31 | 10.41 | 7.56 | 29.92 |
| REP 4 | 10.48 | 7.56 | 30.29 | 10.45 | 7.60 | 30.29 | 10.35 | 7.59 | 29.92 |
| REP 5 | 10.66 | 7.58 | 30.34 | 10.51 | 7.61 | 30.32 | 10.47 | 7.57 | 29.96 |
| REP 6 | 10.49 | 7.58 | 30.29 | 10.44 | 7.60 | 30.29 | 10.34 | 7.61 | 29.95 |
| REP 7 | 10.58 | 8.01 | 30.31 | 10.47 | 8.04 | 30.29 | 10.50 | 8.03 | 29.96 |
| REP 8 | 10.51 | 8.01 | 30.32 | 10.58 | 8.04 | 30.29 | 10.45 | 8.04 | 29.97 |
| REP 9 | 10.39 | 8.01 | 30.32 | 10.46 | 8.04 | 30.31 | 10.30 | 8.08 | 29.93 |
| REP 10 | 10.39 | 7.99 | 30.33 | 10.39 | 8.04 | 30.29 | 10.31 | 8.07 | 29.94 |
| REP 11 | 10.57 | 7.61 | 30.25 | 10.50 | 7.59 | 30.30 | 10.35 | 7.66 | 29.93 |
| REP 12 | 10.40 | 7.58 | 30.30 | 10.41 | 7.60 | 30.29 | 10.36 | 7.67 | 29.94 |
| REP 13 | 10.36 | 7.59 | 30.31 | 10.42 | 7.58 | 30.30 | 10.32 | 7.64 | 29.94 |
| REP 14 | 10.36 | 7.57 | 30.33 | 10.43 | 7.58 | 30.32 | 10.29 | 7.63 | 29.95 |
| REP 15 | 10.40 | 8.04 | 30.32 | 10.44 | 8.06 | 30.30 | 10.27 | 8.07 | 29.97 |
| REP 16 | 10.36 | 8.02 | 30.34 | 10.42 | 8.03 | 30.32 | 10.31 | 8.05 | 29.95 |

| | | | | | |
|---------|---|------|---|------|--------------|
| Lurafet | 1 | 7.36 | 1 | 7.36 | feed like 3 |
| | 2 | 7.35 | 2 | 7.37 | wasn't on |
| | 3 | 7.77 | 3 | 7.80 | turned up to |
| | 4 | 7.87 | 4 | 7.90 | 90 for next |
| | | | | | day |

| | | |
|----------|---|------|
| dura fet | 1 | 7.37 |
| | 2 | 7.35 |
| | 3 | 7.81 |
| | 4 | 7.90 |

| DATE | 4/13 | | | 4/14 | | | 4/15 | | |
|----------|-------|------|-------|-------|------|-------|---------|------|-------|
| TIME | 2:00 | | | 12:00 | | | 9:00 am | | |
| INITIALS | LTR | | | LTR | | | mg | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 10.26 | 8.06 | 30.22 | 10.9 | 8.10 | 30.27 | 10.94* | 8.05 | 30.42 |
| HEAD 2 | 10.00 | 7.60 | 30.22 | 10.7 | 7.65 | 30.29 | 11.02* | 7.67 | 30.42 |
| HEAD 3 | 10.10 | 7.62 | 30.21 | 10.7 | 7.64 | 30.31 | 11.07* | 7.64 | 30.43 |
| HEAD 4 | 10.21 | 8.06 | 30.21 | 10.8 | 8.11 | 30.29 | 11.01* | 8.04 | 30.42 |
| REP 1 | 10.40 | 7.99 | 30.28 | 10.9 | 8.04 | 30.32 | 11.2 | 7.93 | 30.33 |
| REP 2 | 10.37 | 8.02 | 30.27 | 10.9 | 8.05 | 30.28 | 11.2 | 7.96 | 30.44 |
| REP 3 | 10.44 | 7.58 | 30.27 | 10.85 | 7.58 | 30.30 | 11.2 | 7.62 | 30.39 |
| REP 4 | 10.36 | 7.57 | 30.27 | 10.77 | 7.60 | 30.30 | 11.2 | 7.59 | 30.37 |
| REP 5 | 10.42 | 7.59 | 30.28 | 10.81 | 7.61 | 30.30 | 11.2 | 7.60 | 30.37 |
| REP 6 | 10.36 | 7.60 | 30.27 | 10.77 | 7.60 | 30.30 | 11.2 | 7.61 | 30.37 |
| REP 7 | 10.45 | 8.02 | 30.28 | 10.9 | 8.04 | 30.31 | 11.2 | 7.97 | 30.37 |
| REP 8 | 10.40 | 8.00 | 30.26 | 10.9 | 8.04 | 30.30 | 11.2 | 7.98 | 30.38 |
| REP 9 | 10.33 | 8.01 | 30.25 | 10.8 | 8.07 | 30.31 | 11.09* | 8.02 | 30.39 |
| REP 10 | 10.33 | 8.02 | 30.27 | 10.8 | 8.06 | 30.31 | 11.13* | 8.00 | 30.39 |
| REP 11 | 10.35 | 7.57 | 30.27 | 10.75 | 7.64 | 30.28 | 11.2 | 7.67 | 30.38 |
| REP 12 | 10.37 | 7.56 | 30.29 | 10.8 | 7.62 | 30.28 | 11.2 | 7.61 | 30.38 |
| REP 13 | 10.32 | 7.56 | 30.27 | 10.8 | 7.65 | 30.30 | 11.2 | 7.64 | 30.39 |
| REP 14 | 10.31 | 7.57 | 30.27 | 10.8 | 7.63 | 30.30 | 11.2 | 7.60 | 30.38 |
| REP 15 | 10.34 | 8.03 | 30.26 | 10.8 | 8.04 | 30.31 | 11.1 | 7.96 | 30.38 |
| REP 16 | 10.33 | 8.04 | 30.28 | 10.8 | 8.01 | 30.31 | 11.1 | 8.00 | 30.38 |

duration 1 7.35

1. 7.34

temp taken before increasing temp

2 7.36

2. 7.35

* temp probe, the rest from pH meter

3 7.77

3 7.76

1 7.34

4 7.86

4. 7.88

2 7.35

single digit temps

3 7.76

from pH meter.

4 7.88

| | | | | | | | | | |
|----------|--------|------|-------|-------|------|-------|------|------|-------|
| DATE | 4/16 | | | 4/17 | | | 4/18 | | |
| TIME | 9:30am | | | 12:00 | | | 1:00 | | |
| INITIALS | MC | | | LTR | | | LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 11.6 | 8.07 | 30.45 | 12.3 | 8.07 | 30.38 | 12.7 | 8.09 | 30.45 |
| HEAD 2 | 11.4 | 7.68 | 30.42 | 11.9 | 7.63 | 30.45 | 12.3 | 7.62 | 30.44 |
| HEAD 3 | 11.4 | 7.65 | 30.44 | 11.9 | 7.62 | 30.45 | 12.5 | 7.64 | 30.46 |
| HEAD 4 | 11.4 | 8.06 | 30.44 | 12.1 | 8.06 | 30.45 | 12.6 | 8.08 | 30.44 |
| REP 1 | 11.6 | 7.94 | 30.41 | 12.0 | 7.96 | 30.48 | 12.5 | 7.98 | 30.48 |
| REP 2 | 11.6 | 7.97 | 30.41 | 12.0 | 7.97 | 30.48 | 12.5 | 7.99 | 30.47 |
| REP 3 | 11.6 | 7.62 | 30.41 | 12.1 | 7.61 | 30.46 | 12.6 | 7.58 | 30.49 |
| REP 4 | 11.6 | 7.59 | 30.41 | 12.1 | 7.62 | 30.47 | 12.6 | 7.59 | 30.49 |
| REP 5 | 11.6 | 7.57 | 30.41 | 12.1 | 7.59 | 30.48 | 12.6 | 7.58 | 30.49 |
| REP 6 | 11.5 | 7.60 | 30.40 | 12.0 | 7.59 | 30.47 | 12.5 | 7.58 | 30.49 |
| REP 7 | 11.6 | 7.93 | 30.43 | 12.1 | 7.96 | 30.49 | 12.5 | 7.98 | 30.47 |
| REP 8 | 11.6 | 7.96 | 30.42 | 12.1 | 7.95 | 30.48 | 12.5 | 8.01 | 30.46 |
| REP 9 | 11.5 | 7.98 | 30.42 | 12.0 | 7.97 | 30.45 | 12.5 | 8.00 | 30.47 |
| REP 10 | 11.5 | 7.96 | 30.43 | 12.0 | 7.94 | 30.47 | 12.5 | 7.98 | 30.48 |
| REP 11 | 11.6 | 7.62 | 30.41 | 12.1 | 7.60 | 30.49 | 12.6 | 7.58 | 30.49 |
| REP 12 | 11.6 | 7.58 | 30.41 | 12.0 | 7.59 | 30.49 | 12.6 | 7.59 | 30.48 |
| REP 13 | 11.5 | 7.61 | 30.41 | 12.0 | 7.61 | 30.47 | 12.5 | 7.60 | 30.47 |
| REP 14 | 11.5 | 7.60 | 30.41 | 12.0 | 7.64 | 30.47 | 12.5 | 7.57 | 30.49 |
| REP 15 | 11.6 | 7.90 | 30.44 | 12.2 | 7.97 | 30.45 | 12.5 | 8.01 | 30.50 |
| REP 16 | 11.6 | 7.98 | 30.42 | 12.1 | 7.99 | 30.47 | 12.5 | 8.00 | 30.49 |

depth 1 7.37

1. 7.37

1. 7.34

2 7.37

2. 7.38

2 7.36

3 7.74

3. 7.73

3. 7.76

4 7.86

4. 7.85

4. 7.87

adjusted relay

interval from

150 → 120

| | | | | | | | | | |
|----------|------|------|-------|---------|------|-------|-------|------|-------|
| DATE | 4/19 | | | 4/20 | | | 4/21 | | |
| TIME | 11am | | | 8:00 AM | | | 12:00 | | |
| INITIALS | MC | | | LTR | | | LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 12.9 | 7.86 | 30.50 | 12.9 | 7.79 | 30.64 | 14.0 | 7.86 | 30.48 |
| HEAD 2 | 12.9 | 7.43 | 30.51 | 13.4 | 7.41 | 30.48 | 14.1 | 7.44 | 30.52 |
| HEAD 3 | 12.9 | 7.41 | 30.51 | 10.9 | 7.37 | 30.41 | 14.2 | 7.45 | 30.53 |
| HEAD 4 | 13.0 | 7.84 | 30.52 | 10.8 | 7.71 | 30.41 | 14.1 | 7.85 | 30.52 |
| REP 1 | 12.9 | 7.80 | 30.49 | 13.3 | 7.56 | 30.54 | 13.9 | 7.80 | 30.52 |
| REP 2 | 12.9 | 7.83 | 30.50 | 13.3 | 7.61 | 30.53 | 13.9 | 7.80 | 30.53 |
| REP 3 | 12.9 | 7.43 | 30.50 | 13.5 | 7.20 | 30.53 | 13.9 | 7.41 | 30.52 |
| REP 4 | 12.9 | 7.38 | 30.51 | 13.5 | 7.20 | 30.52 | 13.9 | 7.40 | 30.53 |
| REP 5 | 12.9 | 7.41 | 30.49 | 13.3 | 7.33 | 30.51 | 13.9 | 7.38 | 30.51 |
| REP 6 | 12.9 | 7.40 | 30.50 | 13.3 | 7.33 | 30.51 | 13.9 | 7.39 | 30.52 |
| REP 7 | 12.9 | 7.81 | 30.49 | 13.4 | 7.69 | 30.51 | 13.9 | 7.80 | 30.52 |
| REP 8 | 12.9 | 7.81 | 30.50 | 13.4 | 7.69 | 30.50 | 13.9 | 7.78 | 30.52 |
| REP 9 | 12.8 | 7.83 | 30.52 | 13.3 | 7.60 | 30.45 | 13.8 | 7.81 | 30.56 |
| REP 10 | 12.8 | 7.82 | 30.51 | 13.3 | 7.55 | 30.51 | 13.8 | 7.78 | 30.54 |
| REP 11 | 12.9 | 7.44 | 30.51 | 13.4 | 7.24 | 30.50 | 13.9 | 7.38 | 30.51 |
| REP 12 | 12.9 | 7.42 | 30.51 | 13.3 | 7.22 | 30.49 | 13.9 | 7.40 | 30.53 |
| REP 13 | 12.9 | 7.41 | 30.49 | 13.2 | 7.32 | 30.52 | 13.9 | 7.41 | 30.52 |
| REP 14 | 12.9 | 7.42 | 30.51 | 13.3 | 7.31 | 30.50 | 13.9 | 7.43 | 30.53 |
| REP 15 | 12.9 | 7.80 | 30.48 | 13.4 | 7.70 | 30.50 | 13.9 | 7.81 | 30.54 |
| REP 16 | 12.9 | 7.83 | 30.51 | 13.4 | 7.69 | 30.51 | 13.9 | 7.81 | 30.53 |

*Vine pH probe

DuraFet 1 7.35

1. 7.38

(recalibrated pH probe)

2 7.35

2 7.37

DuraFet 1 7.36

3 7.67

3. 7.76

2 7.37

4 7.85

4 7.39

3 7.75

* see

4 7.88

note on

back.

NOTE: reminder
to Δ filter tomorrow

for
spec

7.35
7.38
7.69
7.82

| | | | | | | | | | |
|----------|---------|------|-------|---------|------|-------|---------|------|-------|
| DATE | 4/22/16 | | | 4/22/16 | | | 4/22/16 | | |
| TIME | 8:00 AM | | | 8:00 AM | | | 8:00 AM | | |
| INITIALS | JL | | | JL | | | JL | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 14.6 | 7.82 | 30.51 | 14.5 | 7.82 | 30.41 | 14.54 | 7.88 | 30.51 |
| HEAD 2 | 14.4 | 7.44 | 30.43 | 14.2 | 7.81 | 30.41 | 14.41 | 7.72 | 30.50 |
| HEAD 3 | 14.4 | 7.44 | 30.50 | 14.13 | 7.81 | 30.41 | 14.34 | 7.74 | 30.51 |
| HEAD 4 | 14.4 | 7.82 | 30.41 | 14.5 | 7.81 | 30.41 | 14.44 | 7.82 | 30.45 |
| REP 1 | 14.4 | 7.71 | 30.51 | 14.73 | 7.85 | 30.58 | 14.41 | 7.77 | 30.51 |
| REP 2 | 14.4 | 7.72 | 30.51 | 14.31 | 7.77 | 30.52 | 14.51 | 7.75 | 30.50 |
| REP 3 | 14.4 | 7.72 | 30.51 | 14.73 | 7.71 | 30.45 | 14.41 | 7.77 | 30.51 |
| REP 4 | 14.4 | 7.34 | 30.51 | 14.75 | 7.80 | 30.51 | 14.44 | 7.85 | 30.51 |
| REP 5 | 14.4 | 7.34 | 30.50 | 14.73 | 7.85 | 30.53 | 14.44 | 7.74 | 30.51 |
| REP 6 | 14.4 | 7.31 | 30.51 | 14.52 | 7.80 | 30.53 | 14.41 | 7.74 | 30.51 |
| REP 7 | 14.4 | 7.72 | 30.51 | 14.50 | 7.81 | 30.52 | 14.25 | 7.74 | 30.51 |
| REP 8 | 14.4 | 7.69 | 30.51 | 14.78 | 7.82 | 30.53 | 14.13 | 7.74 | 30.51 |
| REP 9 | 14.4 | 7.72 | 30.51 | 14.24 | 7.85 | 30.55 | 14.41 | 7.74 | 30.51 |
| REP 10 | 14.4 | 7.73 | 30.51 | 14.81 | 7.85 | 30.58 | 14.44 | 7.74 | 30.51 |
| REP 11 | 14.4 | 7.74 | 30.51 | 14.74 | 7.82 | 30.51 | 14.41 | 7.74 | 30.51 |
| REP 12 | 14.4 | 7.72 | 30.51 | 14.31 | 7.85 | 30.51 | 14.41 | 7.74 | 30.51 |
| REP 13 | 14.4 | 7.34 | 30.51 | 14.81 | 7.85 | 30.51 | 14.44 | 7.74 | 30.51 |
| REP 14 | 14.4 | 7.95 | 30.51 | 14.75 | 7.87 | 30.51 | 14.41 | 7.74 | 30.51 |
| REP 15 | 14.4 | 7.70 | 30.51 | 14.74 | 7.85 | 30.51 | 14.08 | 7.74 | 30.51 |
| REP 16 | 14.4 | 7.70 | 30.51 | 14.84 | 7.81 | 30.52 | 14.41 | 7.74 | 30.51 |

4/22/16

8:00 AM

4/22/16

8:00 AM

8:00 AM

8:00 AM

| | | | | | | | | | |
|----------|---------|------|-------|---------|------|-------|---------|------|-------|
| DATE | 5/21/16 | | | 5/21/16 | | | 5/21/16 | | |
| TIME | 1:00 PM | | | 1:00 PM | | | 1:00 PM | | |
| INITIALS | JTB | | | JTB | | | JTB | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 15.0 | 7.40 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| HEAD 2 | 15.1 | 7.40 | 30.54 | 15.0 | 7.37 | 30.53 | 15.0 | 7.37 | 30.54 |
| HEAD 3 | 15.1 | 7.39 | 30.54 | 15.0 | 7.37 | 30.52 | 15.0 | 7.37 | 30.54 |
| HEAD 4 | 15.1 | 7.39 | 30.54 | 15.0 | 7.37 | 30.56 | 15.0 | 7.37 | 30.54 |
| REP 1 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 2 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 3 | 15.0 | 7.40 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 4 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 5 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 6 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 7 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 8 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 9 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 10 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 11 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 12 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 13 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 14 | 15.0 | 7.45 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 15 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |
| REP 16 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 | 15.0 | 7.37 | 30.54 |

| | | |
|----|------|-------|
| 1 | 7.36 | 30.54 |
| 2 | 7.36 | 30.54 |
| 3 | 7.36 | 30.54 |
| 4 | 7.36 | 30.54 |
| 5 | 7.36 | 30.54 |
| 6 | 7.36 | 30.54 |
| 7 | 7.36 | 30.54 |
| 8 | 7.36 | 30.54 |
| 9 | 7.36 | 30.54 |
| 10 | 7.36 | 30.54 |
| 11 | 7.36 | 30.54 |
| 12 | 7.36 | 30.54 |
| 13 | 7.36 | 30.54 |
| 14 | 7.36 | 30.54 |
| 15 | 7.36 | 30.54 |
| 16 | 7.36 | 30.54 |

| | | | | | | | | | |
|----------|---------|------|-------|------|------|-------|-------|------|-------|
| DATE | 8/21/17 | | | 454 | | | 10/10 | | |
| TIME | 3:00 | | | 2:24 | | | 1:18 | | |
| INITIALS | J.C. | | | LAK | | | J.C. | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 17.4 | 8.03 | 30.57 | 17.3 | 7.97 | 30.41 | 17.4 | 7.97 | 30.41 |
| HEAD 2 | 17.4 | 7.95 | 30.5 | 17.2 | 7.91 | 30.24 | 17.2 | 7.81 | 30.19 |
| HEAD 3 | 17.4 | 7.94 | 30.49 | 17.5 | 7.88 | 30.51 | 17.5 | 7.84 | 30.42 |
| HEAD 4 | 17.4 | 8.01 | 30.44 | 17.2 | 7.9 | 30.28 | 17.2 | 7.81 | 30.14 |
| REP 1 | 17.1 | 7.94 | 30.4 | 17.7 | 7.92 | 30.62 | 17.4 | 7.88 | 30.4 |
| REP 2 | 17.1 | 7.9 | 30.4 | 17.7 | 7.92 | 30.64 | 17.5 | 7.93 | 30.74 |
| REP 3 | 17.2 | 7.87 | 30.47 | 17.3 | 7.81 | 30.47 | 17.7 | 7.55 | 30.65 |
| REP 4 | 17.2 | 7.87 | 30.47 | 17.2 | 7.81 | 30.62 | 17.2 | 7.57 | 30.62 |
| REP 5 | 17.2 | 7.87 | 30.47 | 17.2 | 7.81 | 30.62 | 17.2 | 7.57 | 30.62 |
| REP 6 | 17.2 | 7.87 | 30.47 | 17.2 | 7.81 | 30.62 | 17.2 | 7.57 | 30.62 |
| REP 7 | 17.1 | 7.90 | 30.59 | 17.4 | 7.86 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 8 | 17.1 | 7.90 | 30.59 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 9 | 17.1 | 7.90 | 30.59 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 10 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 11 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 12 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 13 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 14 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 15 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |
| REP 16 | 17.2 | 7.91 | 30.64 | 17.2 | 7.81 | 30.62 | 17.2 | 7.81 | 30.62 |

| | | | | | | | | |
|------|------|-------|------|------|-------|------|------|-------|
| 17.4 | 7.95 | 30.57 | 17.3 | 7.97 | 30.41 | 17.4 | 7.97 | 30.41 |
| 17.4 | 7.95 | 30.5 | 17.2 | 7.91 | 30.24 | 17.2 | 7.81 | 30.19 |
| 17.4 | 7.94 | 30.49 | 17.5 | 7.88 | 30.51 | 17.5 | 7.84 | 30.42 |
| 17.4 | 8.01 | 30.44 | 17.2 | 7.9 | 30.28 | 17.2 | 7.81 | 30.14 |

17.4 7.95 30.57
 17.3 7.97 30.41
 17.4 7.97 30.41
 17.2 7.81 30.19
 17.5 7.84 30.42
 17.2 7.81 30.14

17.4 7.95 30.57
 17.3 7.97 30.41
 17.4 7.97 30.41
 17.2 7.81 30.19
 17.5 7.84 30.42
 17.2 7.81 30.14

| | | | | | | | | | |
|----------|---------|------|------|-----------|------|------|---------|------|------|
| DATE | 4/11/16 | | | 5/11/2016 | | | 5/18/16 | | |
| TIME | 7:00 | | | 7:00 | | | 7:00 | | |
| INITIALS | • J.S. | | | M.S. | | | M.S. | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| HEAD 2 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| HEAD 3 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| HEAD 4 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 1 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 2 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 3 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 4 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 5 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 7 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 8 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 9 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 10 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 11 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 12 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 13 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 14 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 15 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |
| REP 16 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 | 12.4 | 7.15 | 30.6 |

| | | | | | |
|------------|------|---|------|---|------|
| Area 6 + 1 | 7.15 | 1 | 7.15 | 1 | 7.15 |
| 2 | 7.15 | 2 | 7.15 | 2 | 7.15 |
| 3 | 7.15 | 3 | 7.15 | 3 | 7.15 |
| 4 | 7.15 | 4 | 7.15 | 4 | 7.15 |

| | | | | | | | | | |
|----------|------|------|-------|-------|------|-------|-------|------|-------|
| DATE | 8/11 | | | 10/15 | | | 10/16 | | |
| TIME | 2:00 | | | 2:00 | | | 10:00 | | |
| INITIALS | LTK | | | LTK | | | LTK | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | 17.3 | 7.42 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| HEAD 2 | 17.3 | 7.42 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| HEAD 3 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| HEAD 4 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 1 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 2 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 3 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 4 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 5 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 6 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 7 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 8 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 9 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 10 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 11 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 12 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 13 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 14 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 15 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |
| REP 16 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 | 17.3 | 7.43 | 30.62 |

| | | | |
|---|------|---|------|
| 1 | 7.43 | 1 | 7.43 |
| 2 | 7.43 | 2 | 7.43 |
| 3 | 7.43 | 3 | 7.43 |
| 4 | 7.43 | 4 | 7.43 |
| | | | |
| | | | |
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|----------|------|------|-------|------|------|-------|-------|------|-------|
| DATE | 5/7 | | | 5/8 | | | 5/14 | | |
| TIME | 1:PM | | | 2pm | | | 12:40 | | |
| INITIALS | LTR | | | MG | | | LTR | | |
| | TEMP | PH | SAL | TEMP | PH | SAL | TEMP | PH | SAL |
| HEAD 1 | | | | | | | 17.8 | 8.05 | 30.65 |
| HEAD 2 | | | | | | | 18.1 | 7.63 | 30.66 |
| HEAD 3 | | | | | | | 18.0 | 7.61 | 30.62 |
| HEAD 4 | | | | | | | 17.9 | 8.04 | 30.65 |
| REP 1 | 16.4 | 7.73 | 30.56 | 17.7 | 7.91 | 30.63 | 18.0 | 8.00 | 30.68 |
| REP 2 | 16.5 | 7.82 | 30.64 | 17.8 | 8.01 | 30.63 | 18.0 | 7.99 | 30.70 |
| REP 3 | 16.8 | 7.38 | 30.69 | 17.8 | 7.62 | 30.63 | 18.0 | 7.59 | 30.70 |
| REP 4 | 16.9 | 7.39 | 30.66 | 17.8 | 7.54 | 30.62 | 18.0 | 7.61 | 30.70 |
| REP 5 | 16.9 | 7.44 | 30.63 | 17.9 | 7.56 | 30.61 | 18.0 | 7.56 | 30.71 |
| REP 6 | 16.8 | 7.46 | 30.58 | 17.9 | 7.57 | 30.60 | 18.0 | 7.59 | 30.70 |
| REP 7 | 16.4 | 7.82 | 30.63 | 17.9 | 8.0 | 30.58 | 17.9 | 8.00 | 30.68 |
| REP 8 | 16.4 | 7.77 | 30.62 | 17.9 | 8.01 | 30.59 | 17.9 | 7.99 | 30.70 |
| REP 9 | 16.1 | 7.83 | 30.62 | 17.6 | 7.98 | 30.65 | 17.9 | 8.00 | 30.69 |
| REP 10 | 16.3 | 7.80 | 30.65 | 17.7 | 8.01 | 30.62 | 17.9 | 7.99 | 30.71 |
| REP 11 | 17.0 | 7.45 | 30.79 | 17.7 | 7.54 | 30.63 | 17.9 | 7.60 | 30.71 |
| REP 12 | 16.9 | 7.44 | 30.67 | 17.8 | 7.57 | 30.62 | 18.0 | 7.62 | 30.70 |
| REP 13 | 17.0 | 7.52 | 30.68 | 17.8 | 7.54 | 30.62 | 18.0 | 7.62 | 30.69 |
| REP 14 | 17.0 | 7.52 | 30.64 | 17.9 | 7.55 | 30.62 | 18.0 | 7.64 | 30.71 |
| REP 15 | 16.3 | 7.80 | 30.65 | 17.9 | 7.98 | 30.59 | 17.9 | 8.02 | 30.69 |
| REP 16 | 16.2 | 7.83 | 30.61 | 17.9 | 8.03 | 30.59 | 17.9 | 8.01 | 30.70 |

* main seawater pump 1 7.36
 off when arrived 2 7.37
 - breaker 12 flipped 3 7.78
 valves taken after 4 7.90
 30 min later
 temps in buckets
 down to 15.7-15.8
 pH down by ~0.2