



DEPARTMENT OF THE AIR FORCE
36th MEDICAL OPERATIONS SQUADRON (PACAF)
UNIT 14010 (Andersen AFB, Guam)
APO AP 96543-4010

26 Apr 12

MEMORANDUM FOR 554 RHS/DES

FROM: 36 MDOS/SGOAB

SUBJECT: Radiation Survey Results, 554 Red Horse, North West Field (NWF)

1. INTRO: On 2 Apr 12, SSgt Joshua Suggs of Bioenvironmental Engineering (BE) conducted an exposure assessment to characterize the radiation dose received by 554 RHS personnel performing soil density tests using the Troxler gauge. This assessment will be used to determine if 554 RHS Troxler gauge operators need to be monitored under the Thermoluminescent Dosimetry Program (TLD).

SSgt Suggs accompanied TSgt Figueroa (554 RHS Troxler gauge operator) to perform a soil density assessment for a parking lot at Naval Base Guam. The Troxler gauge was transported from its storage facility at NW Field, Andersen AFB to Naval Base Guam in a GOV. The gauge was properly secured in the back of the pickup and DoT required documents were on-hand. Both members wore electronic personal dosimeters (EPDs) to measure radiation dose received and SSgt Suggs also took radiation measurements using a 451P.

2. SURVEY: TSgt Figueroa performed density tests at six separate locations across the parking lot. At each location, he took measurements at three different depths (2, 4, and 6 inches). At each test location, TSgt Figueroa would set the source rod at the initial depth and then retreat 15 feet away while the Troxler took the measurement. After the measurement, TSgt Figueroa would walk back to the gauge to record the reading and reset the source rod to the next depth. This process was repeated until all three measurements were collected and then the gauge was moved to the next test location. TSgt Figueroa was in close proximity to the Troxler gauge while the source rod was exposed for approximately 6 minutes at each test location and 36 minutes for the duration of the parking lot assessment.

SSgt Suggs used a Fluke radiation level meter (Model Victoreen 451P, Serial Number 1862 calibrated on 6 Jan 12) to perform dose rate measurements. SSgt Suggs took radiation measurements at each of the source rod depths and measurements were taken at 6 inches, 1 meter and 15 feet from the Troxler gauge while the source rod was exposed.

3. RESULTS: Dose and dose rate results are summarized in the tables below:

TABLE 1

Fluke 451P			
Troxler Depth	6" Away mR/h	1 Meter away mR/h	15' Away*
2"	8.1	2	BG
4"	7.4	0.380	BG
6"	2.4	0.160	BG

*Background (BG) readings were 8 u

TABLE 2

EPD Mk 2.5 (mrem)				
Personnel	HP10 Total	HP7 Total	HP10 Peak	HP7 Peak
TSgt Figueroa	0.325	0.194	0.8	1
SSgt Suggs	0.252	0.203	0.6	1

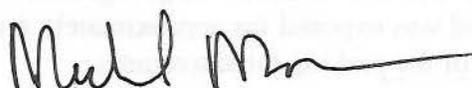
4. CONTROLS:

- a. ENGINEERING- N/A
- b. ADMINISTRATIVE- ALARA Training
- c. PPE- N/A

5. DISCUSSION: 554 RHS doesn't use the Troxler gauge on a regular basis. BE used a worst case scenario of one exposure per week to estimate the potential exposure. Should RHS personnel perform density tests once per week, they would receive a dose of 17 mrem per year. IAW AFI 48-148 *Ionizing Radiation Protection*, personnel would be required to be enrolled in the TLD program if measured or potential exposures exceed 1 mSv (100 mrem) in a year.

6. CONCLUSION: Potential exposures for 554 RHS personnel are well below 100 mrem per year; therefore 554 RHS will not be enrolled in the TLD program. Contact BE immediately if there is a significant change in workload or changes in operating procedures.

7. If you have any questions or concerns about this letter please contact us at 366-7166.



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