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Radiological Contamination at Santa Susana Field Laboratory

Recent NBC4 I-Team reports[1] emphasized radiological (as distinct from chemical) contamination at SSFL. The stories spoke of hot spots and high levels of radiological contamination. Relying on claims of long-term activists, reporters noted that EPA found hundreds of exceedances, some of them thousands of times above background level, using phrases such as "widespread release" and "dangerous."

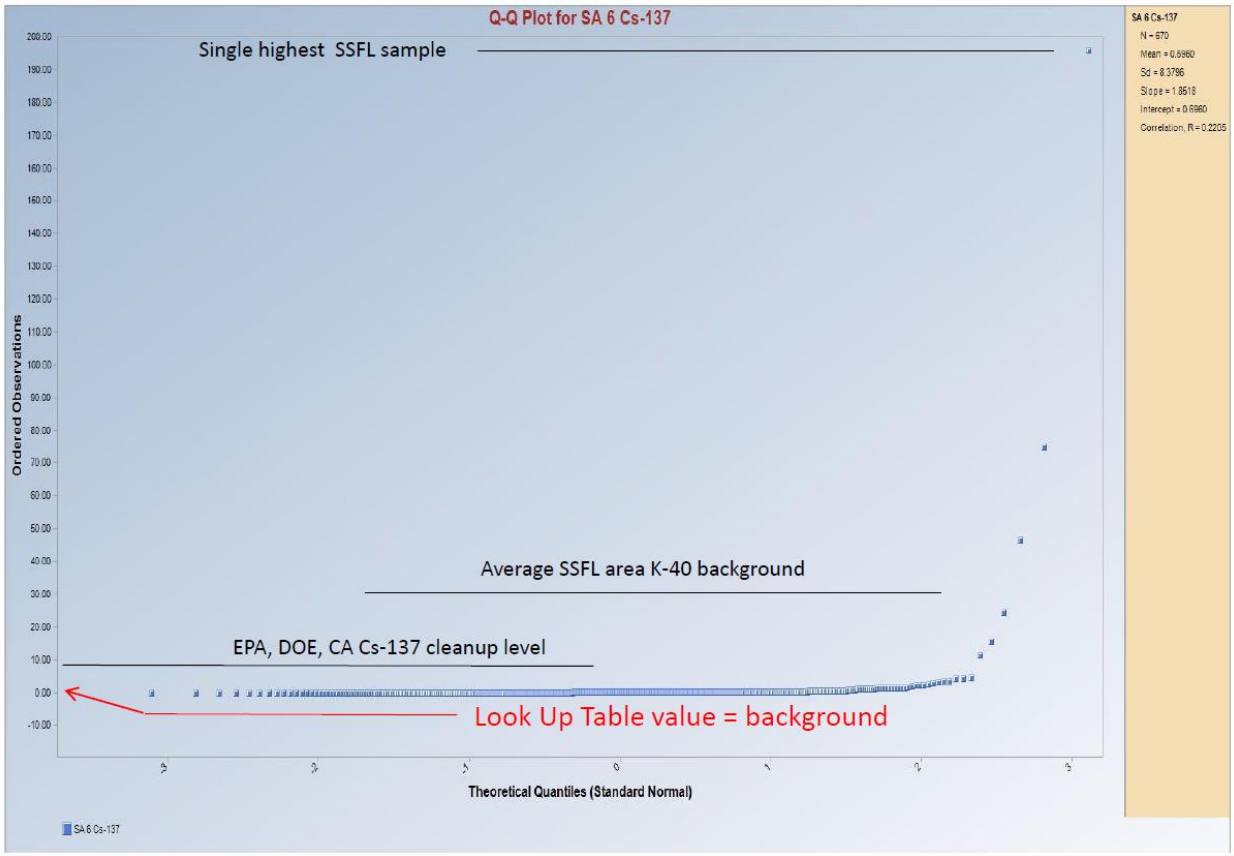
Fortunately for all of us, Channel 4's statements on radiological contamination are gross exaggerations, as demonstrated by the Environmental Protection Agency's actual data.

The cesium-137 data for Subarea 6 of Area IV, shown in the attached figure, is representative of Area IV radiological contamination. The area contains the highest levels of cesium-137, and includes the single location on the site where there was a concentration of 196 pCi/g, or about one thousand times background level. The next highest level, also in Subarea 6, was 74.9 pCi/g. Of all 670 samples EPA took, 79 were above background, but only six of them were above the level of prior cleanup efforts, namely the suburban residential cleanup level of 6 to 9 pCi/g. These six locations would be remediated under any cleanup scenario. Notably, when contaminants in those six locations are removed, the average concentration of cesium-137 remaining in the entire Subarea 6 will be about thirty percent lower than background.

Note that the safe-for-suburban-residential level is more than 30 times higher than background level. Then note that among the 79 exceedances, 53 are one to ten times background level. Furthermore, there is credible documentation that, in built-up areas such as SSFL, cesium-137 background is from three to twenty times higher than it is in undeveloped areas, as were used for the determination of the SSFL background level. Thus, even these exceedances are likely to be fallout from nuclear testing around the world.

Only about 12 sample locations in all of Area IV were found above suburban residential criteria. The attached figure shows that the high isolated data points to the right appear not to be part of the normal distribution of the rest of the data. Additionally, it is significant that the concentration of naturally occurring potassium-40 is about 30 pCi/g, and it emits the same kinds of radiation as cesium-137. It is found throughout the SSFL in concentrations much greater than all but a few of the exceedances noted by EPA. The total natural reactivity in each gram of SSFL soil exceeds 50 pCi/g, and includes potassium-40, uranium and thorium, and all of their daughter products. The amount of radioactivity to be removed from the areas of exceedance under any cleanup scenario is an infinitesimal portion of the amount of radioactivity that will remain after cleanup. It is difficult to understand how, as some still believe , removal of a quantity of radioactive material that will have no measurable effect on the dose coming from the Santa Susana Field Laboratory can be beneficial to anyone's health.

Subarea 6 Cs-137



[1] http://data.nbcstations.com/national/KNBC/la-nuclear-secret/