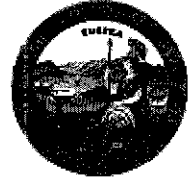




California  
Department of  
Health Services

**SANDRA SHEWRY**  
Director

State of California—Health and Human Services Agency  
**Department of Health Services**



**ARNOLD SCHWARZENEGGER**  
Governor

April 10, 2007

Mr. Mike Sedell  
City Manager  
City of Simi Valley  
2929 Tapo Canyon Road  
Simi Valley, CA 93063-2199

Dear Mr. Sedell:

The California Department of Health Services (CDHS), Radiologic Health Branch (RHB) has completed its review and responses to the questions pertaining to the Runkle Canyon Sr-90 issue prepared by Simi Valley residents and forwarded by your March 1, 2007 letter. The responses are enclosed. Please note that our responses only address the "SPECIFIC QUESTIONS FOR CDHS" portion of the attachment to your letter.

We hope our responses will be of assistance to the City of Simi Valley in your determinations concerning this site. Please do not hesitate to contact me at (916) 440-7942, or Mr. Greger at (714) 270-0368, if you require additional assistance from us regarding this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gary W. Butner', is written over a horizontal line.

Gary W. Butner  
Acting Branch Chief  
Radiologic Health Branch

Enclosure

cc: See next page

Mr. Mike Sedell  
Page 2  
April 10, 2007

cc: Laura Behjan  
Assistant City Manager  
City of Simi Valley  
2929 Tapo Canyon Road  
Simi Valley, CA 93063-2199

Lauren Funaiole  
Environmental Planner  
City of Simi Valley  
2929 Tapo Canyon Road  
Simi Valley, CA 93063-2199

Larry Segal, Runkle Canyon, LLC  
27240 Turnberry Lane, Suite 100  
Valencia, CA 91355

## ENCLOSURE

The "SPECIFIC QUESTIONS FOR CDHS" portion of the attachment to the February 28, 2007 letter to the City of Simi Valley from Messrs. Serrafine and Southwick is shown below along with the CDHS responses, which are shown in the "boxes." CDHS numbered the questions and titled the various comment/question sections for ease of reference, but made no other changes from the electronic version of the attachment that was forwarded by Laura Bejhan (City of Simi Valley).

### Serrafine/Southwick Letter Comments and Questions 1-4.

During a March 2005 meeting of the Santa Susana Field Laboratory Workgroup in Simi Valley, citizens expressed concerns about a March 10, 2005 article, "Neighborhood Threat - Runkle Canyon is poised to be Simi Valley's newest neighborhood. But did the city misinterpret the risk of radioactive material in the ground?" in *Los Angeles CityBeat/ValleyBeat*. CDHS's Robert Greger said that his department would look into information about high levels of strontium-90 in Runkle Canyon.

According to the *CityBeat* article "Hot Property -- Runkle Canyon developers claim mysterious new state tests have erased previously high levels of radioactive contamination," CDHS went and took five soil samples in Runkle Canyon on June 7, 2005 and "split" them with a lab hired by the developer hired to analyze them for Sr-90, Dade Moeller. In January 2006, CDHS told *CityBeat*, and in the fall of 2007 the City of Simi Valley, that the department did not generate a report associated with this testing.

1. Why didn't CDHS generate a report regarding its 6/7/05 visit to Runkle Canyon that including sampling and testing along with another Dade Moeller?

#### CDHS Response to Question 1

CDHS does not generate reports regarding all sampling that is performed. This is particularly true when the sampling is limited in scope as was the Runkle Canyon sampling, which consisted of only five soil samples.

2. Is it normal procedure for CDHS not to generate reports on important sampling/testing events?

#### CDHS Response to Question 2

See Response to Question 1.

3. How can this be justified as sound scientific procedure according to CDHS?

#### CDHS Response to Question 3

"Sound scientific procedure" does not require a formal report. It does require documentation of methodology and results. The analyses of the samples were performed in accordance with the CDHS Sanitation and Radiation Laboratory documented procedures. The sampling methodology was also documented, as were the analytical results. The absence of a formal report does not compromise the validity of sampling results.

4. Why didn't CDHS tell the SSFL Workgroup of this sampling/testing?

CDHS Response to Question 4

The SSFL Work Group was informed of the sampling and the sampling results. In May 2005 CDHS decided to perform the limited confirmatory sampling, and CDHS believes this decision was communicated in the May SSFL Work Group monthly conference call. The CDHS sampling was conducted in June 2005; the analytical results were received from the CDHS laboratory in July 2005; the findings from the sampling were communicated briefly in the July SSFL Work Group public meeting; and the detailed analysis results were communicated by email to the SSFL Work Group members in August 2005.

Serrafine/Southwick Letter Comments and Questions 5-6.

CDHS' October 27, 2006 letter to the City stated "It is our understanding that the Environmental Protection Agency has previously stated, at a Santa Susana Field Laboratory Work Group public meeting, that the strontium-90 soil concentrations identified by soil sampling at the Runkle Canyon site are considered safe for residential development such as is planned for the Runkle Canyon site. The (DHS) has no reason to dispute that finding by the EPA. We will therefore, concentrate our efforts on the health hazards posed by airborne strontium-90 during site development activities."

5. Is CDHS aware that EPA denied saying that in the November 17, 2006 edition of the *Ventura County Star*? According to the paper, "Steve Armann, with the EPA, said the comment about the soil concentration made at the public meeting was off the cuff and not an air-tight conclusion."

CDHS Response to Question 5

CDHS was not aware that EPA denied making the statements noted in the referenced October 27, 2006 CDHS letter, nor does the statement accompanying question 5 indicate that EPA denied stating at the March 2005 SSFL Work Group public meeting that the Sr-90 sampling results for Runkle Canyon fell within the EPA CERCLA acceptable risk range of 1E-6 (one in a million) to 1E-4 (one in 10,000), or that the site was "safe" for residential development. Subsequent to the referenced CDHS October 27, 2006 letter, EPA (John Beach) sent an email to the City of Simi Valley that reiterated that the Sr-90 measurements appeared to fall within their protective cancer risk range of 1E-6 to 1E-4. The email refrained from reiterating that the Runkle Canyon site was "safe" for residential development, claiming not to have "oversight or a regulatory role" and apparently not the "time and resource commitments" needed to make such a decision.

6. Was this misunderstanding by CDHS of what the EPA actually meant the reason that it did not include a soil-impact review that would consider the long-term implications of living on the site, such as the ingestion of the soil by children living at the Runkle development? Is this why CDHS decided to only analyze potential dust hazards?

CDHS Response to Question 6

See CDHS Response to Question 5 concerning "misunderstanding." Based on the statement by EPA at the March 2005 SSFL Work Group public meeting, CDHS

decided to address the issue of the safety associated with the dust generation, and allow EPA to address the soil safety issue. See CDHS Responses to Questions 10 and 21 below for further comments on the soil safety issue. Regarding the ingestion of soil by children, that intake pathway is included in the EPA PRG derivation.

Serrafine/Southwick Letter Comments and Questions 7-9.

In the CDHS Radiologic Health Branch letter of November 8, 2006 to the City, CDHS states that "The Miller Brooks survey is not considered useful due to its high minimum detectable activity. . ." The City relied on this report for the Runkle EIR. "The Miller Brooks study of 2003 was truly the report that we used, and Impact Sciences used, to do the EIR," City planning director Peter Lyons told *CityBeat* in 2005.

7. Did CDHS inform the City that the Miller Brooks survey wasn't useful before final approval of the Runkle EIR in April 2004?

CDHS Response to Question 7

CDHS communications with the City of Simi Valley concerning the Runkle Canyon development commenced sometime in 2006, per our recollection, which was significantly after the referenced date of the EIR approval. The comment that the Miller Brooks surveys were not useful was made by CDHS in the context of the construction dust analysis. Because only two of 32 Miller Brooks soil sample results yielded quantitative results (all other sampling was reported as less than the laboratory detection limit), CDHS did not use the sampling results in CDHS' quantitative analyses of the safety impact of dust generated in the grading process. Had CDHS included the Miller Brooks sample results at their detection levels, the dust analysis outcome would not have changed appreciably. The fact that CDHS did not find the data useful for analyzing the safety impact of construction dust does not mean that the survey information would not be useful to the City of Simi Valley for their purposes.

8. Assuming that the 11/8/06 CDHS letter to the City was the first time it told the City this information, this would be 'new' information for the City, correct?

CDHS Response to Question 8

CDHS is not in position to comment on what would be "new" information to the City of Simi Valley.

9. Does CDHS feel that it is proper procedure for an entity, in this case a city, to base an important part of its EIR on a report that CDHS says "is not considered useful"?

CDHS Response to Question 9

See Response to Question 7.

Serrafine/Southwick Letter Comments and Questions 10-11.

In the CDHS 11/08/06 letter to the City, it is noted that the discrepancy, by a factor of nearly five, of the results of CDHS' and Dade Moeller's 6/7/05 sampling and split-sample

testing. Actually, the range of difference was CDHS' results was 2-19 times lower than the developer's lab. CDHS notes that "The previous results averaged 6.45 pCi/g for the five locations, the CDHS results were approximately 1/100 of those previous sampling results."

10. Despite these enormous discrepancies, despite not having even generated a report on the sampling, CDHS maintains that "there does not appear to be sufficient justification at this time to attempt to resolve the reason for the differences between the 1999-2003 and the CDHS 2005 sampling results." On what basis of fact is this statement made?

CDHS Response to Question 10

The CDHS conclusion was reached because the arithmetic average Sr-90 soil concentration for all quantitatively reported Runkle Canyon soil sampling was 1.12 picocuries per gram. The construction dust safety assessment performed by CDHS showed that using the 1.12 picocuries per gram soil concentration resulted in both onsite and offsite risks that were well below 1E-6. Also, this soil concentration equates to approximately 5E-6 (5 in a million) cancer risk for future site residents using the EPA PRG, which is well within the EPA protective cancer risk range of 1E-6 to 1E-4 and also well below the U.S. Nuclear Regulatory Commission decommissioning upper regulatory criteria of 25 millirems per year (approximately 5E-4 risk). Also see Response to Question 21.

11. CDHS says that it "could not precisely match the previous sampling locations." Even though there is no report to address this sampling, can CDHS explain why it is or isn't important to match the precise location for comparison evaluation?

CDHS Response to Question 11

CDHS considered it important to match the CDHS sampling locations to the previous sampling locations because the CDHS soil sampling at Runkle Canyon was performed in an attempt to verify the previous sampling results for Sr-90. The five sample locations chosen by CDHS attempted to replicate the five highest Sr-90 locations from the previous surveys. The CDHS sampling did **not** confirm the previously determined high Sr-90 levels at the five locations sampled, finding instead a factor of approximately 100 lower Sr-90 concentrations. A possible reason for this is that the previous Sr-90 concentrations may have been extremely localized and, because the CDHS sampling was not from precisely the same locations, different Sr-90 concentrations were found by CDHS. (There are other possible reasons for the differences between the CDHS soil sampling results and previous soil sampling results, but CDHS did not investigate the possible reasons for the differences.) Because the CDHS sample locations were not known to precisely match the previous sample locations, the validity of the previous sample results were not invalidated by the CDHS sampling results.

Serrafine/Southwick Letter Comments and Question 12.

CDHS says that "The CDHS sampling was prompted, in part, because unusually low Cs-137 soil concentrations from the previous surveys challenged the validity of the reported Sr-90 concentrations."

12. Couldn't the reverse be true? Couldn't the high Sr-90 readings indicate that the lower

cesium-137 measurements may have been too low? And is it scientifically valid to compare the five CDHS results, that were not accompanied by a report delineating sampling procedures and equipment or lab techniques and methods, to the 69 soil samples CDHS is questioning that were supplemented with reports?

CDHS Response to Question 12

It is possible the previous Cs-137 results were erroneously low, but as noted below in this response, CDHS considered it more likely that the Sr-90 analyses were erroneously high. Concerning the representativeness of the CDHS sample results, CDHS has not concluded its sample results are more representative of the Runkle Canyon soil Sr-90 concentrations than the previous sampling results, as noted below and in Responses to Questions 11 and 21.

The June 2005 soil sampling at Runkle Canyon was performed by CDHS in part due to the lack of expected ratios of Cs-137 compared to Sr-90 as determined in the previous soil sampling. One expects to find somewhat higher Cs-137 soil concentrations than Sr-90 soil concentrations for depositions originating from the fission process, as a result of the relative fission yields of the two nuclides. This is evidenced in both local and national background Cs-137 and Sr-90 concentrations, and also in most SSFL Area IV contaminated soil. Instead of identifying lower Sr-90 soil concentrations, the previous Runkle Canyon sampling identified Sr-90 concentrations at over 10 times Cs-137 concentrations.

Additional reasons for the CDHS sampling were: 1) with the exception of one area in a watershed in close proximity to the SSFL site, elevated Sr-90 was not identified in surveys of the Brandeis Bardin property, which is located between SSFL Area IV and much of the Runkle Canyon property, including the Foster Wheeler sampling locations. & 2) Cs-137 laboratory analyses are significantly less complex to perform, and therefore less error prone, than Sr-90 laboratory analyses. Combined, these factors tended to raise suspicions concerning the previous Sr-90 results, rather than the previous Cs-137 results.

Even though the CDHS soil analyses showed approximately a factor of 100 less Sr-90 for the five locations sampled than the previous sampling had shown, CDHS did not conclude the previous sampling results were invalid, and CDHS used the combined arithmetic average of all the quantitatively reported samples in the construction dust safety assessment. The lack of a formal report of the CDHS sampling effort was addressed above in Response to Question 3, and as noted has no impact on the validity of the CDHS Sr-90 results.

Serrafine/Southwick Letter Comments and Questions 13-14.

In ascertaining the health impact on the public, CDHS discusses radiation in terms of "millirem" dose-based exposure. The 11/8/06 CDHS letter states "California regulation basically require that doses to members of the public not exceed 100 mrem per year. . ." As noted in the newspaper article "Neighborhood Threat," cited above, "This 'dose-based' number measured in millirem is not the way the EPA measures a radionuclide's toxicity. The agency calculates the presumably safe levels of radio nuclides by using 'preliminary

remediation goals,' or PRGs."

The article went on to state that "EPA calculates a fatal cancer risk for each substance so that it would cause no more than one death per every 10,000 people exposed to that radionuclide. But the ultimate goal is no more than one death per million people exposed."

13. Why does the CDHS use this dose-based method of ascertaining the harm that Sr-90 potentially presents at the Runkle development when the developer and the City are using the risk-based EPA method in its final appraisal of the radiation risk of Sr-90?

CDHS Response to Question 13

California is an Agreement State under the Atomic Energy Act of 1959, which authorizes California to regulate most ionizing radioactive materials use in California in lieu of the current U.S. Nuclear Regulatory Commission (NRC) regulating such usage. The NRC maintains oversight responsibility of Agreement States, and requires compatibility with most of their regulations. The NRC regulations are written in terms of dose rather than risk, which is why the CDHS regulations are dose-based. Dose-based regulations are utilized in all 50 states for the regulation of ionizing radiation. One must start with dose in order to calculate risk (dose/risk effect is based in large part on the Hiroshima and Nagasaki atomic bomb survivor studies). While EPA uses risk-based guidance in their CERCLA actions, EPA uses dose-based regulations in other situations (see 40 CFR 190.10, 40 CFR 191.03, 40 CFR 191.15, 40 CFR 192.41, and 40 CFR 197.4, among others). The results of CDHS' safety assessment of construction dust, both onsite and offsite, were presented in the attachment to the referenced CDHS November 8, 2006 letter in three formats: dose, risk, and fraction of the CDHS regulatory limit for airborne radioactive emissions.

14. What is the reasoning for CDHS applying the considerably less strict radiation standards applied to licensed radiation-handling facilities to a residential development? In particular, what is the justification for this statement?: "While the Runkle Canyon site is not a 'licensee', it is appropriate for purposes of determining health and safety to use the CDHS regulatory criteria."

CDHS Response to Question 14

CDHS did not use "considerably less strict radiation standards applied to licensed radiation-handling facilities." The referenced use of the licensee regulatory criteria is for airborne emissions (equivalent to 50 millirems per year to the public), which is lower (more strict) than the regulatory public dose limit (100 millirems per year). CDHS compared the dust emissions to the lower airborne emissions criteria, as well as to the 100 millirems per year public dose limit and also the 10 millirems per year airborne emissions ALARA goal. The calculated offsite dose to the public was calculated to be 0.00045 millirem for the year in which the grading is scheduled, which is a factor of 10,000 less than any of the referenced regulatory criteria. It is the equivalent of approximately 5E-10 cancer risk, which is over a factor of 1000 lower than the EPA's acceptable cancer risk range of 1E-6 to 1E-4. Please refer to 10CFR20.1301 for more information on the regulatory public dose limits; this regulation is utilized in essentially the same form in all 50 states.



Serrafine/Southwick Letter Comments and Questions 15.

In an August 23, 2006 memo to the City, director of Environmental Services AI Boughey wrote "The PRG is set to indicate whether additional study is required to determine if the site is contaminated or a health hazard exists."

15. Is the 2003 Miller Brooks study, which CDHS says is "not considered useful," and the CDHS/Dade Moeller soil sampling of five locations on the 1,595-acre site, with no report generated, considered adequate additional study according to the CDHS?

CDHS Response to Question 15

CDHS cannot speak for the City of Simi Valley regarding the "additional study" question. As noted in the response to question 7, the CDHS comment that the Miller Brooks surveys were not useful was made in the context of usefulness in the CDHS analysis of the safety impact of dust generated in the grading process. The fact that CDHS did not find the data useful for analyzing the safety impact of construction dust does not mean that the survey information could not have been useful to the City of Simi Valley for their purposes.

Serrafine/Southwick Letter Comments and Questions 16-18.

According to Boughey, the actual risk-based scenario was actually 0.26 cancers per million due to Sr-90, corrected from a "typo" of 0.77 cancers per million. The 11/8/07 CDHS report notes that "The average from all of the above strontium-90 soil surveys, except for Miller Brooks, is 1.12 pCi/g."

16. The EPA's PRG for Sr-90D is 0.231 pCi/g. Does this mean that 1.12 pCi/g CDHS calculation is nearly 4.85 times the PRG?

CDHS Response to Question 16

If one is using the default EPA residential PRG, the answer is "yes." However, it is not this straight forward. It is standard practice when performing safety assessments to utilize simplifying assumptions, as long as those assumptions yield conservative results and as long as the overall results achieve the desired safety margin. CDHS did that in several instances in our construction dust safety assessment of Runkle Canyon. Additionally, the EPA PRG values are generic values that may be unnecessarily conservative for some sites. By using actual site characteristics, one can often legitimately use higher concentration values than the EPA default PRG value. Also, CDHS used an arithmetic mean for the samples, when in many cases it is more appropriate to use a geometric mean, especially for environmental contamination. In the case of the Runkle Canyon sample results, the geometric mean results in a lower sample concentration than the arithmetic mean.

One cannot simply compare two risk assessments without examining the underlying assumptions of those assessments, and therefore it is inappropriate to simply compare the calculated risk based on the CDHS arithmetic mean and the risk determined by Mr. Boughey. For example, while CDHS' arithmetic mean of 1.12 pCi/g corresponds to approximately 5E-6 risk (5 cancers in a million people residing on the site for 30 years)

using the EPA suburban residential default PRG value of 0.231 pCi/g. Dade Moeller and Associates, Inc. performed a risk assessment for GreenPark Runkle Canyon, LLC taking into account a number of site specific parameters and utilizing a geometric mean analysis. That risk assessment, which was provided to the City of Simi Valley, concluded the risk to future site residents would be less than 1E-6.

17. If so, doesn't that translates to a possible cancer risk scenario due to Sr-90 in the dust of 4.85 cases per million?

CDHS Response to Question 17

No, the intake pathways for radionuclides differ for airborne dust and soil. The report attached to the referenced November 8, 2006 letter describes how the dust risk was calculated, and shows the calculated risk to be 0.00045 cases per million.

18. Does that mean that the CDHS estimate is 18.64 times higher than the City's 0.26 cancers per million EIR estimate that Boughey cites?

CDHS Response to Question 18

Please see Responses to Questions 16 and 17.

Serrafine/Southwick Letter Comments and Question 19.

The most extensive radiological survey done on the property was Foster Wheeler Environmental Corporation testing of 58 sites/samples on the 1,595-acre property, or one sample/test per 27.5 acres. This also was the testing that showed the highest Sr-90 readings, with the highest reading being nearest the SSFL lab where nuclear work was done. The CDHS/Dade Moeller testing with no report was of 5 sites/samples, averages out to be one sample per 319 acres.

19. Which study would be more representative of a site's conditions? A one sample/test per 27.5 acres or one sample/test per 319 acres?

CDHS Response to Question 19

Assuming the sampling and analyses are done correctly, increasing the number of samples increases the reliability of the sampling results as being representative of the site being surveyed. However, the question assumes the CDHS sampling/analyses were performed for the purpose of characterizing the Runkle Canyon site. This is not the case; the CDHS sampling/analyses were performed as a verification check on the correctness of the sampling/analyses from the previous sampling, including the Foster Wheeler survey. As noted in the Response to Question 12, the CDHS sampling/analyses for Sr-90 averaged approximately a factor of 100 lower than the previous sampling results for the five locations sampled. Notwithstanding this significant difference, CDHS used the average of all quantitative sampling results in calculating the safety significance of the construction dust.

Regarding the statement in the comments preceding Question 19 concerning the highest Foster Wheeler sampling result for Sr-90 being the location nearest the SSFL lab, there were three sampling locations in the Foster Wheeler survey that appear to be

approximately equidistant and nearest to the SSFL Area IV radiological facilities: GP-42-M (Sr-90 = 1.79 pCi/g), GP-51-M (Sr-90 = 1.15 pCi/g), and GP-52-M (Sr-90 = 12.34 pCi/g). The GP-52-M location is the one referred to in the comments preceding Question 19; the CDHS Sr-90 sampling result near GP-52-M was 0.137 pCi/g. In addition to these three Foster Wheeler sample locations, there were a number of sampling locations from other Runkle Canyon surveys that were nearer the SSFL Area IV radiological facilities than were the three Foster Wheeler sample locations noted. These other sample locations identified significantly lower Sr-90 concentrations than sampling location GP-52-M. Also, previous surveys of the Brandeis Bardin property, which is located between SSFL Area IV and the Foster Wheeler survey locations on the Runkle Canyon site, including location GP-52-M, did not show elevated Sr-90 (with the exception of one surface run-off location in close proximity to SSFL Area IV that averaged approximately 0.1 pCi/g, or less than 1/10 of the average Runkle Canyon Sr-90 sample results and less than 1/100 of the GP-52-M sample results).

As noted in the Response to Question 3, the lack of a formal CDHS report does not impact the validity of the CDHS sample results.

#### Serrafine/Southwick Letter Comments and Questions 20-21.

#### **New Testing**

Should the City find that its testing and analyzing of data concerning Runkle Canyon's soil was so questionable, inaccurate and incomplete, it could employ a MARSSIM-based survey, much like the one performed by Foster Wheeler in 1999. [Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM): A document developed by the Department of Energy, the Department of Defense, EPA, and Nuclear Regulatory Commission to provide detailed guidance for planning, implementing, and evaluating environmental and facility radiological surveys conducted to demonstrate compliance with a dose- or risk-based regulation. MARSSIM focuses on the demonstration of compliance during the final status survey following scoping, characterization, and any necessary remedial actions.]

20. Would a new MARSSIM-based testing of Runkle Canyon for Sr-90, with one sample/test per acre, be more accurate than one sample per 319 acres and be more likely to be statistically accurate about the amount of strontium-90 in Runkle Canyon soil?

#### CDHS Response to Question 20

Please see Response to Question 19. Also, MARSSIM defines the minimum number of samples needed to perform statistically significant surveys. The number of samples collected in the Foster Wheeler survey met the MARSSIM criteria for an appropriate number of samples. The number of samples collected by CDHS did not; but as previously noted CDHS wasn't attempting to conduct a MARSSIM survey.

21. Considering that this development will be built within 1 1/2 miles of Area IV of the Santa Susana Field Laboratory, which is in the midst of a \$258 million cleanup, would such a survey be effective in determining the safety of building a development that will

make airborne 112 tons of dust?

CDHS Response to Question 21

The Foster Wheeler survey appears sufficient to determine the safety of the construction dust issue, as well as for use of the site for residential development. As pointed out in the comments preceding Questions 20 and 21, the Foster Wheeler survey was a MARSSIM designed survey consisting of 58 samples. It turns out that 32 of these samples were from areas designated for residential development (see Dade Moeller & Associates April 2005 Technical Report: Radiological Health Risks from Strontium-90 in the Runkle Canyon Development, Simi Valley, California). The arithmetic average concentration of the 58 Foster Wheeler samples is 1.4 pCi/g, but if one uses the 32 Foster Wheeler samples from the areas planned for residential development, the arithmetic average becomes 0.98 pCi/g. The cancer incidence risks associated with these concentrations are approximately  $6E-6$  and  $4E-6$ , respectively, based on the default EPA PRG for residential land usage. The 32 samples from the planned residential area meet the MARSSIM criteria for an appropriate number of samples, and applying MARSSIM methodology for determining representativeness of the planned residential area samples, a representative Sr-90 concentration of 1.1 pCi/g ( $5E-6$  risk) can be demonstrated. These risks all fall well within the EPA protective cancer risk range of  $1E-6$  to  $1E-4$ . One area scheduled for residential development at the site was not included in the Foster Wheeler MARSSIM survey, the northwest portion of the site (the portion accessed from Watson Avenue and Comet Avenue). Additional sampling may be desired in this area.