

GUO LAB DODGEN B021/121 WEEKLY SWIPES & SURVEYS

Revised 7/9/2019

| Week # | 5 | Dates: | 1/31/2021-2/06/2021 | | Counted On | 2/1/2021 |
|---|-----------------------------------|------------------------------------|------------------------------|--|---|----------|
| INSTRUMENT USED: Quantasart (Serial# 073396) | | | CONTROL FACTOR: | | 1.40E-06 | |
| CHANNEL ENERGY RANGE (keV) | | | CH A: 4-200 | CH B: 200-2000 | CH C: 4-2000 | |
| COUNTING TIME: 5 Min. | | uCi/swipe = CPM:C * Control Factor | | uCi/cm ² = CPM:C * Control Factor / 100 | | |
| Limit of quantification (LOQ)= | | | 8.79E-08 uCi/cm ² | | QUANTIFICATION BELOW REG GUIDE 8.23 LIMITS OK | |
| Swipe # | LOCATION: ROOM # & AREA/OBJECT | GROSS CPM CHANNEL C | uCi/swipe | uCi/cm ² | NOTE | |
| 1. | BACKGROUND 1 | 31 | ***** | ***** | | |
| 2. | BACKGROUND 2 | 28 | ***** | ***** | | |
| 3. | BACKGROUND 3 | 27 | ***** | ***** | | |
| 4. | BACKGROUND 4 | 27 | ***** | ***** | | |
| 5. | BACKGROUND 5 | 26 | ***** | ***** | | |
| 6. | BACKGROUND 6 | 29 | ***** | ***** | | |
| 7. | B021 ELEVATOR ENTRANCE | 32 | M | M | | |
| 8. | B021 FENCED GATE | 28 | M | M | | |
| 9. | B021 RAM SAFE | 28 | M | M | | |
| 10. | B021 EAST FLOOR | 27 | M | M | | |
| 11. | B021 NORTH BENCH TOP | 27 | M | M | | |
| 12. | B021 WEST LAB FLOOR | 26 | M | M | | |
| 13. | B021 WORK PLATFORM | 31 | M | M | | |
| 14. | B021 CALORIMETER | 26 | M | M | | |
| 15. | B021 COMPUTERS | 31 | M | M | | |
| 16. | B021 DSC/TGA | 33 | M | M | | |
| 17. | B021 SOUTH BENCH TOP | 25 | M | M | | |
| 18. | 121 DOORWAY | 35 | 9.80E-06 | 9.80E-08 | | |
| 19. | 121 GLOVE BOX- FLOOR | 25 | M | M | | |
| 20. | 121 GLOVE BOX | 24 | M | M | | |
| 21. | 121 WEST BENCH TOP | 23 | M | M | | |
| 22. | 121 CENTER OF LAB | 28 | M | M | | |
| 23. | 122 EAST BENCH TOP | 29 | M | M | | |
| | | | | | | |
| ³⁶ CI SOURCE 09/14/1971 | | | 50057 | | ***** | ***** |
| | | | 100.93% | CALIBRATION CHECK OK? | | YES |
| Notes(s): M = below limit of quantification on the LSC. The limit of quantification is checked against lowest allowable contamination limit of 1 x 10 ⁻⁶ uCi/cm ² . | | | | | | |
| SURVEY PREPARED BY: B. Tanner | | | | REVIEWED BY: M. Heine | | |
| SIGN/DATE: <i>B. Tanner</i> 2/16/2021 | | | | SIGN/DATE: <i>M. Heine</i> 2/17/2021 | | |

Assay Definition-

Assay Description:

Assay Type: CPM

Report Name: Report1

Output Data Path: C:\Packard\Tricarb\Results\CSE\Reactor Weekly\20210201_0840

Raw Results Path: C:\Packard\Tricarb\Results\CSE\Reactor Weekly\20210201_0840\20210201_0840.results

Assay File Name: C:\Packard\TriCarb\Assays\Reactor Weekly.lsa

Count Conditions-

Nuclide: Reactor

Quench Indicator: tSIE/AEC

External Std Terminator (sec): 0.5 2s%

Pre-Count Delay (min): 0.00

Quench Set: n/a

Count Time (min): 5.00

Count Mode: Normal

Assay Count Cycles: 1

Repeat Sample Count: 1

#Vials/Sample: 1

Calculate % Reference: Off

Background Subtract: Off

Low CPM Threshold: Off

2 Sigma % Terminator: Off

| Regions | LL | UL |
|---------|-------|--------|
| A | 4.0 | 200.0 |
| B | 200.0 | 2000.0 |
| C | 4.0 | 2000.0 |

Count Corrections-

Static Controller: On

Luminescence Correction: Off

Colored Samples: n/a

Heterogeneity Monitor: n/a

Coincidence Time (nsec): 18

Delay Before Burst (nsec): 75

Half Life-

Half Life Correction: Off

| Regions | Half Life | Units | Reference Date | Reference Time |
|---------|-----------|-------|----------------|----------------|
| A | | | | |
| B | | | | |
| C | | | | |

Cycle 1 Results

| P# | DATE | TIME | S# | Count Time | CPMA | CPMB | CPMC | SIS | MESSAGES |
|----|----------|------------|----|------------|------|------|------|--------|----------|
| 1 | 2/1/2021 | 8:42:07 AM | 1 | 5.00 | 24 | 7 | 31 | 238.93 | |
| 1 | 2/1/2021 | 8:48:26 AM | 2 | 5.00 | 23 | 4 | 28 | 179.04 | |
| 1 | 2/1/2021 | 8:54:54 AM | 3 | 5.00 | 22 | 5 | 27 | 234.63 | |
| 1 | 2/1/2021 | 9:01:15 AM | 4 | 5.00 | 23 | 5 | 27 | 189.15 | |
| 1 | 2/1/2021 | 9:07:38 AM | 5 | 5.00 | 21 | 4 | 26 | 244.63 | |
| 1 | 2/1/2021 | 9:13:59 AM | 6 | 5.00 | 25 | 5 | 29 | 226.81 | |
| 1 | 2/1/2021 | 9:20:16 AM | 7 | 5.00 | 26 | 6 | 32 | 199.58 | |
| 1 | 2/1/2021 | 9:26:40 AM | 8 | 5.00 | 22 | 6 | 28 | 250.57 | |
| 1 | 2/1/2021 | 9:32:59 AM | 9 | 5.00 | 22 | 6 | 28 | 291.18 | |
| 1 | 2/1/2021 | 9:39:22 AM | 10 | 5.00 | 23 | 4 | 27 | 210.04 | |
| 1 | 2/1/2021 | 9:45:43 AM | 11 | 5.00 | 22 | 5 | 27 | 210.88 | |
| 1 | 2/1/2021 | 9:52:06 AM | 12 | 5.00 | 21 | 5 | 26 | 266.71 | |

Protocol# 1 - Reactor Weekly.lsa

User: CSE

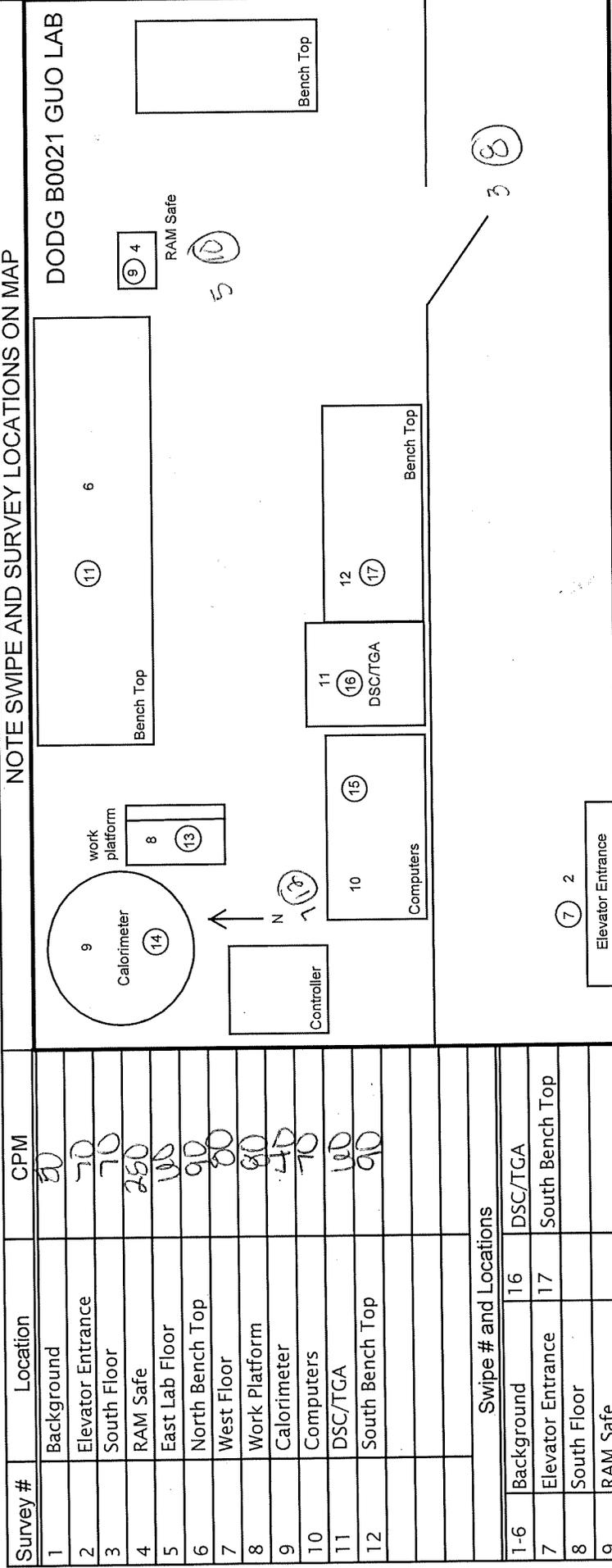
| | | | | | | | | |
|---|----------|-------------|----|------|-------|-------|-------|---------|
| 1 | 2/1/2021 | 9:58:27 AM | 13 | 5.00 | 25 | 6 | 31 | 243.79 |
| 1 | 2/1/2021 | 10:04:51 AM | 14 | 5.00 | 22 | 4 | 26 | 224.25 |
| 1 | 2/1/2021 | 10:11:12 AM | 15 | 5.00 | 26 | 5 | 31 | 242.08 |
| 1 | 2/1/2021 | 10:17:29 AM | 16 | 5.00 | 28 | 4 | 33 | 191.10 |
| 1 | 2/1/2021 | 10:23:51 AM | 17 | 5.00 | 22 | 3 | 25 | 207.73 |
| 1 | 2/1/2021 | 10:30:19 AM | 18 | 5.00 | 31 | 5 | 35 | 215.63 |
| 1 | 2/1/2021 | 10:36:46 AM | 19 | 5.00 | 20 | 5 | 25 | 292.96 |
| 1 | 2/1/2021 | 10:43:10 AM | 20 | 5.00 | 18 | 6 | 24 | 249.89 |
| 1 | 2/1/2021 | 10:49:35 AM | 21 | 5.00 | 20 | 3 | 23 | 182.99 |
| 1 | 2/1/2021 | 10:55:58 AM | 22 | 5.00 | 22 | 6 | 28 | 249.46 |
| 1 | 2/1/2021 | 11:02:14 AM | 23 | 5.00 | 24 | 5 | 29 | 261.37 |
| 1 | 2/1/2021 | 11:07:55 AM | 24 | 5.00 | 14535 | 35522 | 50057 | 1014.11 |

LABORATORY SURVEY

Radiation Safety Office
 Washington State University
 Pullman, WA 99164-1302
 (509) 335 8916

| | | | | | |
|---|---------------------|----------------|--|----------------------|----------------------------------|
| Building Dodgen Research Facility | Room B0021 - GUO | Lab Class D | Survey Instrument GM Detector Model 3 | Serial No. 58680 | Radiation Detected Gamma |
| Authorized User Xiaofeng Guo | Date 02/01/2021 | Time 0811 | Swipe Instrument Quantasmat | Serial No. 073396 | Radiation Detected Beta/Gamma |
| Reactor Status (Check One) ON <input type="checkbox"/> OFF <input checked="" type="checkbox"/> | | | | | |

LSC Printout Date 2/1/21



| Survey # | Location | CPM | Swiped By: | Date: | Notes |
|----------|-------------------|-----|------------|------------|-------|
| 1-6 | Background | 50 | RB | 02/01/2021 | |
| 7 | Elevator Entrance | 70 | RB | 02/01/2021 | |
| 8 | South Floor | 70 | | | |
| 9 | RAM Safe | 250 | | | |
| 10 | East Lab Floor | 100 | | | |
| 11 | North Bench Top | 90 | | | |
| 12 | West Floor | 80 | | | |
| 13 | Work Platform | 80 | | | |
| 14 | Calorimeter | 40 | | | |
| 15 | Computers | 70 | | | |
| 16 | Background | 100 | | | |
| 17 | Elevator Entrance | 90 | | | |
| 18 | South Bench Top | | | | |
| 19 | South Floor | | | | |
| 20 | RAM Safe | | | | |
| 21 | East Lab Floor | | | | |
| 22 | North Bench Top | | | | |
| 23 | West Lab Floor | | | | |
| 24 | Work Platform | | | | |
| 25 | Calorimeter | | | | |
| 26 | Computers | | | | |

Circled numbers on map indicate a swipe area of 100 square cm. Numbers not circled indicate a survey location.

