AEROSPACE CONTAMINATION MUSEUM OF EDUCATION

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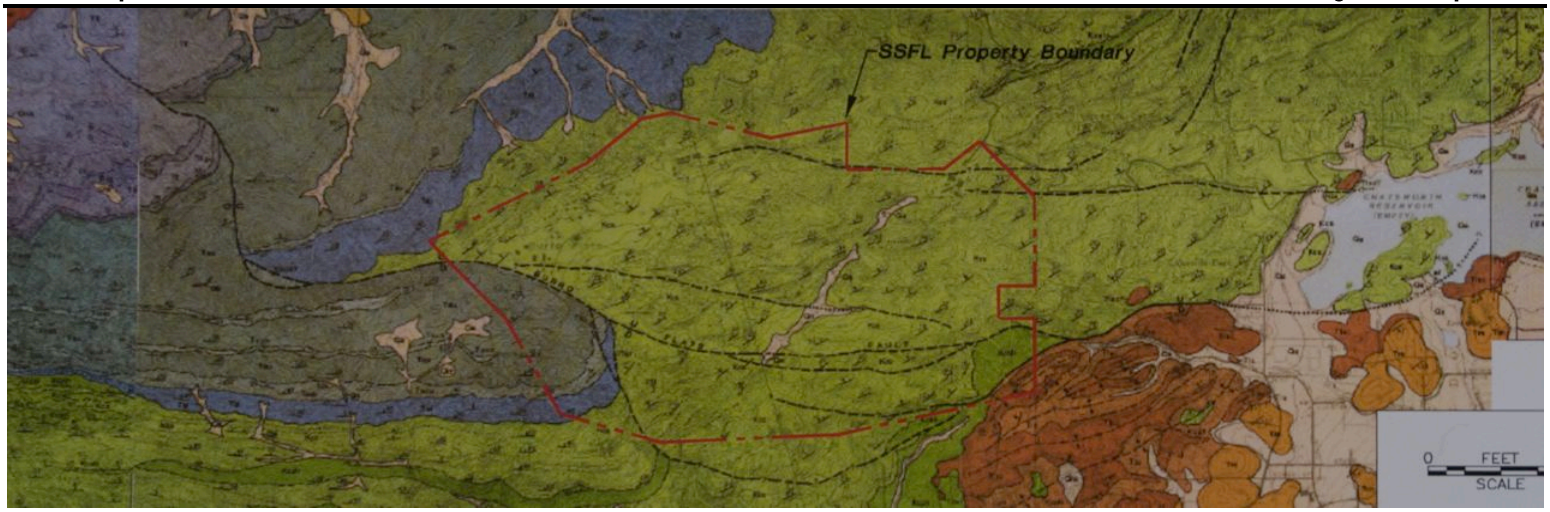
Learn about the cleanup of the Santa Susana Field Laboratory.

Buck King, Senior Engineering Geologist
Department of Toxic Substances Control (DTSC) 700 Heinz Avenue, #200, Berkeley, CA 94710

8/31/2011
(Via Electronic Mail)

Aerospace Contamination Museum of Education Comments – Sitewide Groundwater Remedial Investigation Report



Dear Mr. King,

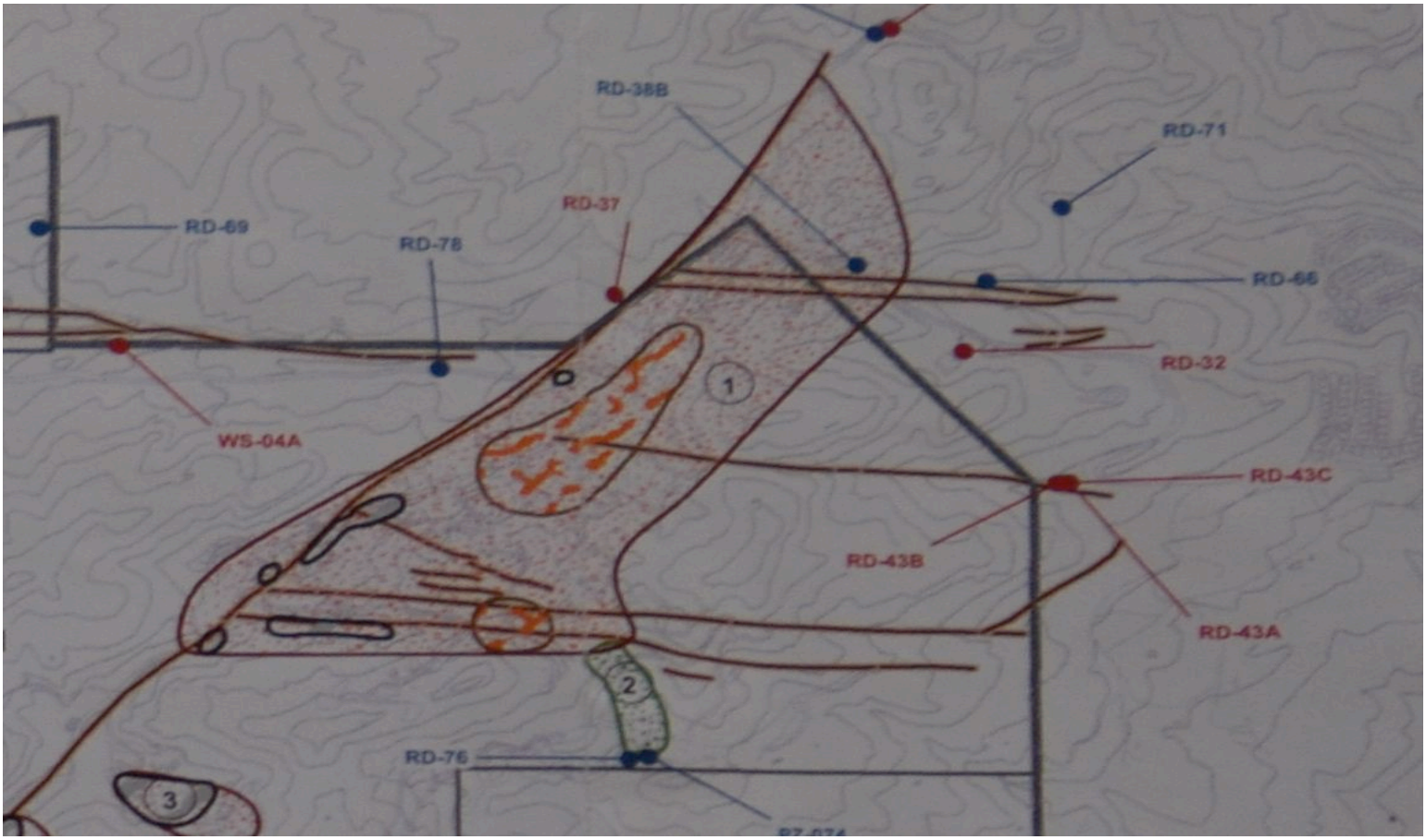
The following are comments for consideration and a possible revision of the above referenced document regarding the Santa Susana Field Laboratory (SSFL) investigation of groundwater contamination. There are many unanswered questions regarding the potential for offsite migration of the contaminants found at the SSFL. In March of 2008, it was written that the "City of Los Angeles has lost the ability to pump 47 percent of it's wells in the SFB [San Fernando Basin]" due to "Increased concentrations of primarily Trichloroethylene (TCE)" READ LETTER BELOW…

http://www.acmela.org/images/DWP_Nahai_to_EPA_Nastri_San_Fernando_Groundwater_March_7_of_2008.pdf

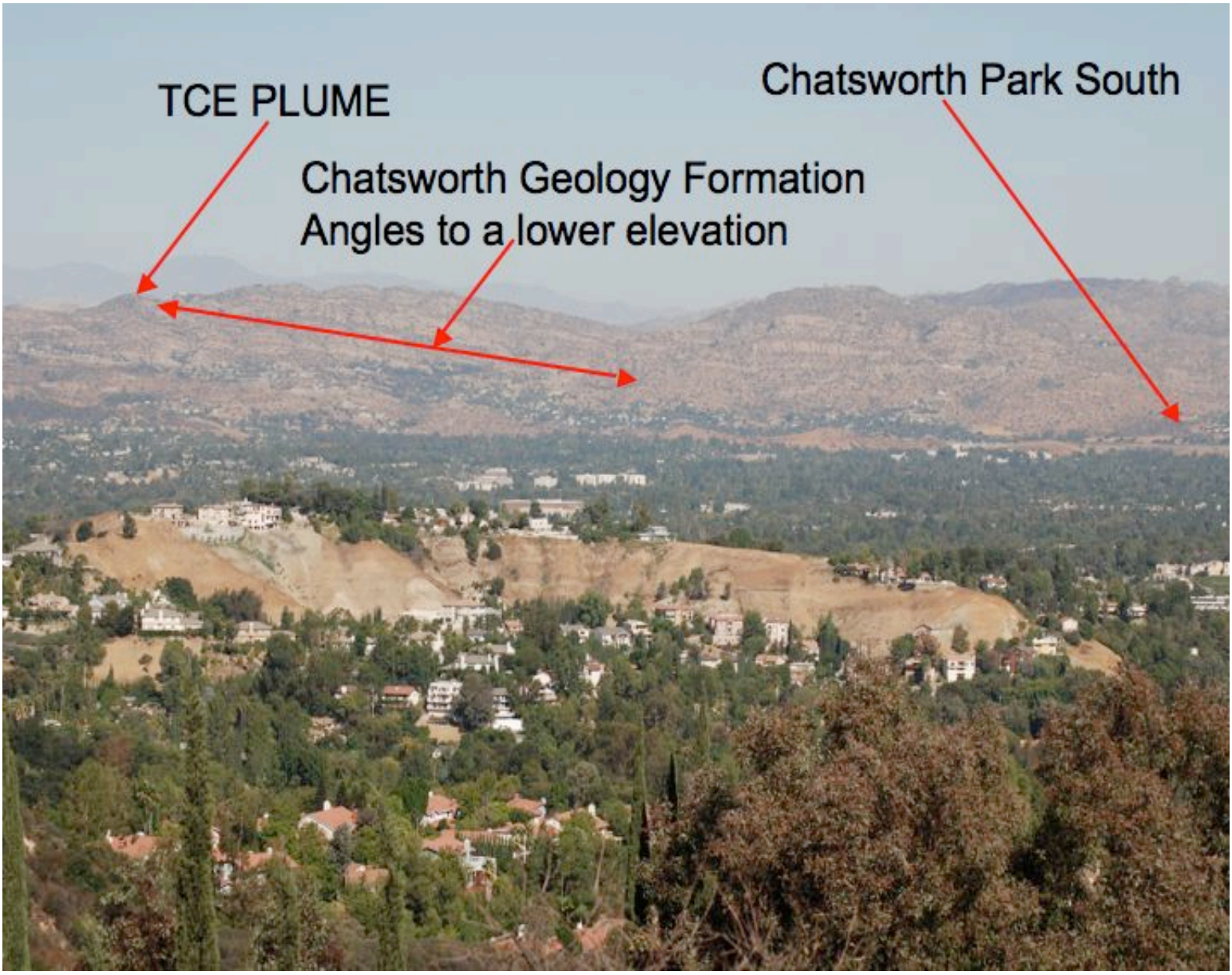
TCE was detected in 355 of the 425 monitoring wells at the SSFL and an extensive offsite investigation is needed as an addendum to this document. Other pathways of offsite groundwater exist with faults and structures that include the Burro Flats Fault as illustrated above in the Thomas Dibblee Geology Map. The fault intersects the SSFL and takes it offsite in two directions, East into the Chatsworth Reservoir and West into Runkle Canyon. With the development of the Sodium Reactor Experiment, the pathway into the reservoir was considered in the 1954 Preliminary Safety Evaluation…

http://www.acmela.org/images/Prelim_Safety_Evaluation_SRE_Feb_19_of_1954.PDF

No studies have been done to the West, yet contamination has been found in groundwater in Simi Valley and the Windmill Well in Runkle Canyon.



There is a known TCE plume (Shown ABOVE) migrating in the direction of the estimated 70 deep-draw down wells actively pumping 24/7 and releasing untreated groundwater from the Chatsworth Train Tunnel No. 26. (Shown Below).



Every day 4300 Gallons are released into the Chatsworth Park South Watershed and then into the Los Angeles River. An additional 4600 gallons per day are released into Simi Valley through the other end of the tunnel, these pumps are running 24 hours a day.

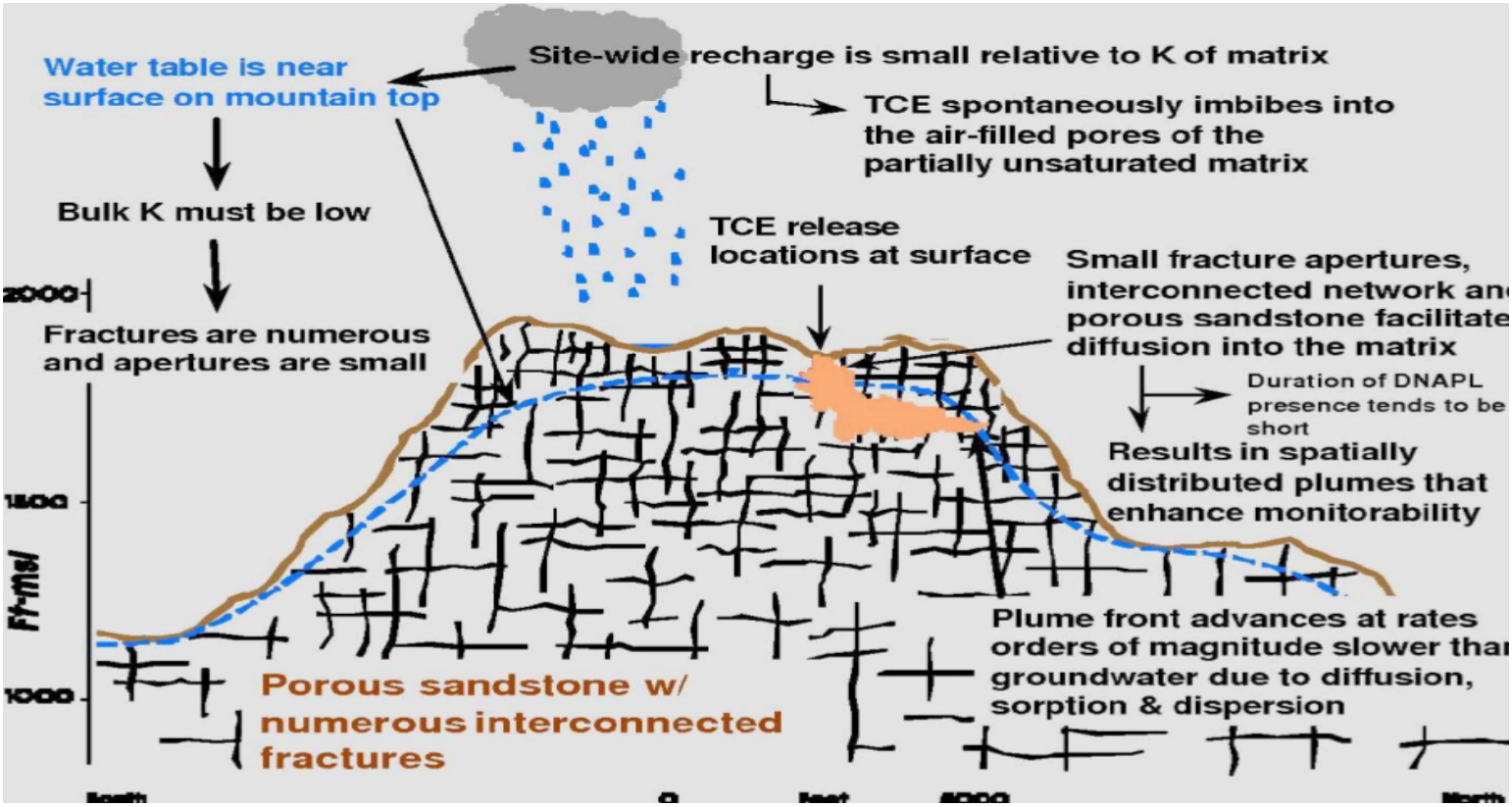
In the year 2001, SSFL co-owners NASA and The Boeing Company turn off their groundwater "Pump and Treat" systems. In the same year these 70 deep-sump de-watering devices were installed inside the Chatsworth Train Tunnel no. 26. These draw thousand of gallons of groundwater on a 24 hour a day schedule and dump it into the Los Angeles River via a drainage system in Chatsworth Park South. This pumped groundwater meets the Los Angeles River via Santa Susana Creek coming from Chatsworth Park South storm drainage systems. With the Boeing and NASA systems offline, these 70 tunnel pumps could be drawing contaminated water further offsite than we are comfortable with or have previously known.

Another problem we have is the "Subsidence" of groundwater during extraction.

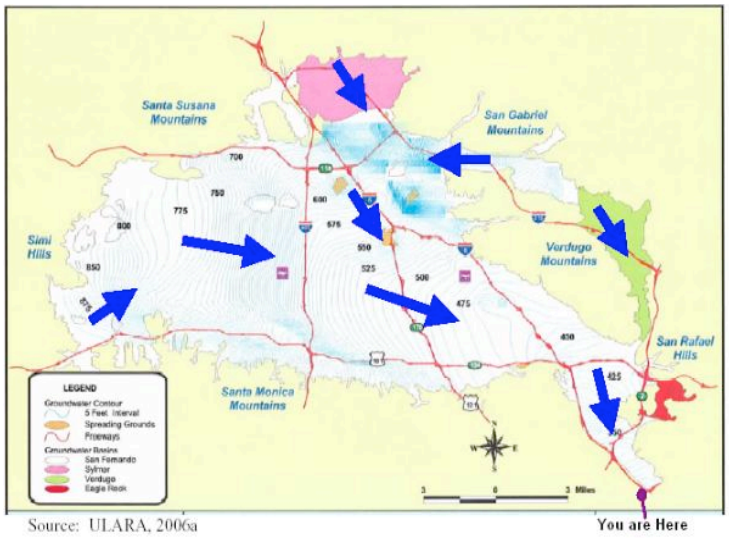
Subsidence that results from groundwater withdrawal can be responsible for numerous structural effects. Most seriously affected are long, linear surface infrastructure facilities that are sensitive to slight changes in gradient or slope.

Drainage courses, roads, rail lines, wells, oil/gas pipelines, and utility (water, gas, power, and sewer) lines are potentially the most vulnerable to damage. Basically, the process by which this most important type of subsidence occurs involves the extraction of a large quantity of water from an unconsolidated aquifer. As water is removed from the aquifer, the total weight of the overburden that the water used to help to support is placed on the alluvial structure; the overburden can then become compressed. If fine-grained silts and clays make up portions of the aquifer, the additional load can squeeze the water out of these layers and into the coarser grained portions of the aquifer. All of this compaction produces a net loss in volume and hence a depression in the land surface.

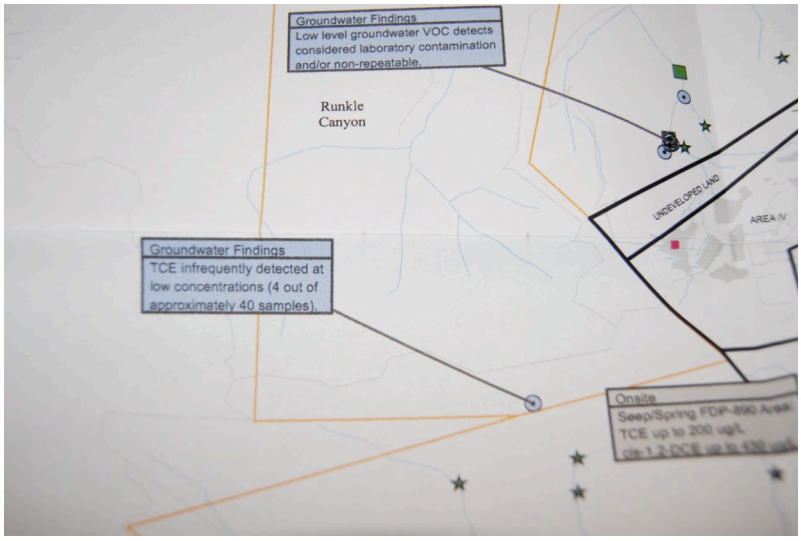
Keep in mind the 24 hours a day of sump-pumping extracting a large quantity of water from an unconsolidated aquifer.



The anisotropy that we see here is consistent with discussions as presented by The Boeing Company on the "Sheer Zone" and it's effects on the groundwater movement.



Source: ULARA, 2006a



The illustration to the left above represents the groundwater flow of the San Fernando Basin that clearly starts near the SSFL and takes a path following the Los Angeles River into Long Beach. The map to the upper right is the Runkle Canyon "Windmill Well" despite being a few hills away has detected TCE in several tests. This well is the headwaters to the Ahmanson Ranch Watershed, TCE and Perchlorate were found in this watershed that promted a cease of their development plan.

Thank you in advance for the consideration of my comments.

William Preston Bowling – Founder/Director
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