Critique
of the
California Department of Public Health
Work Plan
for a Partial Gamma Survey
of Parcel A-1
Hunters Point Naval Shipyard

by
Daniel Hirsch
Taylor Altenbern
Maria Caine

31 July 2018

This is one in a series of reports being prepared about the Hunters Point Naval Shipyard. In early 2016, the Program on Environmental and Nuclear Policy at the University of California, Santa Cruz, initiated a project to review a series of issues associated with the cleanup of Hunters Point. Completion of that work was delayed by difficulties in getting necessary data and information from the Navy, EPA, and state agencies, and thus not completed by the time the Program's Director, Daniel Hirsch, retired from the university in June 2017. Since then, Hirsch and a team of former and current UCSC students have continued to work on the matter, through a nonprofit organization, the Committee to Bridge the Gap.

For contact: committeetobridgethegap.org@gmail.com

Executive Summary

1. The plan for a limited gamma scan of Hunters Point Parcel A-1 by the California Department of Public Health (CDPH) is fundamentally flawed and incapable of determining whether there is radiological contamination.

- No soil samples whatsoever are being taken. No safety determination can be made in the absence of extensive soil samples taken and sent to a laboratory for measurement of specific radioisotopes at the cleanup levels.
- The scan cannot detect gamma-emitting radionuclides at the levels requiring cleanup.
- The gamma scan cannot detect alpha- or beta-emitting radionuclides (e.g., such as plutonium-239 or strontium-90) at all.
- The gamma scan, as flawed as it is, can only "see" gamma radionuclides within about 6 inches of the surface.
- The gamma measurements are being compared to "background," but CDPH is markedly inflating background.
- No measurements are being made inside any residences or businesses, or any areas deemed private as opposed to public.
- No measurements are being made in large public portions of Parcel A-1, and none at all in Parcel A-2.

2. CDPH's credibility severely impaired, and its failure to allow reasonable review and comment by the public and other agencies of its proposal for a gamma scan before commencing the work suggests it recognizes that its deeply inadequate plan cannot withstand scrutiny.

- The years of data falsification by Tetra Tech occurred under CDPH oversight and repeated approvals. CDPH's hands in this matter are not clean.
- Whereas the Navy for its retesting plan of Parcel G allowed sixty days review and comment by the public and regulatory agencies such as EPA, after which the Navy is to respond to the comments and alter the plan accordingly, CDPH issued its Work Plan for Parcel A-1 a mere six business days before the scanning started, and will not respond to comments, if at all, until long after the plan was actually implemented, making any revisions to fix the inadequacies impossible.
- CDPH has failed to even respond to repeated fundamental questions about the gamma scan plan.

Conclusion: The extraordinary defects in the CDPH gamma scan plan make it impossible to detect radiation at the levels that would require cleanup. It is like a doctor wearing a blindfold and saying that s/he didn't see any problem. CDPH is wandering around limited portions of Parcel A with the equivalent of a Geiger counter that can't see contamination at the levels of concern. These flaws and CDPH's aggressive refusal to allow scrutiny and comment by the public and EPA and consequent plan revision before the scanning began suggest that its purpose is pre-ordained: to provide cover for the failure of CDPH and other agencies to assure adequate monitoring and cleanup of Hunters Point in the first place.

Critique
of the
Work Plan
for a Partial Gamma Survey of Parcel A-1
Hunters Point Naval Shipyard

Introduction

The Hunters Point Naval Shipyard is a Superfund site, by definition one of the most contaminated sites in the nation. Decades of grossly inadequate environmental controls, abetted by lax regulatory oversight, have resulted in widespread radioactive and chemical contamination throughout Hunters Point.

It has recently been revealed that measurements at 90-97% of areas tested at Hunters Point by Navy contractor Tetra Tech for radioactive soil contamination had been fabricated, falsified, or were otherwise suspect.[1] Similarly, it has been disclosed that the data for the great majority of buildings scanned by Tetra Tech for radiation also appeared to have been falsified.[2]

The Hunters Point cleanup is subject to a Federal Facilities Agreement,[3] entered into in 1992, which provides for review and oversight of the cleanup by California state agencies. The Radiologic Health Branch (RHB) of the California Department of Public Health (CDPH) has primary state responsibility for the Hunters Point radioactive contamination issues,[4] and *signed off on the measurements and cleanup decisions that are now known to have been falsified.* As CDPH stated in the July 5, 2018, Parcel A-1 Survey Request, CDPH has long been involved

---

[1] See EPA analyses of Parcels B and G soil data falsification, 27 December 2017, and of Parcels D-2, UC-1, UC-2, and UC-3, dated 30 March 2018.

[2] See Navy, *Draft Building Radiation Survey Data Initial Evaluation Report,* March 2018.

[3] https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/1110380411/FFA_TI%20and%20HP.pdf, last accessed 24 July 2018

[4] The Federal Facilities Agreement was signed on behalf of the state by the California Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board, San Francisco Region. https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/1110380411/FFA_TI%20and%20HP.pdf last accessed 30 July 2018. Pursuant to a contract with DTSC, RHB has been delegated the primary state responsibility for review and oversight of the radiological aspects of the cleanup. See, e.g, California Department of Public Health, *Process, Criteria, and Timeline for Release Management of the Hunters Point Shipyard's Radionuclide Contamination Sites*." 23 March 2010 https://www.envirostor.dtsc.ca.gov/public/deliverable_documents/8585575699/Navy%20response%20to%20CDPH%203.24.10%20proposal_4.20.10.pdf last accessed 30 July 2018.

"in the review and oversight of the remedial activities for radiological contaminants at Hunters Point." And as it stated elsewhere,[5] "In this role, CDPH reviews historical documents, site conceptual models, work plans, sampling and survey data, and final status surveys...." Furthermore, it has separate responsibility for radiological matters for all parcels, including Parcel A, that have been transferred out of federal control.

CDPH thus has a substantial credibility problem associated with its failures at Hunters Point, having for years reviewed and signed off on the sampling and survey data and final status surveys that have now turned out to be falsified and fraudulent. One would have expected that it would take extra measures to assure a defensible, trustworthy, and transparent approach to the new testing of Parcel A at the site. Unfortunately, CDPH appears to have chosen a different course.

Failure of Transparency

The Navy has issued its draft retesting plan for Parcel G for two months of review and comment by the public and by other agencies such as EPA, after which the Navy will analyze and respond to the comments and supposedly revise the plan accordingly before undertaking the testing. The Navy plan, although it has numerous flaws, relies heavily on soil sampling (i.e., taking numerous soil samples and sending them to a laboratory where the samples can be measured carefully for concentration of individual radionuclides, to be compared to the site's cleanup standards/release criteria).

By contrast, CDPH issued its Parcel A-1 Work Plan *a mere six business days* before it was to commence the work. Although comments are allowed, there was no formal comment period (e.g., no deadline for comments), and *the work began before CDPH could review and respond to any comments received, let alone revise the plan accordingly*. Six business days, of course, makes serious review and comment impossible, either by the public or EPA. Even for comments that could somehow get prepared and submitted during those six days, CDPH could not—and did not—review comments, respond, and make appropriate changes to the Work Plan before starting the scanning. Indeed, some people who submitted comments during those few days have belatedly received generic emails back—a week after the scanning had already started—acknowledging receipt of the comments, apologizing for the belated response, and saying that at some time in the future there would be a response. It is clear that the comment opportunity is for PR purposes alone and in no way intended to be a meaningful process whereby the plan could be affected by the comments received.

[5] *ibid.*

Refusal To Answer Elementary Questions, Creating the Impression that the Answers Would be Damaging

Within hours of the Work Plan being released, we sent an email to the email address provided by CDPH for questions about the project. The questions we asked were central to the credibility of the CDPH plan, and essential to providing meaningful comments. The questions were:

1. Precisely where will background measurements be made.

2. Is the scan for gross gamma or does it discriminate which gamma-emitting radionuclides and at what concentration it is detecting?

3. What are the minimum concentrations for individual gamma-emitting radionuclides that can be detected with this scan (e.g., pCi/g of cesium-137 in soil), and how do those compare with the official cleanup levels for those radionuclides at Hunters Point? How do they compare with current EPA default PRGs for unrestricted residential use (i.e., with no institutional controls)?

Four days later there had been no response, so we sent the same questions again, to Gonzalo Perez, the RHB program manager. As of this date, there has not been the courtesy of a response to the questions sent in either email. We can wait no longer, so we are providing these comments in the absence of the required answers.

As will be seen in the discussion that follows, it is reasonable to ask whether CDPH has declined to answer these fundamental questions because those answers would be highly embarrassing:

- The background measurements appear to be designed to grossly inflate true background, so as to be able to declare contamination detected in Parcel A is not contamination but just background.
- Most of the scanning appears to be just for gross gamma, incapable of discriminating which gamma radionuclides are detected and at what concentration.
- And most importantly, the gamma scan apparently cannot detect most and perhaps all individual gamma-emitting radionuclides at the cleanup levels prescribed for Hunters Point, let alone for the current EPA default Preliminary Remediation Goals (PRGs), and cannot detect alpha- or beta-emitting radionuclides at all.

Responding to the elementary questions we had posed, and which CDPH has studiously refused to answer, would have required admitting that the gamma scan was mainly for show and can't possibly determine whether there is radioactive contamination in Parcel A at levels exceeding either Hunters Point cleanup levels or the EPA PRGs. These matters and others demonstrating the fundamental inability of the partial gamma survey to resolve the critical question of whether there is radiological contamination remaining at Parcel A will be addressed below.

Brief History of Hunters Point Contamination

More than eighty naval vessels, heavily contaminated by nuclear weapons tests in the Pacific, were brought to Hunters Point to be sandblasted and steam-cleaned in efforts to remove the radioactivity from the ships, only to transfer much of that contamination to Hunters Point. The wind potentially carried the contaminated sandblast residue and steam throughout the site. Hundreds of thousands of gallons of radioactively contaminated fuel oil from ships in the midst of those atomic bomb blasts were burned on land at Hunters Point in boilers, creating the potential for airborne deposition of the radioactivity. Vast numbers of animals were injected with radioactivity, the carcasses of some of which appear to have been burned in on-site incinerators, again with the potential for widespread airborne deposition. Large amounts of radium-226 and strontium-90 were used in radioactive paint shops to paint self-luminescent equipment and deck markers, with the wastes being dumped down drains and buried on site. Immense quantities of a vast array of alpha-, beta-, and gamma-emitting radionuclides were allowed by license to be employed by the Naval Radiological Defense Laboratory at Hunters Point, with potential for contaminating much of the site. Hunters Point provided support for virtually all the U.S. nuclear tests in the Pacific; large amounts of nuclear weapons debris from the nuclear tests were brought back to Hunters Point for analysis. Sloppy practices and inadequate environmental controls resulted in widespread contamination, culminating in Hunters Point being placed on the CERCLA National Priority List (Superfund), i.e., a formal designation that the site is one of the most contaminated in the nation.

For roughly the last decade and a half, the Navy contracted with Tetra Tech to perform measurements of radioactivity at Hunters Point to determine what was contaminated above cleanup levels and thus needed to be remediated. Approximately $300 million of taxpayer funds were expended by Tetra Tech. EPA has found for one parcel only 3% of the measurements to be free of falsification, and for others only 7 or 10%, a finding concurred in by CDPH and DTSC. This breakdown in environmental remediation and regulatory oversight has revealed a scandalous, systemic failure, in which the state, and CDPH in particular, have played significant and troubling roles.

Brief Primer on Radiation and Radioactivity Important for Understanding Why the CDPH Partial Gamma Scan Can't Detect the Vast Majority of Radionuclides at the Cleanup Levels

There are three main types of radiation of concern here: alpha, beta, and gamma radiation. Alpha particles are essentially helium nuclei – two protons and two neutrons. Alpha-emitting radionuclides are of concern if they get inside the body (i.e., by being inhaled or ingested) where they can irradiate nearby cells and cause cancer. Beta radiation are high energy electrons or positrons that are spit out of the nuclei of beta-emitting radionuclides when they decays. Beta radiation is dangerous if its gets inside you, and even outside your body can pose a danger to the skin, lens of the eyes, and gonads. Gamma radiation can pass through your body (like medical X-rays).

Some radionuclides (isotopes of elements) are primarily or entirely alpha- or beta-emitting. For example, plutonium-239, one of the primary components of nuclear weapons test

contamination and one of the main radionuclides at issue at Hunters Point, is primarily an alpha-emitting radionuclide. It is one of the most hazardous materials on earth. A millionth of an ounce if inhaled will cause cancer with a virtual 100% statistical certainty. It is toxic for half a million years. Strontium-90, another key product of nuclear weapons tests, as well as having been used in extraordinary quantities as a separated material (i.e., not mixed with other radionuclides) at Hunters Point, is essentially a pure beta-emitter. There are a great many other alpha- and beta-emitting radionuclides that could be present at Hunters Point.

Other radionuclides are gamma-emitting. Your risk from them is both from external radiation penetrating your body and from internal emitters getting into the body.

Cleanup standards take into account the risk from external penetrating radiation and from internal emitters. Radiation dose is a function of time, distance, and shielding. A radionuclide inside your body can stay there a long time, irradiating nearby cells for significant periods. There is no distance between the radiation source and vulnerable cells, nor any shielding between the radionuclide and your cells; these factors thus increase the risk of damage.

So, to test for radioactive contamination one must measure the *concentration* of a wide array of individual radionuclides—alpha-, beta- and gamma-emitting—in soil, in and on surfaces such as asphalt or concrete, and on surfaces (e.g., dust) in buildings. At the heart of such testing is taking many soil samples, sending them to a laboratory, where the sample can be kept in special apparatus for many hours and measured carefully for the concentration of a wide array of alpha-, beta-, and gamma-emitting radionuclides. Accuracy goes up and detection limits go down in large measure based on the "counting time," how long the sample is kept in the detector. For example, the CDPH gamma walkover survey is at up to one meter per second. Any contamination would be "seen" by the detector for only a second or so, creating an immensely poor detection limit and accuracy; whereas taking a small soil sample and sending it to a lab where it would be kept in the detection equipment for hours results in extremely higher accuracy and ability to detect lower concentrations. Similarly, potentially contaminated dust in buildings is picked up on a "swipe" and sent to a lab that can measure it with significant accuracy. And these laboratory measurements can detect alpha, beta, and gamma radiation, as opposed to the gamma alone seen by the CDPH gamma scan.

The Partial Gamma Scan of Parcel A-1 Includes NO Soil Sampling Whatsoever

Any defensible testing of Parcel A would have as its basic component extensive sampling of soil. CDPH has refused to do ANY soil sampling. It does so based on the spurious claim that there is NO soil remaining at Parcel A from the period of Navy activities. No documentation whatsoever is given for this astonishing assertion.

CDPH states that it was presumed in the past that there was no possible contamination at Parcel A in the first place and it was transferred on that basis. (We have discussed earlier how such a claim in dubious, given the extensive mechanisms for widespread dispersion of contamination from other areas of the site.) Under those circumstances, why would anyone remove all the soil in the parcel and replace it with clean soil shipped in from elsewhere?

In any case, soil sampling is the essential step in any radiological site investigation. The soil samples are primarily systematic or random (i.e., since you don't know where the contamination might be, you take many samples at regular or random intervals to literally "sample" the site.) Additional focused samples are taken in areas where one might have an indication that additional investigation would be useful. Gamma surveys are used only for that purpose—to give a bit of extra information as to where additional focused soil samples should be taken, in addition to the systematic or random ones. They are *never* supposed to be a substitute for soil sampling, and can *never* on their own determine whether a site is safe. CDPH fully well knows this; and yet it is doing only a gamma survey, with no soil sampling.

The Gamma Scan of Parcel A-1 Cannot Detect Gamma-Emitting Radionuclides at the Cleanup Levels or the EPA Preliminary Remediation Goals

The whole purpose of the CDPH testing was supposed to be to determine if there is any radioactive contamination above levels requiring cleanup. Parcel A was released without essentially any soil sampling.[6] A whistleblower, Anthony Smith, has alleged that while working for Tetra Tech he took a soil sample at Parcel A and found it elevated with cesium-137 above the Hunters Point cleanup level of 0.113 pico-curies per gram (pCi/g), but was told to "get rid of it and not say a word."[7] Tetra Tech authored the Finding of Suitability to Transfer Parcel A. The Tetra Tech scandal thus has colored claims of safety of Parcel A and reinforced the need for a thorough testing of the site. (Technically, this is not re-testing, as there never was testing to speak of at Parcel A.) But despite evidence that Tetra Tech falsified soil testing data in Parcel A, and authored the suitability to transfer determination for the parcel, CDPH doggedly refuses to do any soil testing there.

But in addition to taking no soil samples at all, CDPH's gamma survey appears blind to all, or almost all, gamma-emitting radionuclides at the cleanup levels. We asked CDPH repeatedly what concentrations it could detect of individual radionuclides and how those compared to the cleanup levels. It repeatedly failed to answer.

But an indication of why CDPH has evaded providing answers to these essential questions can be found elsewhere. The Navy, in its proposed plan for retesting Parcel G, discloses that the far more capable gamma-detecting equipment it is planning to use can only see radium at its cleanup level (1 pCi/g) and cannot see cesium-137 at its cleanup level (0.113 pCi/g). Even for radium that is not assuring, since that cleanup level was a special arrangement with EPA to use a cleanup level far outside the acceptable risk range.

The EPA radiation monitoring work for the Santa Susana Field Laboratory, again using far more capable equipment that what CDPH is employing, also could not see gamma-emitting

[6] A few samples were taken for tritium outside one building that had had a tritium spill and been cleaned up with steam cleaning the interior.
[7] *Anthony Smith Declaration,* 18 May 2017, p. 5-6

radionuclides at the levels of concern. Its gamma scan was used, as it is intended to be, solely for the purpose of helping identify areas where additional focused (i.e., biased) soil sampling should be conducted, in addition to the systematic or random soil sampling that formed the core of the investigation.

It seems clear that walking over the parcel with a hand-held detector at 1 meter per second (3.6 kilometers per hour!) cannot detect anything at the cleanup levels. Indeed, the Work Plan indicates that there is no recording of data at all for the walkover, and the person carrying what is in layperson's terms just a Geiger Counter is to merely listen to the clicks and subjectively make a judgment whether there has been a big change. The static tests and the golf-cart-carried detector similarly seem incapable of detecting even gamma radionuclides at their cleanup levels.

Furthermore, the cleanup standards employed at Hunters Point are generally far less protective than the EPA default Preliminary Remediation Goals, and under CERCLA, EPA CERCLA guidance is supposed to be followed. The CDPH survey cannot see most or all gamma-emitters at the EPA PRG levels. This would appear to be why CDPH to date has refused to answer repeated questions on the matter.

The Gamma Scan of Parcel A-1 Cannot Detect Alpha- or Beta-Emitting Radionuclides At All

As indicated above, a large fraction of key radionuclides are alpha- or beta-emitters. However, the gamma scan being conducted by CDPH in Parcel A-1 cannot detect alpha- or beta-emitting radionuclides, only, as the name suggests, gamma-emitters. *The scan is thus useless for detecting a large fraction of the radionuclides that could be present—it is blind to them.*

If there is plutonium-239 present in Parcel A—say as contaminated dust that has spread from the heavy earth-moving activity of nearby contamination elsewhere at Hunters Point, or from airborne deposition onto Parcel A surfaces from the decontamination activities on the dozens of ships from the Pacific nuclear tests brought back to Hunters Point—the CDPH survey cannot detect it. If there is strontium-90 present—for example from contamination from the separated strontium-90 used for radio-luminescent paint and deck markers or for large separated quantities listed on their radioactive materials licenses for SNAP (Space Nuclear Auxiliary Power) sources—the CDPH gamma survey cannot see it.

The Gamma Scan, As Flawed As It Is, Can Only "See" Gamma Radionuclides Within About 6 Inches Of The Surface

As seen above, if it were an alpha or beta source, or were there gamma-emitting contamination that had migrated by air or surface water and was present at levels requiring cleanup, the gamma scan generally cannot see it. If a discreet, large gamma-emitting source were buried a few inches from the surface, the gamma scan *might* detect it. If it were any deeper than that, it couldn't be seen.

It is important to note that Parcel A was released for *unrestricted* residential and other use. That means the most protective cleanup standards are supposed to be applied, as one cannot rely on restrictions for protection, only cleanup. No institutional controls apply to Parcel A. One can dig up any cover (patio surface, asphalt, soil area) one wishes. One can plant a vegetable garden or fruit trees anywhere one wishes, and eat what they produce.

Thus, a strong gamma-emitting radiation source within a few inches of the current surface–all this survey might possibly be able to detect—is a largely irrelevant matter compared to what testing should have aimed to be able to find: alpha-, beta- or gamma-emitting radionuclides anywhere in the soil profile at levels exceeding the cleanup standards for unrestricted release. The CDPH gamma survey simply cannot detect that which might exist and need to be cleaned up.

The Gamma Measurements are Being Compared to "Background," But CDPH is Markedly Inflating Background

We repeatedly asked CDPH where the background measurements are being taken; it has repeatedly refused to answer. One of the key reasons independent testing of Hunters Point is essential is because past background measurements were fabricated or manipulated. They were frequently taken from places within the contaminated Hunters Point Naval Shipyard, which violates the fundamental rule of background determination—it must be from places that can't be contaminated. This trick of using potentially contaminated locations as background, so as to elevated the supposed background value and thus declare other measurements "at background" when they could be contaminated, is an old but dangerous one. That is why knowing where CDPH is taking its background measurements is so critical, and why its refusal to disclose those locations so troubling.

But while refusing to reveal *where* it is taking background measurements, CDPH does reveal something of *how* it calculating those values, and those disclosures are troubling. It is using as background the mean plus three sigma. This is something the general public would not catch—and CDPH studiously avoids explaining. We will try briefly to do so here.

In statistics there are two types of errors that are of particular concern: Type I and Type II, or more commonly, false positives and false negatives. In the context at issue here, one wants to avoid calling a soil sample contaminated when it is not (i.e., not over background). That is a false positive. One also wants to avoid calling a soil sample clean when it is in fact contaminated (i.e., above background). That is a false negative. To have high confidence of avoiding a false positive produces a significant likelihood of a false negative, and vice versa.

Choosing whether to emphasize avoiding false positives or false negatives is a function of what one values. Is it extremely important to save the Navy money by having a vanishingly small chance of calling some soil contaminated when it isn't, or is it more important to save lives by having a small chance of calling soil clean when it is contaminated and should be cleaned up? CDPH has chosen the former, to the extreme.

Setting background at the mean of your background measurements plus three sigma means that you have a 99.85% confidence that a value above that level is truly contaminated.[8] Only 0.15% of the time would that reading really be background when it wasn't. There is an extremely small chance you would be cleaning up something you didn't have to. *But conversely, there is a very large chance then that you wouldn't be cleaning up soil that you should have cleaned up.*

Furthermore, in response to a reporter's inquiry, CDPH indicated it was only taking five background measurements per medium, at least in the example it provided. The population size of a sample ("N") is critical to establishing a reasonable estimate. A sample size of 5 is so small, that the upper confidence interval can end up huge.

The way background is *supposed* to be measured is: (1) selecting locations significant distances from the Superfund site, where things should be clean, (2) multiple locations, (3) a large number of samples taken, and (4) none of this 3-sigma inflation. The statistics should be set to keep the risk of a false negative (falsely claiming it is clean when it is dirty) to the minimum, rather than the reverse, because the Department of *Public Health*'s goals should be protecting public health, rather than the economic interests of the polluter or developer.

CDPH's priorities are thus clear: it has dramatically inflated background so as to significantly reduce the amount of soil the Navy might have to clean up or the revelation that CDPH allowed an unsafe site to be released and people allowed to live on it, but in so doing it has significantly increased the risk that soil that is truly above background will be erroneously declared clean.

No Measurements are Being Made Inside Any Residences or Businesses, or Any Areas Deemed Private as Opposed to Public

The testing is supposedly being done to determine whether people living on Parcel A are at risk and remediation should occur. Yet CDPH curiously has refused to make any measurements inside any residence or businesses, or any areas other than public spaces, despite the presence of many people, including children, in those other areas. No serious defense has been given of these striking omissions.

Decades of contamination and mechanisms for widely transporting that contamination have occurred. People inside and outside homes and commercial operations may be at risk. But this survey, leaves those locations out entirely. If you don't look, you don't find.

[8] Three sigma, or three standard deviations, produces a 99.7% probability that the true value is within the range established. Of the remaining 0.3% probability, half of that is associated with the lower end of the range and half with the upper, so the chance of exceeding the upper end of the range is 0.15%.

No Measurements are Being Made in Large Public Portions of Parcel A-1, and None at All in Parcel A-2.

Even after leaving out all but public spaces in Parcel A-1, large public portions are also excluded by CDPH from survey. The reason put forward is that CDPH doesn't have the necessary equipment. But then it should have gotten the equipment; contracted for some entity that does have the equipment to do the work under its supervision; or declined to do the work because it didn't have the necessary equipment. Doing a grossly inadequate job because one doesn't have the equipment to do an adequate job is not acceptable.

EPA, when it did the Santa Susana Field Lab survey, had an array of equipment that could get to all necessary terrain. One doesn't agree to do a health survey when one doesn't have the capability or instruments to perform it, as appears the case with CDPH here.

By way of weak excuse, CDPH asserts that some of these areas are places that people are unlikely to get to. But that clearly isn't the case. Children play everywhere. Contaminated dirt is resuspended from areas of open soil and blow to other areas. All soil should be tested; declaring large portions of Parcel A exempt from testing is not defensible.

Conclusion

The CDPH gamma survey of limited parts of Parcel A-1 is fundamentally flawed. It cannot detect the very radioactivity that could be present, at the levels that would require cleanup.

CDPH appears to recognize that its real purpose for the scanning is for show, not for determining if there is actually radioactive contamination. Otherwise it would not have raced to undertake the scanning prior to reviewing and responding to comments from the public and from other regulatory agencies. This conduct raises questions as to whether the failure to provide meaningful opportunity for scrutiny before commencing this flawed activity is because CDPH recognizes that what it is doing cannot withstand scrutiny.