U.S. EPA Response to Comments from the
Technical Assistance Services for Communities (TASC) Independent Contractor
on the
"Draft Technical Summary of EPA's Analysis of Hunters Point
Air Monitoring Filters for Asbestos, December 22, 2009"

The comments below were received in a report from E^2 Inc., which provided independent technical assistance to the community under EPA's TASC program. Comments from E^2 were developed based on input from Dr. James Millette of MVA Scientific Consultants, a national expert on asbestos, and on input from community groups.

Note that in finalizing the report, EPA changed the title from "Draft Technical Summary of EPA's Analysis of Hunters Point Air Monitoring Filters for Asbestos" to "U.S. EPA Review of Dust/Naturally Occurring Asbestos Control Measures and Air Monitoring at the former Hunters Point Naval Shipyard" to better reflect the new content.

Comments included in the body of the text of the TASC Report:

Comment 1: The Draft Technical Summary does not specifically address dust generation.

***Response*:** The comment is correct; EPA did not specifically address dust in the draft report. EPA added a discussion on dust to the final report and clarified the differentiations between dust and asbestos.

Comment 2: During the site visit on March 1, Sample Site HV-8 equipment was not present, suggesting that no sampling is taking place at HV-8. The EPA Draft Technical Summary lists this monitor as being sampled one day per week at random. It is uncertain if sampling is not taking place at this site at all or if the equipment is moved when not actively sampling. Examination of the 68 results from the HV-8 monitor (12/05/06 – 2/26/10) shows the same trends as the other sets of monitor data. Most of the time, no asbestos was detected. A few times the level was above the trigger level, but below the EPA risk level for continuous exposure.

Response: HV-8 has been present during every EPA inspection. HV-8 is located within a fenced perimeter and is not easily visible from outside the site.

Comment 3 (related to Recommendation 3 below): The EPA Draft Technical Summary did not attempt to address the exposure to the community between April and August 2006 when mass grading/earthmoving activities occurred on Parcel A. There are no perimeter monitoring data from that period. It may be possible to estimate exposures with other data or by use of a modeling study. There are several different approaches that could be used for modeling. A combination of approaches may also be appropriate. Three approaches are:

> **a. Data extrapolation:** There is some perimeter data collected on August 17, 2007 during work activities similar to those occurring during the April-August 2006 period.

The perimeter air sampling values for that day (8/17/07) were 0.0019, 0.0010, 0.0029, 0.0057, 0.0009, <0.0010, 0.0460, <0.0010, <0.0010, and 0.0038 structures per cubic centimeter.

***Response*:** The comment suggests looking at data from a day when monitoring was functional and field operations were out of compliance (the commenter suggests a specific day with an inspection that led to a Notice of Violation). As the comment notes, nine out of ten monitors were well below the trigger level on that day, and one monitor was at three times the trigger level. While this may qualitatively suggest that monitoring results are not necessarily high on dusty days, it only represents a single day and risk should be estimated from exposure measurements over a long time period. EPA prefers to focus on the three plus years of existing data. There is no way to recreate the missing data, but the monitoring during the last three years of construction activity are the best estimate of what conditions may have been like during the early summer of 2006.

b. Data calculation: It may be possible to use a modeling study to estimate the community exposures during that period at the site. A key parameter needed to perform this calculation is the amount of asbestos released by the grading/earth moving and truck related activities during the time period of interest. There is some data from personal monitoring at the site that was conducted in May 2006 that can be assumed to reflect the levels of fibers released during the grading/earth moving activities. The highest values from the personal samples were (all in fibers per cubic meter):

- Scraper moving dirt: 30,000
- Blade operator: 40,000
- Compactor: 50,000

All of the fibers in these samples are longer than five micrometers. These are Phase Contrast Microscopy (PCM) data which may contain some non-asbestos fibers.

***Response*:** The data from the worker safety monitors ranges from non-detect to the highest levels noted in the comment. Also, as noted in the comment, the worker PCM data includes non-asbestos fibers so the results should not be correlated with the perimeter monitoring results. Modeling could be done to estimate the dispersion and dilution as the fibers move from the source area out into the neighborhood. However, that is beyond the scope of EPA's assessment of ongoing operations and exposure. However, the levels measured at the worker source area are within worker safety limits and would be lower at the project boundary. Also, as stated in the response above, EPA believes that the three plus years of perimeter monitoring data collected during construction are the best indicators of conditions at the site.

c. Collect new or research similar activity samples: There is a database of information about activity-based asbestos fiber release from naturally occurring asbestos (NOA). Eldorado Hills, Clear Creek, Garden Valley, and Slow Dusty Road are sites that have been studied. An investigation into whether any of the data collected for those sites is applicable to Hunters Point grading/earth moving and truck related activities

undertaken between April and August 2006 should be undertaken. If these data are not applicable, an activity-based sampling of grading/earth moving and truck related activities on another part of the Hunters Point site should be considered if the activities and soil/rock characteristics are similar to the situation in Parcel A.

***Response*:** EPA and the State of California have done research in the past at the sites listed in the comment and lessons learned about dust mitigation and asbestos monitoring were used in developing the dust and asbestos control measures at Hunters Point. However, each site has unique work conditions, geology and weather. Thus, the data from those sites are not as applicable to an evaluation of conditions at Hunter Point as the three plus years when grading, excavating and earth moving activities were occurring with proper monitoring.

Comment 4: Asbestos fibers are not connected to the community health outcomes reported, such as headaches, bloody noses, adult onset asthma, respiratory symptoms, nausea and vomiting. In 2007 the California Department of Public Health (CDPH) stated the following in a public health report (CDPH, September 10, 2007):

> "CDPH has reviewed the equipment being used to monitor dust and a limited set of the dust data. According to the manufacturer, the instrument that has been used to monitor dust at Parcel A is designed for personal/breathing zone monitoring, plant walk-through Hunters Point Asbestos Technical Advisor Report 4 surveys, remediation site worker exposure monitoring, and indoor air quality. The instrument being used is sensitive to moisture and is a passive sampler. Dust monitors that are approved for PM 10 ambient air standards by the California Air Resources Board are all active samplers. Further, there are dust monitors available that are designed for outdoor applications where moisture is present. Due to the novel application of the equipment for fence line monitoring, CDPH is not able to interpret whether dust exposures in the community occurred that would explain some of the community health complaints such as headaches, bloody noses, adult onset asthma, respiratory symptoms, nausea, and vomiting. We recommend using dust monitors that have been certified for fence line monitoring."

***Response*:** EPA called the manufacturer of the dust monitoring equipment and the equipment is appropriate for outside use at this site. The only effect of moisture would be to make the equipment report a result that is higher than the true value. This is because the dust monitoring equipment uses a light beam to measure changes in opacity due to incoming particulates, and moisture would increase the opacity. Thus, the only error would lead to more protective and conservative results. EPA agrees with the comment that asbestos would not be expected to cause any of the effects claimed by several members of the community.

Comment 5: It is uncertain whether additional air monitoring was performed for dust or other non-asbestos contaminants. The community has shared metal concentrations analyzed from wipes reportedly taken near the site in 2007. Some of the metals concentrations are above the reporting limits listed on the data sheets. Data for these and other contaminants might explain the health consequences reported by community members.

***Response*:** The TASC contractor provided results to EPA from a community supplied wipe sample taken from a car parked near Parcel A. EPA has no information what process was followed to collect the samples. The samples were analyzed by Micro Analytical Laboratories, which is a certified lab. EPA developed screening criteria for evaluating home wipe sampling as part of the 9/11 response. The comparison below shows that all of the results from the Hunters Point wipe sample except lead are far below EPA's health screening criteria. The lead in this sample is not likely to be related to development work because lead concentration in the soil is much lower than several other metals such as arsenic and nickel, and those metals are present in the wipe sample at concentrations less than the lead concentration. The lead is also not likely to be related to Navy excavations because the Navy monitors airborne dust at all excavations for lead and the results are below health based screening criteria. The Detection Limit listed in the Table represents the lowest concentration that the laboratory is capable of detecting and is not related in any way to a health based screening level. Note that EPA has changed the term Reporting Limit from the comment to Detection Limit.

Analyte	Analysis Results ug/sq. ft	Detection Limit ug/sq. ft.	EPA Screening Criteria ug/sq. ft
Arsenic	<5.0	5.0	36
Barium	24	5.0	10,219
Chromium	7.9	5.0	437
Copper	19	2.5	5,825
Nickel	11	2.5	2,917
Lead	14	2.5	2.3
Silver	4.5	1.3	728
Vanadium	2.7	0.5	938
Zinc	81	10	43,664
Mercury	0.07	0.05	42

Specific Recommendations from the TASC Report:

Recommendation 1: Further investigate community concerns regarding work stoppages not occurring when exceedence alarms were triggered. The failure to follow and implement the protocols established in the Asbestos Dust Mitigation Plan could limit its effectiveness and seriously impacts the community's perceptions about the effectiveness.

***Response*:** EPA confirmed with the Air District inspector that the work stoppages are enforced when samples results are above the trigger level. To clarify the process: The asbestos filters are in place collecting asbestos for 24 hours. They are collected daily and sent to an off-site laboratory for analysis. The results then come back one day after the measurement. EPA has investigated shortening this timing but because of the complexity of measuring asbestos, there is no way to speed this process. Work stops when the results above the trigger level come back from the lab and may not start again until there is a day when all monitoring stations in the Asbestos Dust Mitigation Plan are below the trigger level. Even though the work stoppage occurs after the event, the sampling still serves the intended function of enforcing the Asbestos

Dust Mitigation Plan by providing feedback on the effectiveness of the dust mitigation efforts and providing a strong incentive for compliance. As a side note, there are no alarms on any of the monitors.

Recommendation 2: Review the monitoring frequency for each station to ensure that the mitigation plan is being followed. Whether monitoring should take place during periods when no official work is being done on the site (including weekends) should also be reviewed.

***Response*:** Nine out of the ten stations are monitored daily during work activities. One station, HV-8, is monitored one day per week on a random basis. This is specified in the Asbestos Dust Mitigation Plan because HV-8 represents up-wind conditions. The data tables show that the monitors are operating on the required days. EPA agrees with the Air District that monitoring is appropriate during work days and is not necessary on non-work days. Even on work days, the vast majority of results are non-detect and 98% of the results are below the trigger level. EPA's expectation is that non-work days would have a lower possibility of dust and asbestos generation. While there is no monitoring on non-work days, the requirements for soil management such as stockpile control are still the same as on work days.

Recommendation 3: Using one of the procedures outlined above (community air sampling, modeling or extrapolation), estimate asbestos fiber release from the grading/earth moving and truck related activities that occurred between April and August 2006.

***Response*:** EPA believes that use of the three and a half years of existing data to represent the three month data gap is the most representative of conditions at the site. See the Response to Comment 3 above for additional detail.

Recommendation 4: Revise the conclusions of EPA's Draft Technical Summary (last paragraph) to more specifically reflect what is supported by the analysis.

***Response*:** Agreed, this comment is addressed in the final version of the Report.

Recommendation 5: Investigate asthma and nosebleed concerns raised by local residents and determine whether these health issues may be related to non-asbestos contaminants (particularly metals and particulates).

***Response*:** Residents in the BVHP neighborhood experience higher rates of asthma hospitalization and emergency room visits than most other neighborhoods in San Francisco. These higher hospitalization rates have been observed for about 15 years that data have been collected and pre-date the development work at Parcel A. There are a variety of social and environmental conditions in the community outside the shipyard that contribute to these disparities. While the asthma rates in Hunters Point are relatively higher than the rest of the city, the rates have also decreased in BVHP substantially over the last fifteen years due to coordinated City asthma policy and action on clinical and environmental factors.

There are no health data available concerning nosebleeds in Hunters Point. Members of the community have asked about chromium and nosebleeds at public meetings. Workers in plating shops exposed to chromic acid mist can develop deterioration in nasal tissues. However, this effect is caused by industrial exposure to high levels of chromic acid mist and chromium in soil has not been found to cause this problem. Finally, the chromium in soil at Hunters Point is the type called Cr(III). This is much less hazardous than hexavalent chromium, or Cr(VI). The particulate concentrations measured at the work site are less than EPA's national ambient standards.

Recommendation 6: On a minor note, it is also recommended to use the same units for expressing asbestos quantities in reports. There is some confusion caused by the various ways in which the air sample data are presented. Asbestos air monitoring data is usually expressed as asbestos structures per cubic centimeter (str/cc). Exceedence reports use structures per cubic meter and the EPA Draft Technical Summary uses scientific notation. An example of the conversion is: 16,000 str/cubic meter = 0.016 str/cc = 1.6E-2 str/cc. It would be much clearer if all used the same method of expressing the data.

***Response*:** Agreed, this comment is incorporated in the final version of the Report.