Community Biannual Update
Santa Susana Field Laboratory
April 12 , 2016

Department of Toxic Substances Control

Cal/EPA

Agenda

- Welcome and Team Introductions
- Presentation
  - SSFL Overview – DOE, NASA, Boeing Activities
  - Site-wide Groundwater Activities
  - Off-site conditions update
  - CEQA Update
  - Schedule Update
- Community Questions and Answers
- Wrap up

Guidelines for the Q&A Session

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DTSC's Mission

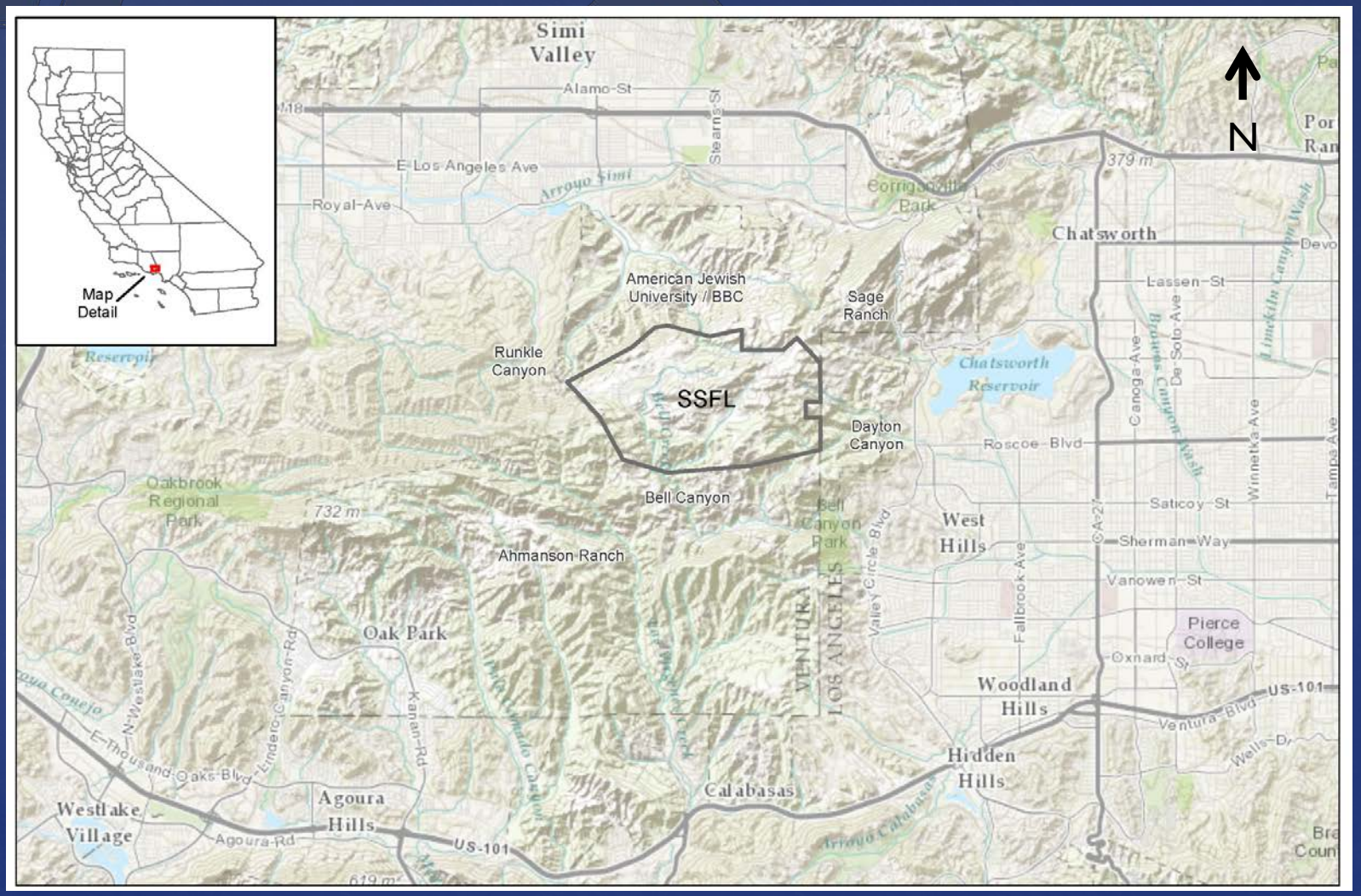
To protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

Santa Susana Field Laboratory

DTSC's SSFL Project Team

- Tanya Brosnan, Eng. Geologist – Technical Support
- Paul Carpenter, PG, CHG, Sr. Eng. Geologist - Project Manager
- Donald Greenlee, PhD, Sr. Toxicologist – Human Health
- Buck King, PG, CHG, Sr. Eng. Geologist, Technical Support
- Julie Lincoln, PE, Sr. Engineer – Project Manager
- Mark Malinowski, PG, Branch Chief
- Mindy Mathias, PE, Engineer, Technical Support
- Roger Paulson, PE, SSFL Unit Chief - Supervising Engineer
- Laura Rainey, PG, Sr. Eng. Geologist – Project Manager
- Marcia Rubin, MA, Public Participation
- Tom Seckington, PG, CHG, Sr. Eng. Geologist – Project Manager
- Matt Wetter, PE, Engineer, Technical Support
- Russ Edmondson, Public Information Officer
- Mazhar Ali, Los Angeles Regional Water Quality Control Board

Location of Santa Susana Field Laboratory

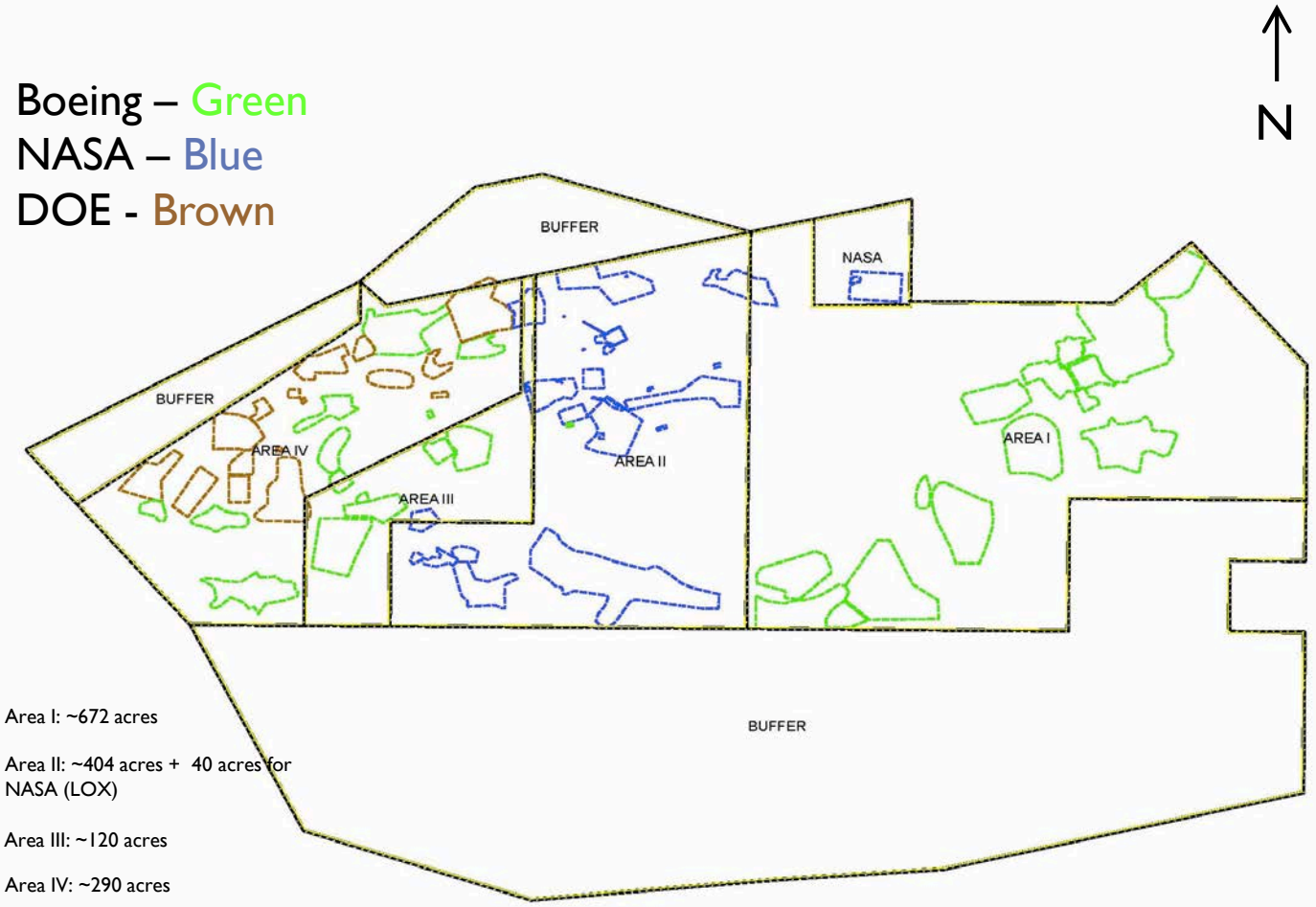


Cleanup Orders

- The Boeing Company – 2007 Consent Order
- NASA – 2010 Administrative Order on Consent
- DOE – 2010 Administrative Order on Consent

SSFL Areas & Sites

Boeing – Green
NASA – Blue
DOE - Brown



Area I: ~672 acres

Area II: ~404 acres + 40 acres for NASA (LOX)

Area III: ~120 acres

Area IV: ~290 acres

Southern Buffer:~1,143 acres

Northern Buffer:~182 acres

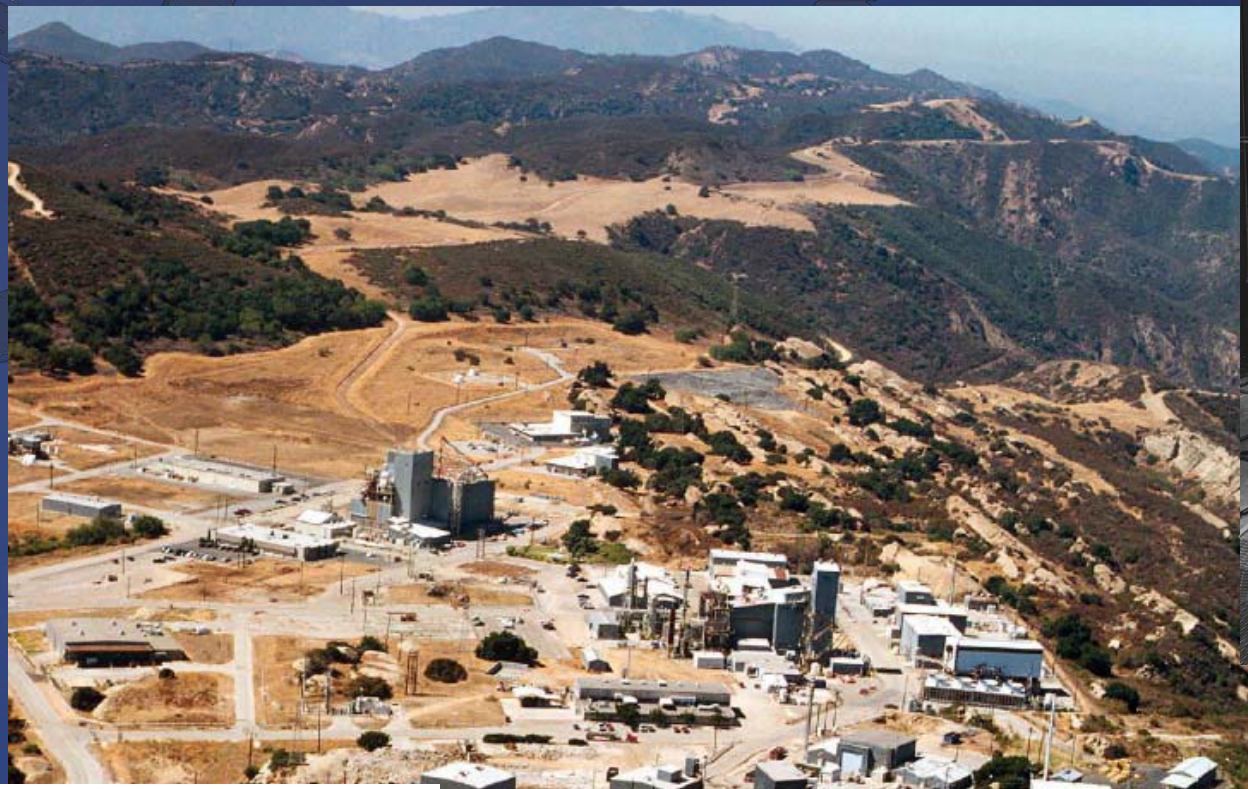
SSFL is ~ 2,850 acres

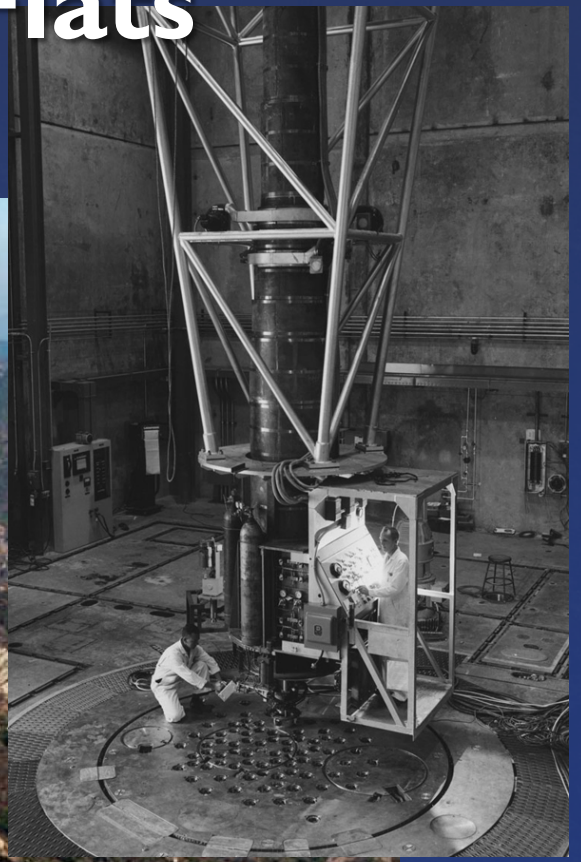
Investigation and Cleanup Process

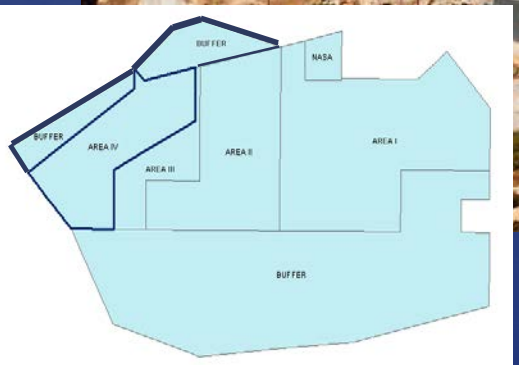
Facility Investigation	Corrective Measures Study	Proposed Remedy Selection	Final Remedy Selection and Cleanup Implementation
Determine the extent of soil and groundwater contamination	Evaluate potential cleanup alternatives	Proposed remedy available for public comment	After consideration of public comment a final cleanup plan is selected

Public Participation conducted throughout.
DTSC will apply and comply with CEQA.

DOE Area IV - Burro Flats







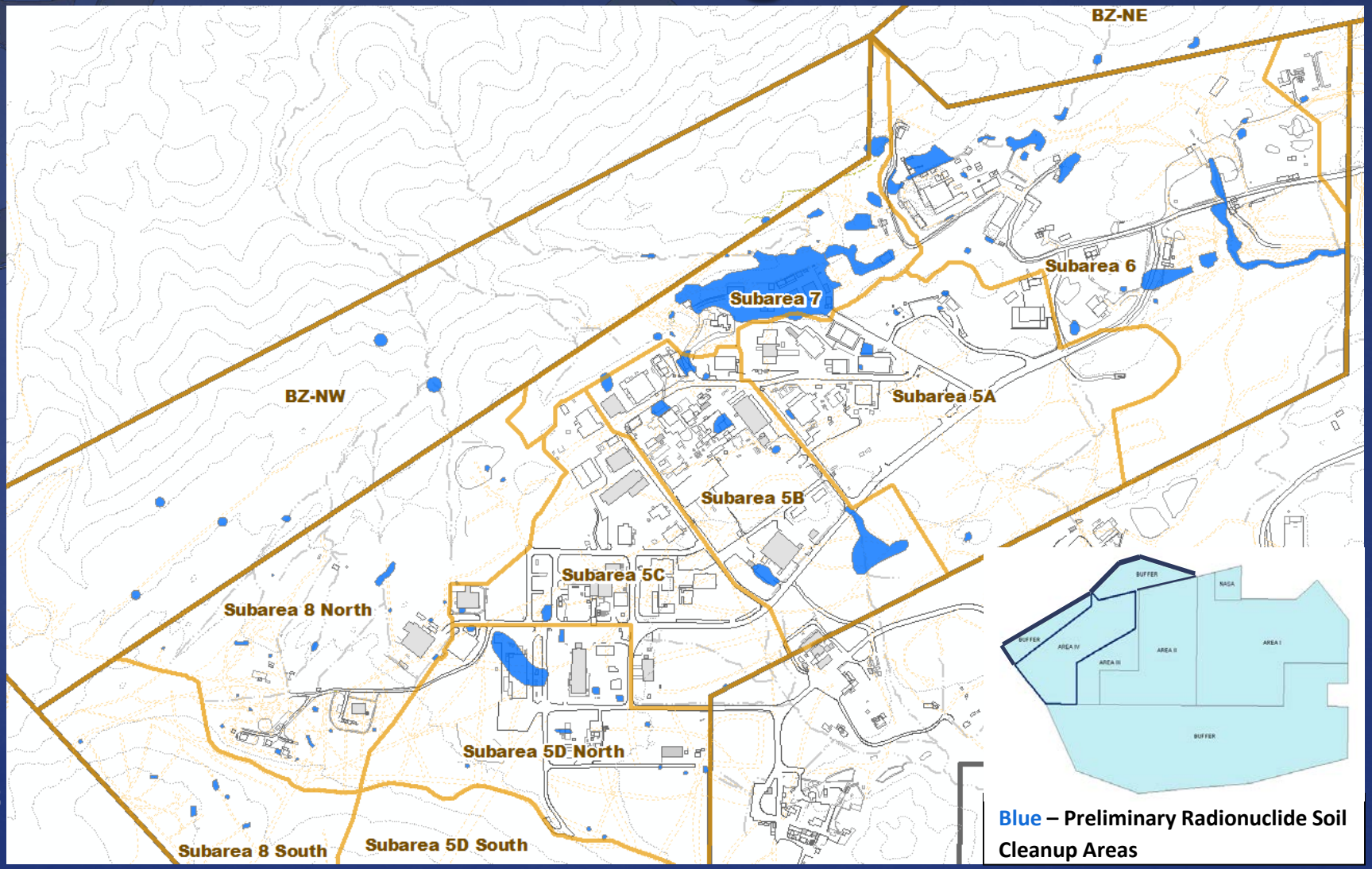
DOE Status

- Soils characterization program
  - Awaiting submittal of Data Summary Report

- Groundwater source investigations
  - Continuing

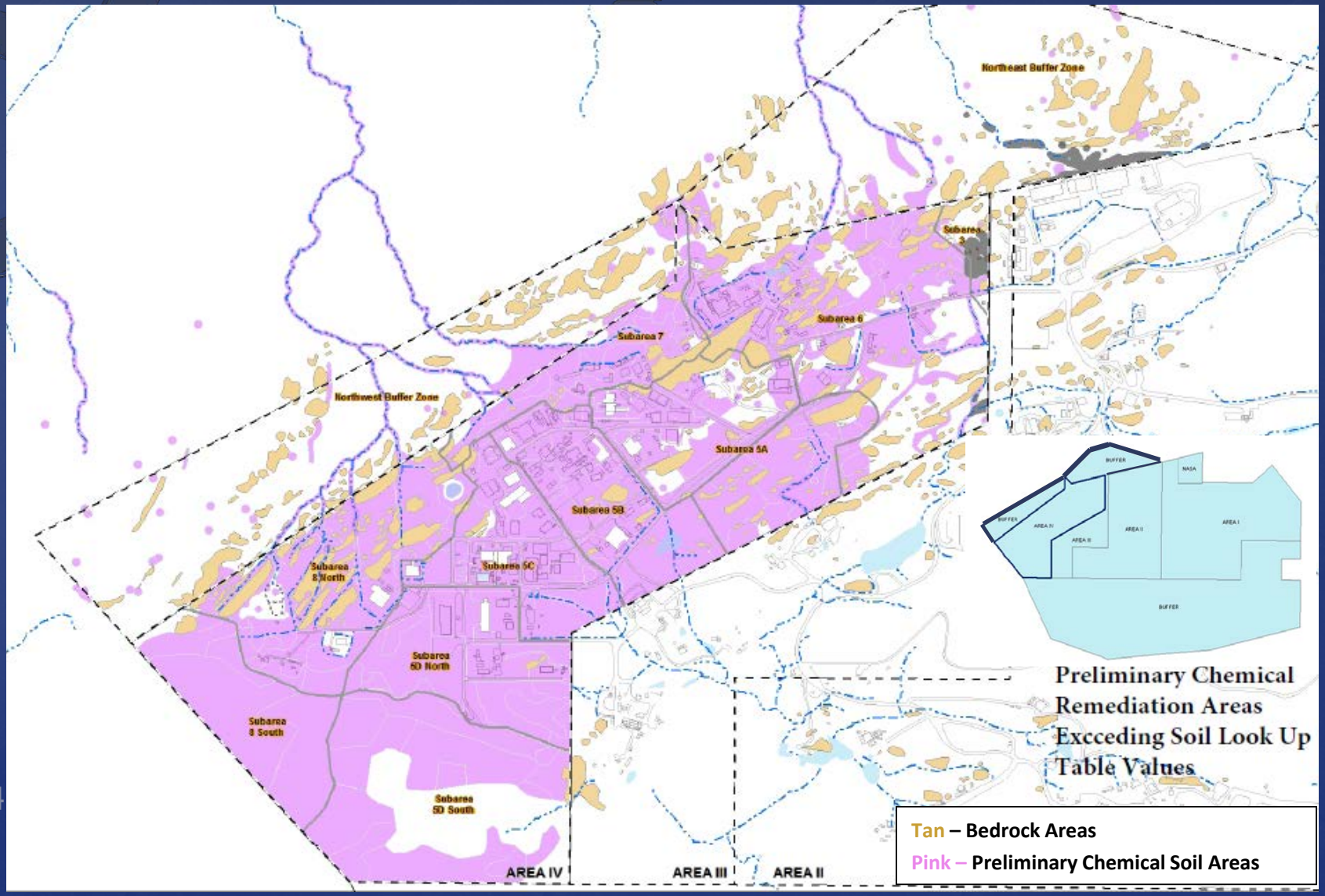
- Soil treatability studies
- Demolition program
  - To begin after DOE completes NEPA

Preliminary Cleanup Areas Radiological



Blue – Preliminary Radionuclide Soil Cleanup Areas

Preliminary Cleanup Areas Chemicals



NASA Coca Area Test Stands

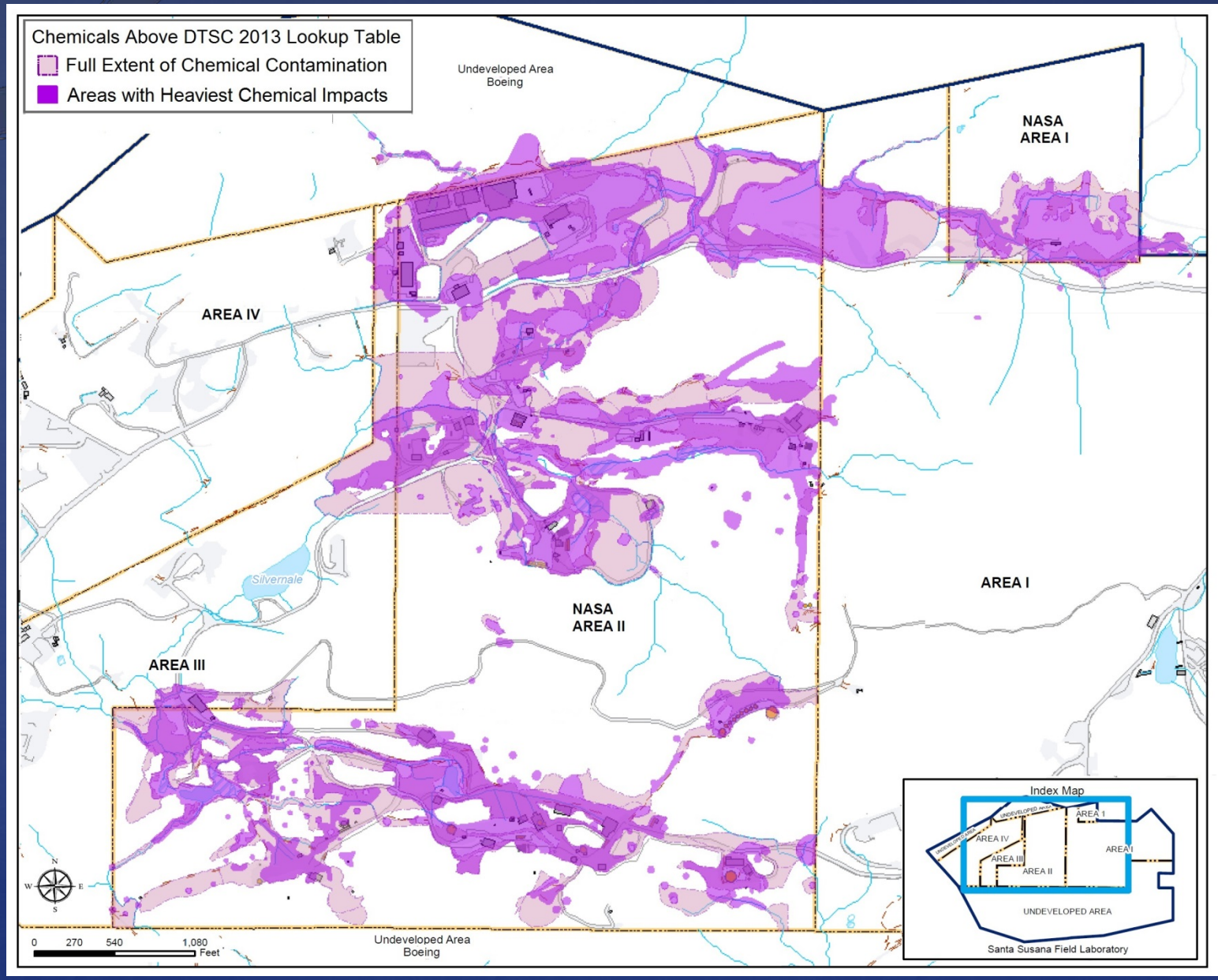
NASA Status

- Soils characterization
  - DTSC reviewed and provided comments on the Data Summary Report
- Groundwater
  - Four major investigation areas

Liquid Oxygen (LOX) Buildings

- Soil and groundwater treatability studies
- Demolition program

NASA Impacted Soils



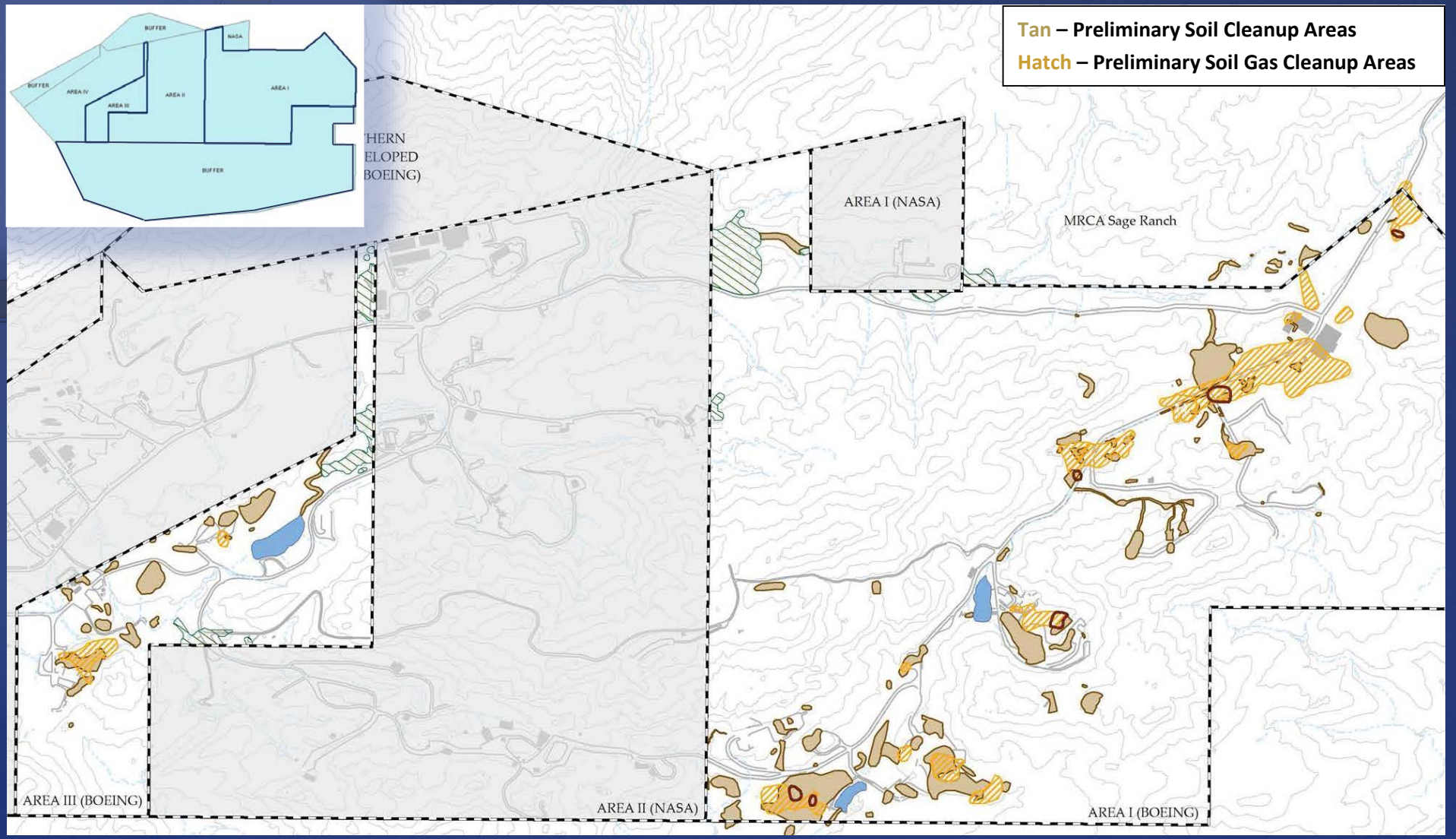
The Boeing Company - The Bowl

Boeing Status

- Soils characterization
  - Field work nearly complete
  - Two of Nine reports submitted
  - DTSC finalizing comments

- Groundwater
  - Major investigation areas almost complete
  - Treatability studies

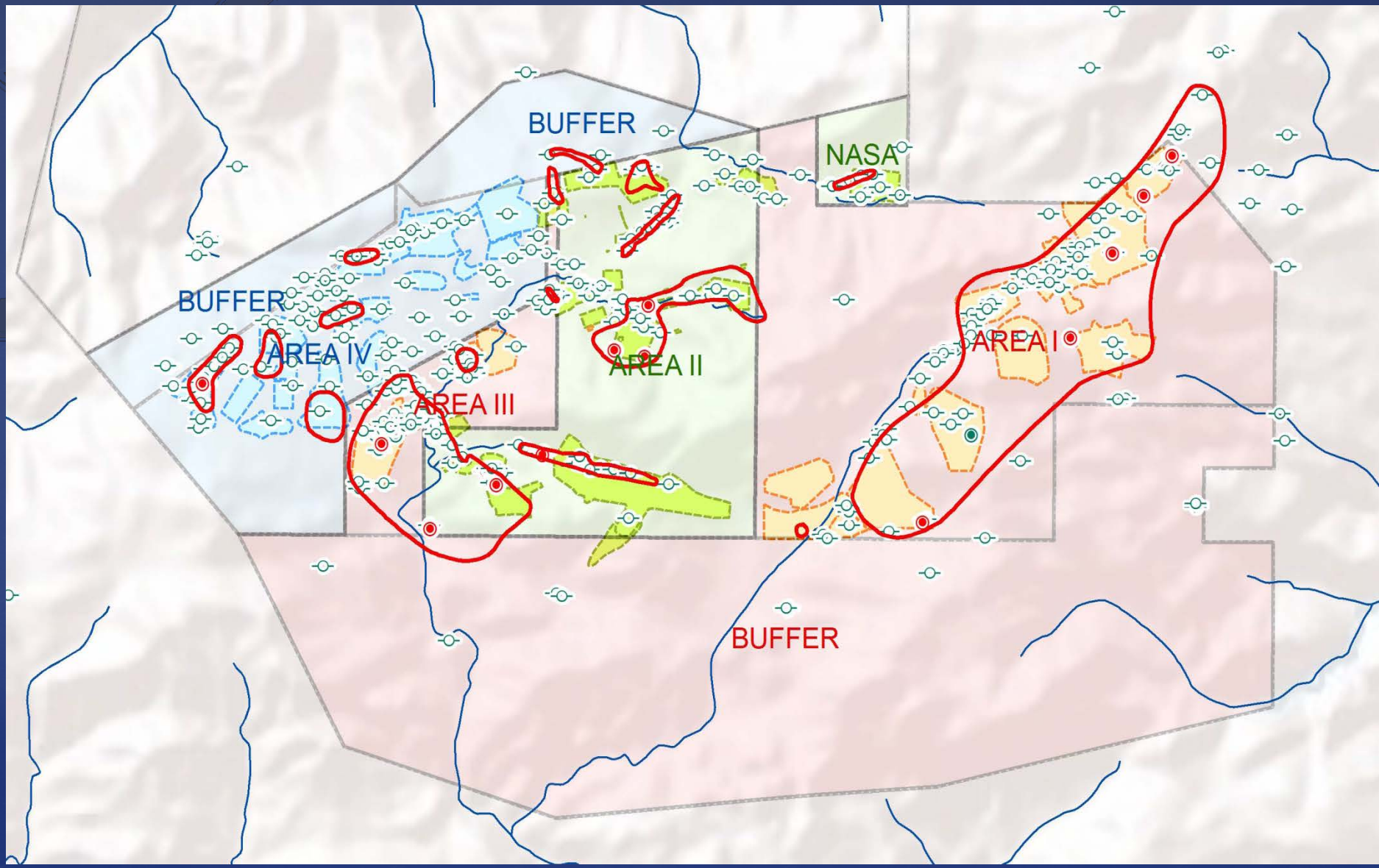
Boeing Soil Characterization



Site-wide Groundwater

- Facility Investigation
  - Continued characterization
- Groundwater Interim Measures
  - Operate wells from source areas
  - Implement in 2016
- Quarterly groundwater monitoring

Trichloroethene in Groundwater



Site-wide Groundwater

Boeing (Areas I and III)

- Submitted Site-wide Seep Characterization Report.
- Fault Characterization work is ongoing.
  - Four additional wells in Area 1
- 2 of 9 RFI Data Summary Reports submitted
  - Soil & Groundwater evaluations from overlying source areas.
- Treatability Study Field work for in-situ oxidation complete
- Laboratory studies of bio-degradation ongoing – Reports coming.

Site-wide Groundwater

- NASA (Area II)
  - Continued field work for four areas of impacted groundwater (AIGs) near completion.
    - 14 boreholes drilled
    - Geophysics conducted at 41 new boreholes and existing wells
    - Packer Testing conducted at 41 locations
    - Vapor sampling conducted in selected boreholes
    - Passive soil vapor sampling at AIGs
    - Aquifer Testing at AIGs
    - Reporting in mid-2016
  - Field work for the treatability study for bedrock vapor extraction completed.

Site-wide Groundwater

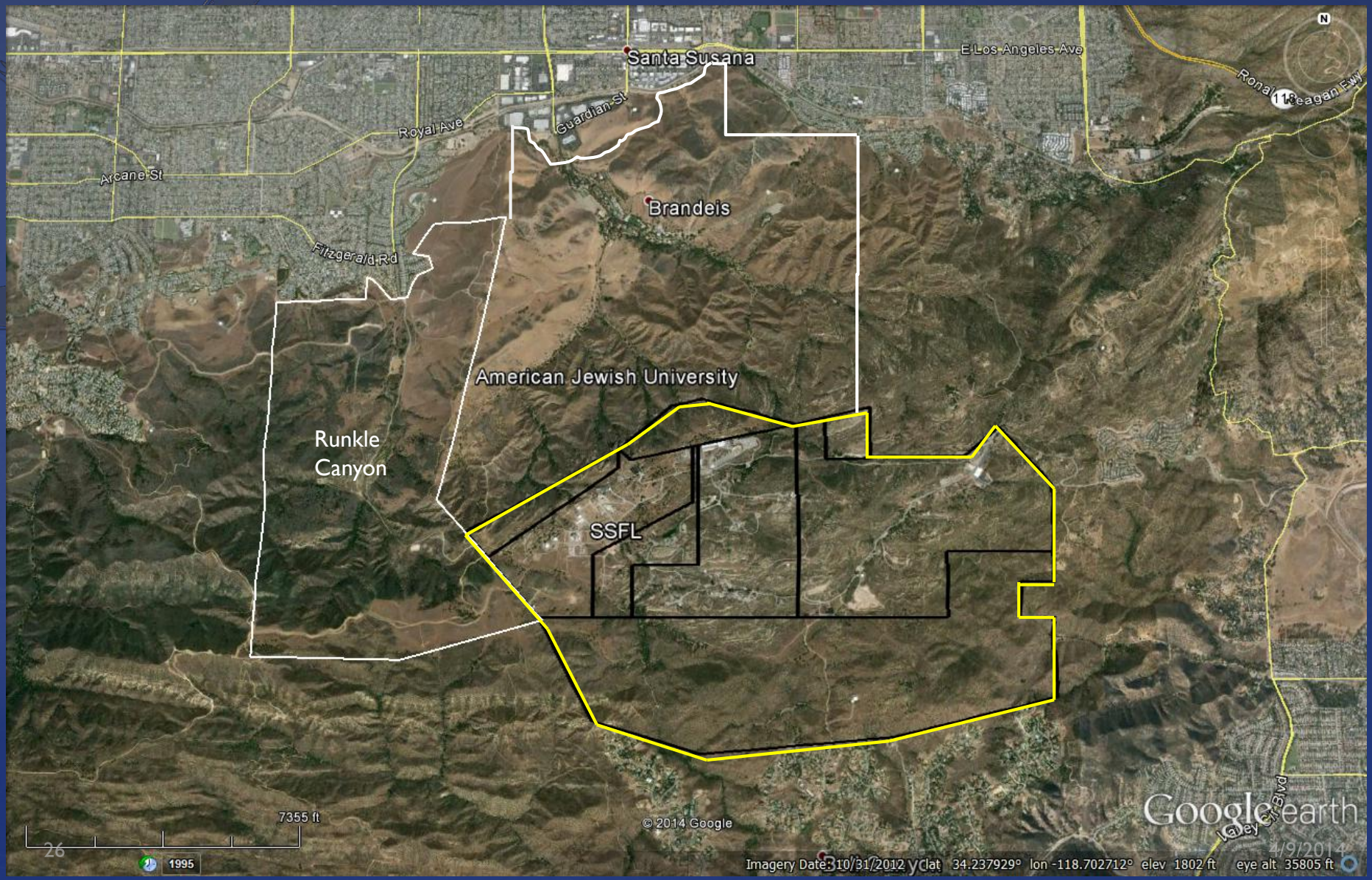
DOE (Portions of Area IV)

- DTSC approved Final RFI Groundwater Work Plan
- Implementating Work Plan. Field work includes:
  - One Exploratory boring
  - 10 monitoring wells
  - Well rehabilitation (removal of FLUTe liners)
  - Gauging/sampling of monitoring wells and seeps/springs
  - Packer tests and borehole geophysics/video logging - select wells

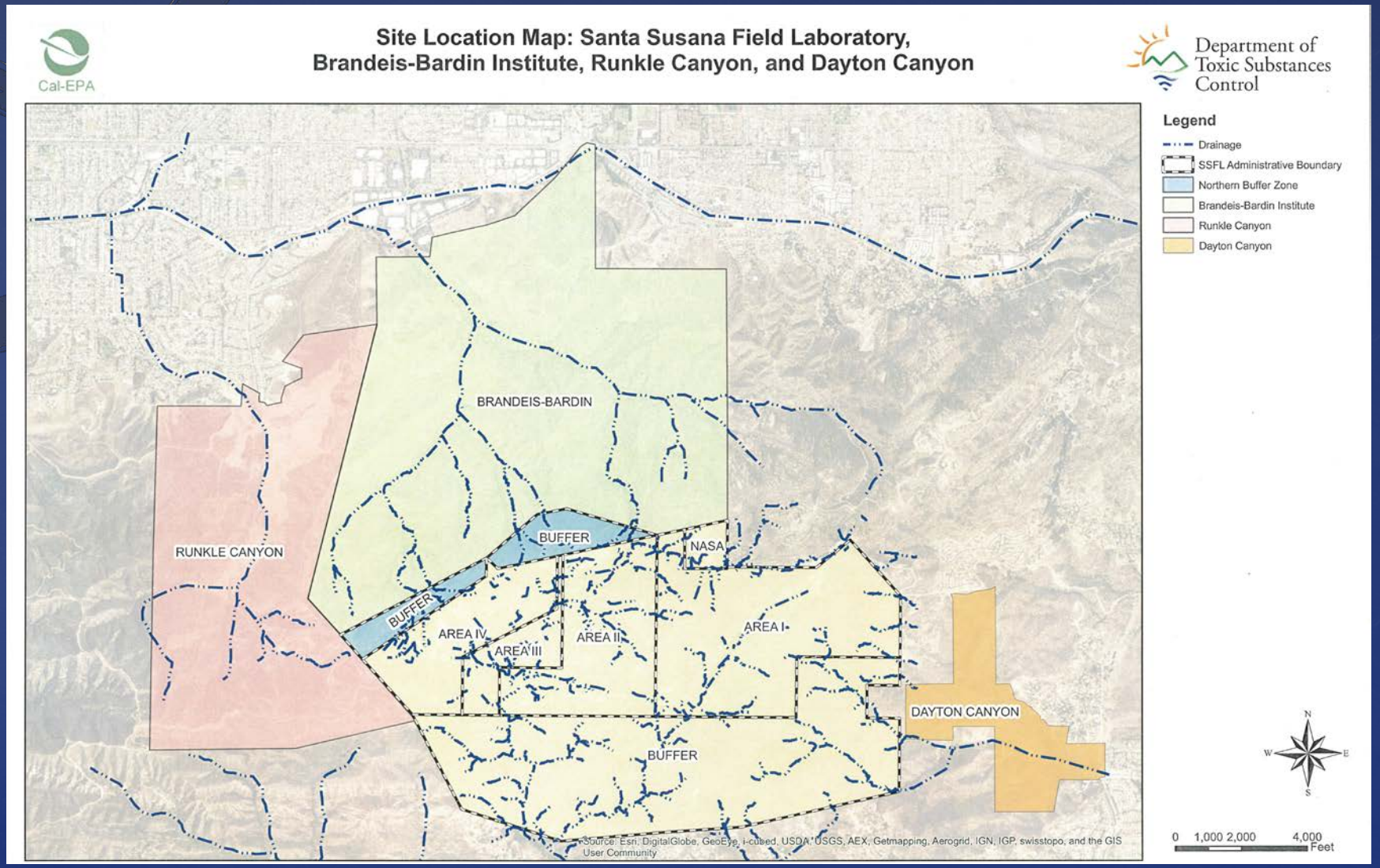
Boeing (Area IV)

- DTSC review – Groundwater Data Gap Work Plan Addenda for Boeing Area IV.

Off-site Issues



SSFL & Off-site Drainages



Brandeis Bardin Property – DTSC Conclusions

- The Brandeis Bardin Institute Campus is safe for use by Faculty, Staff, Students, and Campers.
- Measures have been taken to prevent SSFL contamination from traveling onto Brandeis Bardin property.
- A physical Buffer Zone separates Brandeis Bardin and SSFL.

Any data demonstrating a threat to human health at Brandeis Bardin or any other areas from SSFL would result in DTSC taking immediate actions to stop that threat.

Figure 3 - Strontium-90 (pCi/g) Soil Analytical Data Compared to the SSFL Soil Residential Risk-Based Screening Level (RBSL)

Cal-EPA

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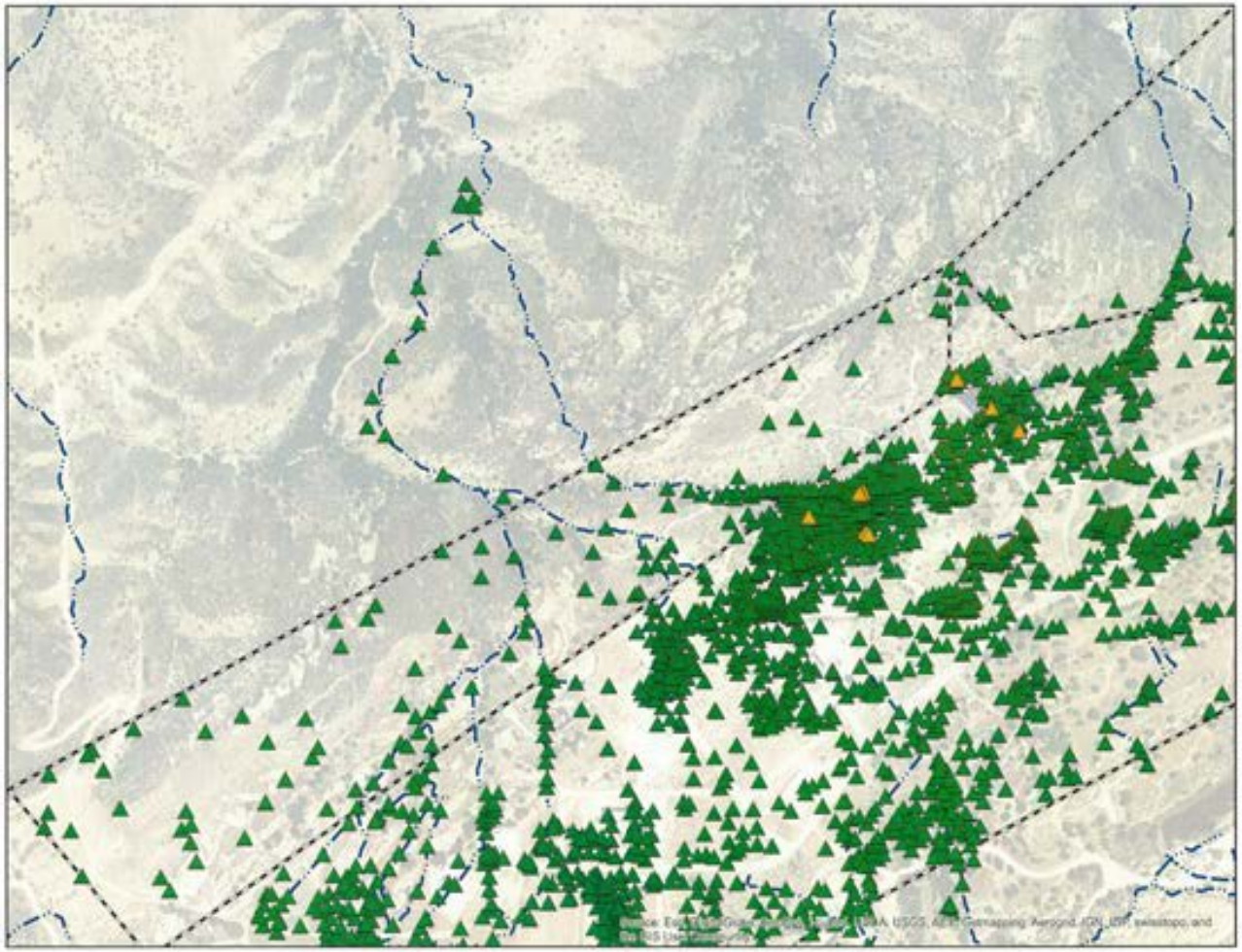
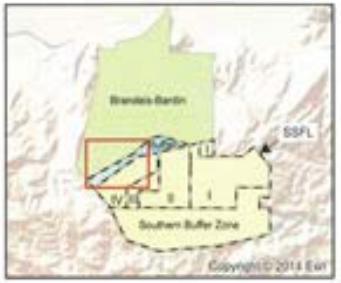


Legend

Soil

▲ <=SSFL Soil Residential RBSL (3.85 pCi/g)

▲ > SSFL Residential RBSL



Source Data: Provided by Boeing from EDMS database, EPA database, Rutherford database, and VDMS database.

Offsite Data References:
1992 Strontium-90 data: McLaren/Hart Environmental Engineering Corporation, 1993. Multi-Media Sampling Report for the Brandeis-Bardin Institute and the Santa Monica Mountains Conservancy. March 10. Online at: http://www.dtsc-ssfl.com/files/lib_rcra_soils/group_vii/historical_docs/PDF_Files/HDMSE00082594.pdf.

1994 Strontium-90 data: McLaren/Hart Environmental Engineering Corporation, 1995. Additional Soil and Water Sampling, Brandeis-Bardin Institute and the Santa Monica Mountains Conservancy. January 19. Online at: http://www.dtsc-ssfl.com/files/lib_rcra_soils/group5/historicaldocs/PDF_Files/HDMSE00097926.pdf

0 250 500 1,000 Feet

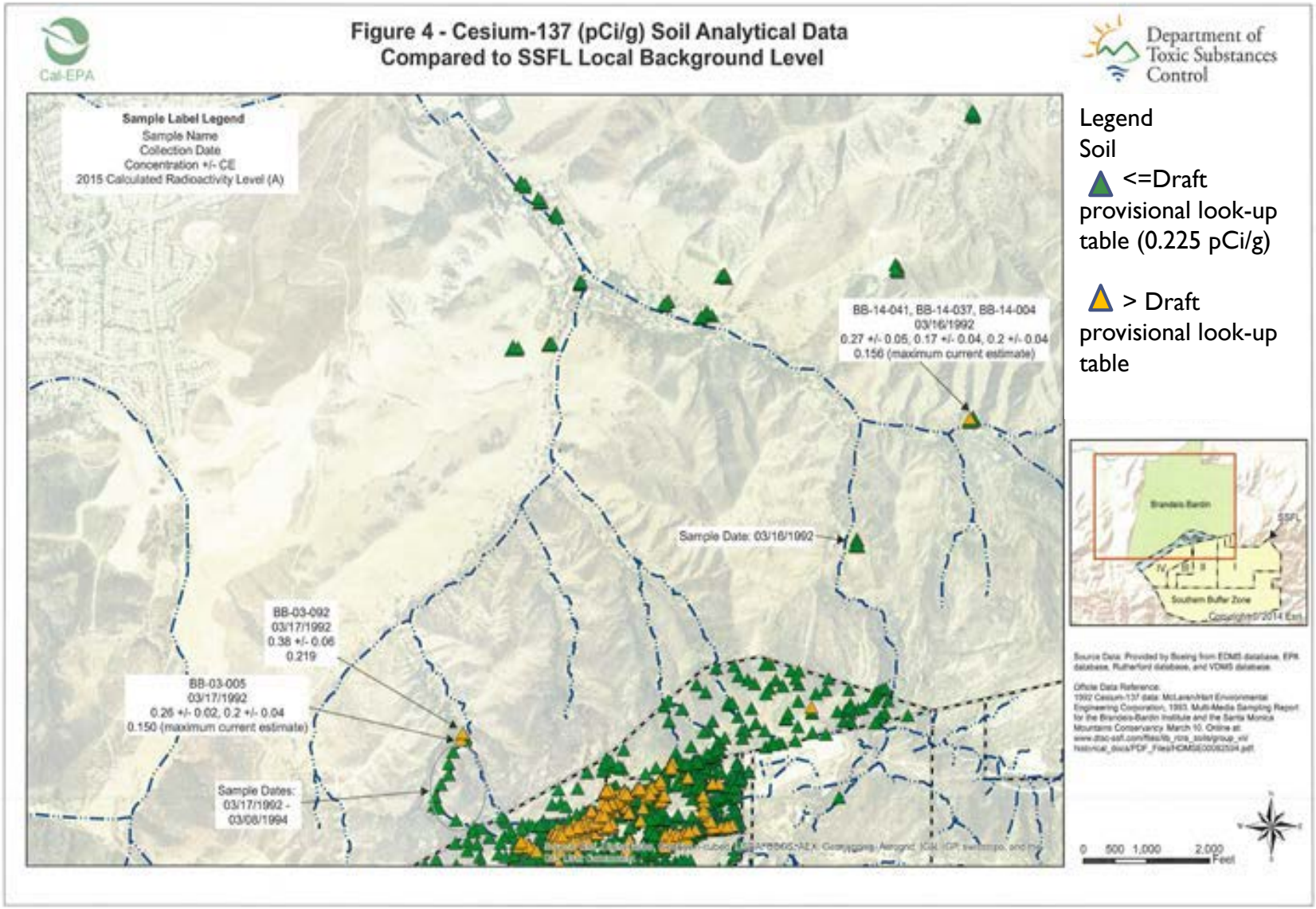


Figure 4 - Cesium-137 (pCi/g) Soil Analytical Data
Compared to SSFL Local Background Level
Cal-EPA
Department of Toxic Substances Control
Sample Label Legend
Sample Name
Collection Date
Concentration +/- CE
2015 Calculated Radioactivity Level (A)
BB-14-041, BB-14-037, BB-14-004
03/16/1992
0.27 +/- 0.05, 0.17 +/- 0.04, 0.2 +/- 0.04
0.156 (maximum current estimate)
Sample Date: 03/16/1992
BB-03-092
03/17/1992
0.38 +/- 0.06
0.219
BB-03-005
03/17/1992
0.26 +/- 0.02, 0.2 +/- 0.04
0.150 (maximum current estimate)
Sample Dates:
03/17/1992 -
03/08/1994
Legend
Soil
<=Draft provisional look-up table (0.225 pCi/g)
> Draft provisional look-up table
Brandeis Bardin
SSFL
Southern Buffer Zone
0 500 1,000 2,000
Feet

Runkle Property – DTSC Conclusions

DTSC reviewed data from both Runkle and SSFL.

- DTSC's sampling efforts indicate no radiological contamination and did not confirm the earlier elevated levels. DTSC evaluated the entire 2005, 2007 and 2010 data sets.
- No pattern to indicate an on-site source or off-site release from Santa Susana Field Laboratory.

4/9/2014

To access the Runkle Property information visit DTSC's EnviroStor website:
https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000899

Site-wide California Environmental Quality Act

- Draft Program Environmental Impact Report (PEIR)
  - Will assess potential environmental impacts:
    - Implementing clean-up for all three responsible parties
    - Alternative routes/conveyance systems for material transport
    - To the full range of resources areas including cultural and biological
- Public review and comment period for the draft PEIR anticipated in September 2016

Milestones for Next Six Months (Soils)

DOE

- Review Data Summary Report for the soil investigation
- Develop initial draft cleanup goals & remedies in a draft decision document for first project

NASA

- Review revised Data Summary Report
- Develop initial draft cleanup goals & remedies in a draft decision document for first project

Boeing

- Continue review and submittal of comments on the soil investigation reports
- Review initial Corrective Measure Study
- Develop initial draft cleanup goals & remedies in a draft decision document for first projects

Milestones for Next Six Months (Groundwater & CEQA)

Groundwater

- Start-up Groundwater Interim Measures
- Continue Investigation
  - Install groundwater monitoring wells, conduct aquifer tests
- Review and assess
  - quarterly reports, draft Seeps/Springs report, fault study reports, source zone workplans and reports

CEQA

- Issue Draft Program Environmental Impact Report
  - Public Review and meetings

DTSC Community Outreach

- DTSC- SSFL Website

  http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab/index.cfm

- Monthly Updates
- Calendar of SSFL Events
- Public comment periods
  - Public Meetings

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