Phase 3 Chemical Data Gap Sampling – Northern Buffer Zone and "Go-Backs"

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Agenda

<u>Time</u>	<u>Topic</u>	<u>Presenter</u>
9:30 am	Introduction and DOE Update	John Jones
9:45 am	Phase 3 Criteria	Laura Rainey
10:00 am	Northern Buffer Zone Review and Sampling Plans including GIS	Buck King
10:30 am	Break	
10:45 am	Go Back Data Gap Criteria	Laura Rainey
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DOE ETEC Fiscal Year 2014 Priorities

- Complete AOC Phase 3 data gap sampling by early calendar year 2014
- Continue to implement soil treatability studies
- Continue to implement groundwater characterization
- Publish Notice of Intent, conduct EIS scoping, and prepare Draft EIS
- Continue dialogue with community (ongoing)

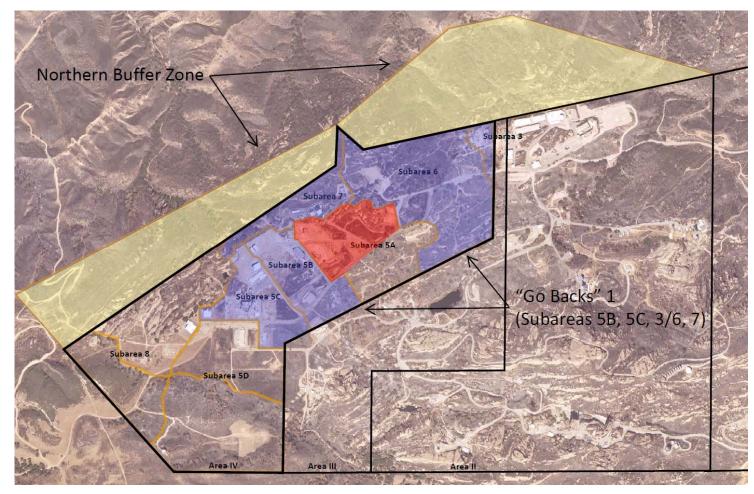
Phase 3 Data Gap Sampling Status

- Phase 1 and 2 sampling completed (~2,800 samples collected)
- Phase 3 data gap sampling (collected to date)
 - 5A South 124 samples
 - 5A North FW scheduled in November 2013
 - o 5B 908 samples
 - o 5C 675 samples
 - o 5D 236 samples
 - o 3/6 405 samples
 - o 7 74 samples
 - o 8 295 samples
 - Silvernale and Area III drainages – 20 samples
- Silvernale and Area III drainage sampling 5D Nor to the Initial Phase 3 Sampling Status Complete Subarea 5D South Scheduled
- Master Planning documents and Field Sampling Plan Addenda for Phase 3 investigations are located on DOE and DTSC's websites:

<u>http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab/ssfl_document_library.cfm</u> <u>http://www.etec.energy.gov</u>

Phase 3 Chemical Soil Sampling

 Today's meeting is to describe the proposed initial Phase 3 sampling for the Northern Buffer Zone and "Go-Backs" for Subareas 5B, 5C, 3/6, and 7. Also, we want to describe our plan for 5A North.



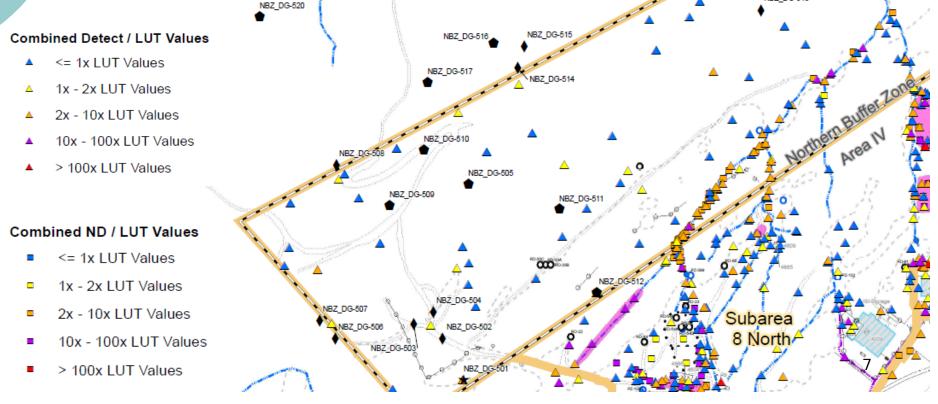
Phase 3 Sampling Approach is Based on a Chemical Data Gap Analysis

- Data gaps exist where more information is needed for DOE/DTSC to make remedial planning decisions; whether soil contamination exists, and if so, to what extent
- Data gap analysis is done by:
 - 1. Comparing existing soil sampling results to screening criteria
 - 2. Evaluating migration pathways how contamination may move
 - 3. Evaluating historical documents and site survey information to identify potential release areas
 - 4. Reviewing EPA radiological characterization information

Chemical Data Gap Analysis

 Existing sampling results are compared to criteria to define the extent of soil contamination. That is - What is the areal extent? How deep does it go?

>> Look-up Table (LUT) values established by DTSC are being used for screening in the Northern Buffer Zone



Chemical Data Gap Analysis

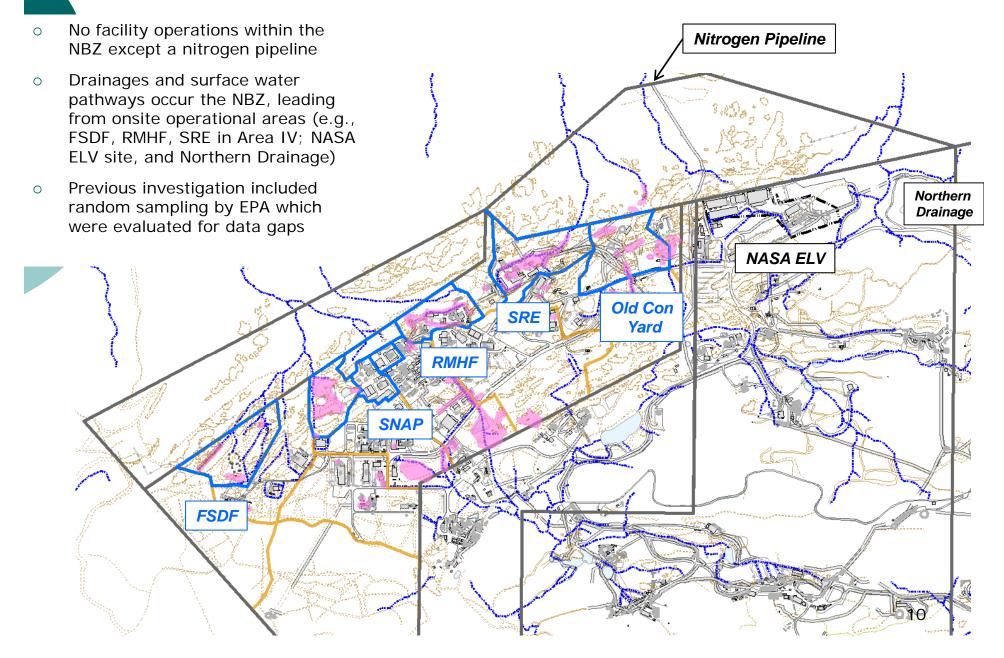
- Migration pathways are evaluated to answer where chemical contamination may move –
 - Into subsurface soil and potentially into groundwater,
 - Via surface water transport into drainages, and/or
 - Via air dispersion and deposition onto surrounding soil areas
- Historical and site survey information are evaluated to identify if there are potential release areas or features that have not been sampled, or that need additional chemicals evaluated. Example information includes -
 - Historical Building operations, storage tanks, waste vaults, etc.
 - Surveys Geophysical surveys, debris mapping, etc.

Data Gap Process Summary

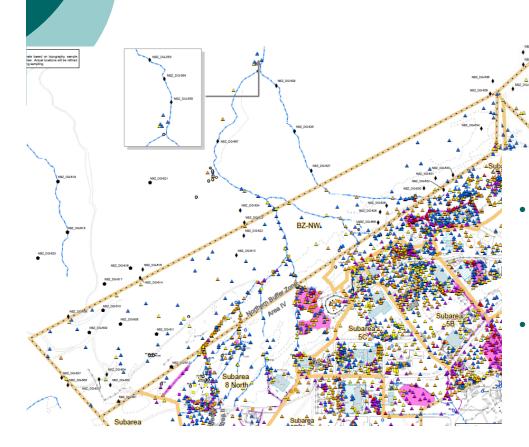
• Combining data gap recommendations from:

- Data Screening Evaluations
- Migration pathway evaluations; and
- Historical document/ site survey reviews
- Leads to Phase 3 chemical sampling recommendations

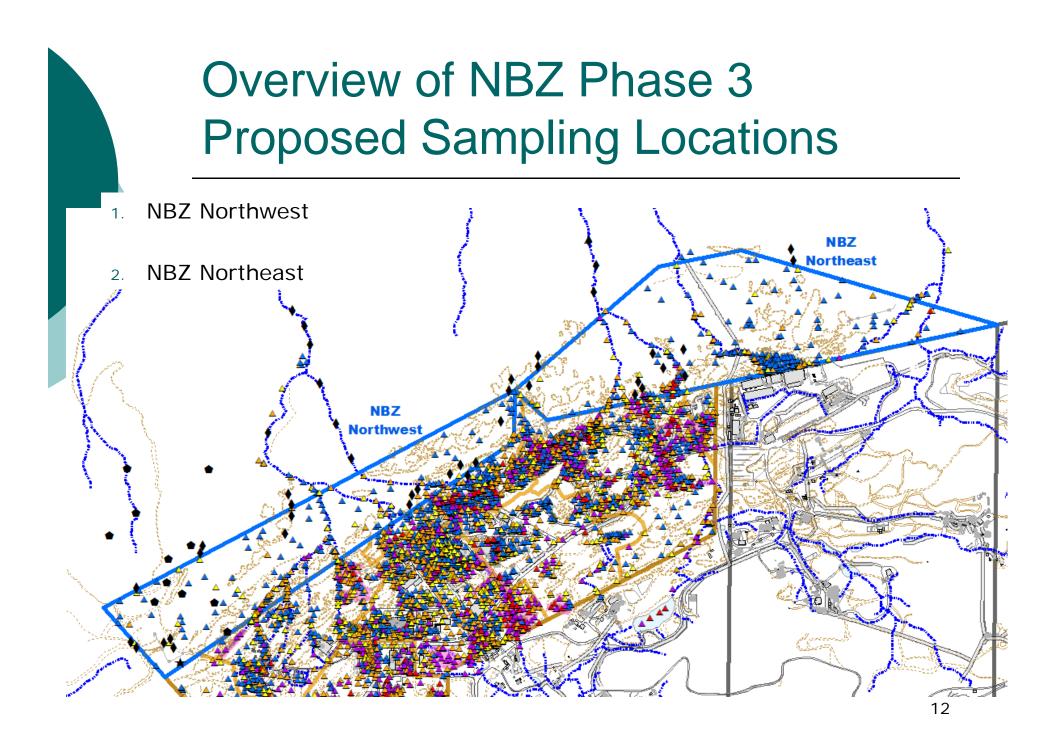
Overview of the Northern Buffer Zone



Overview of NBZ Chemical Sampling Results



- Approximately 930 samples previously collected from 735 locations
- 2 Chemical Clearly Contaminated Areas identified north of the Old Con Yard



NBZ Northwest – Western Area

Phase 3 sampling proposed for:

Dirt Roads

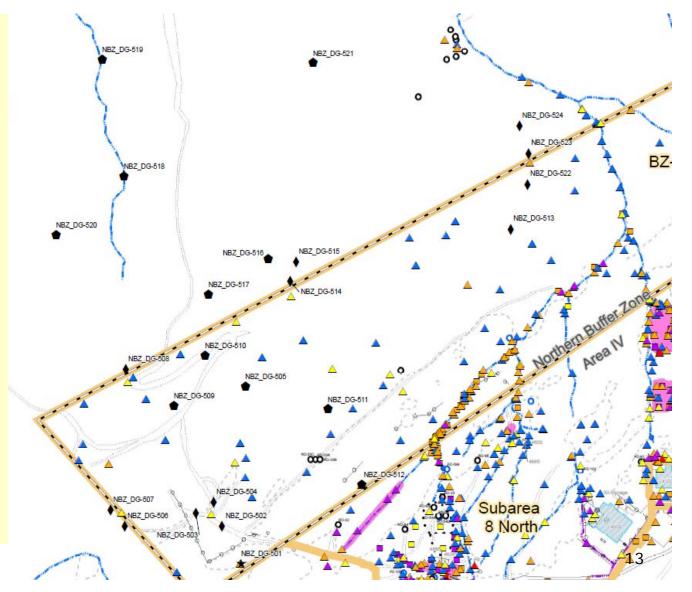
 Step-outs for TPH, pesticides, and a phthalate detection along road leading northwest from Subarea 8

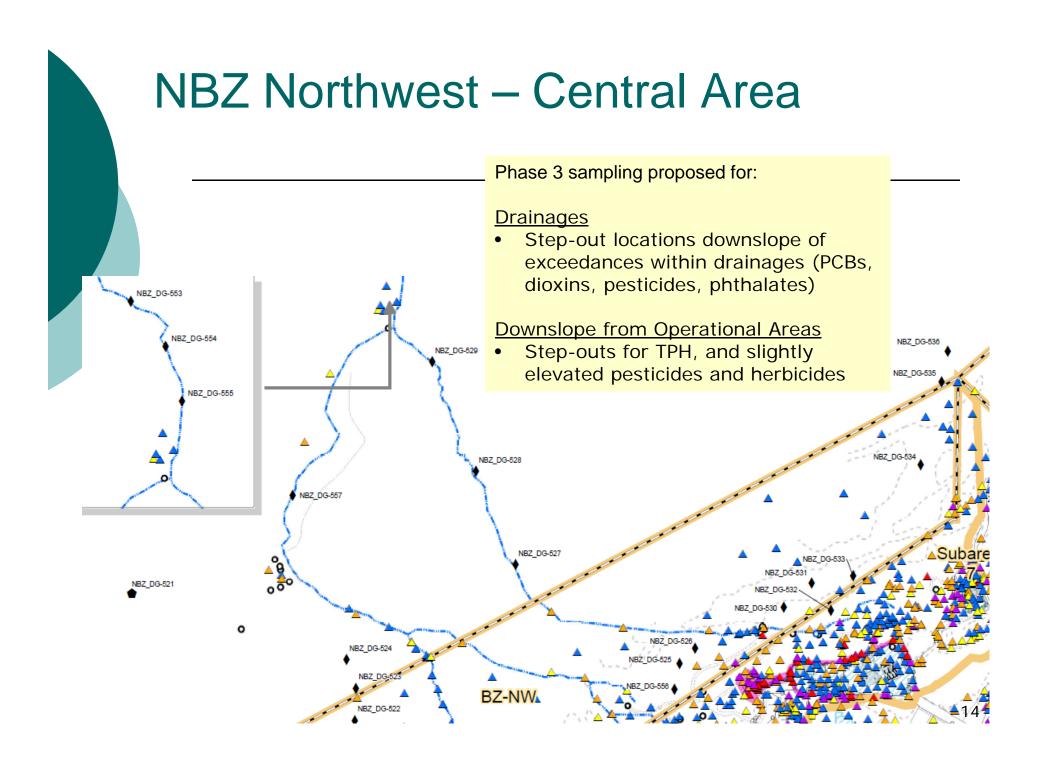
Drainages and Surface Water Pathways

 Step-outs downstream of exceedances in surface water pathways (PAHs, TPH, pesticides)

Aerial Dispersion

 Nine locations assess potential aerial dispersion due to burning and treatment activities at FSDF







NBZ Northeast

Phase 3 sampling deferred near NASA operations and in Northern Drainage – pending review of recent NASA data

Phase 3 sampling proposed for:

Drainages and Surface Water Pathways

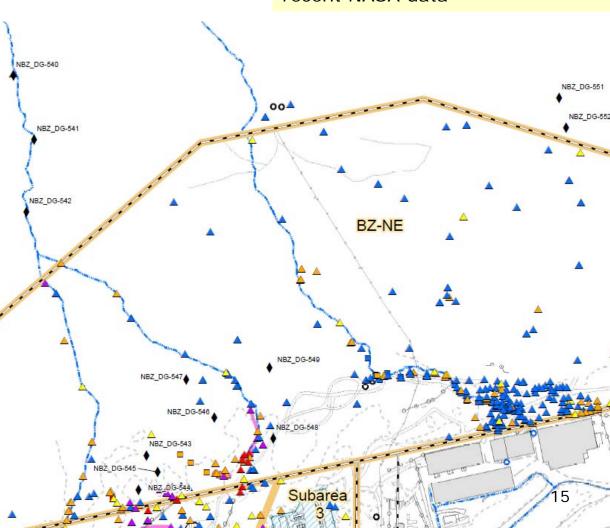
- Step-outs downstream of exceedances in surface water pathways (TPH, pesticides)
- Step-outs downstream of exceedances in drainage channels (PAHs, dioxins, pesticides and herbicides)

Downslope from Operational Areas

 Step-outs for PAHs, PCBs, dioxins, metals, TPH, pesticides and herbicides

Dirt Roads

 Step-outs for PCBs, dioxins, and TPH along dirt roads leading from Area IV operational areas





Summary of NBZ Phase 3 Proposed Sampling Locations

- 102 soil matrix samples are proposed at 56 locations
- No soil vapor locations are proposed
- Chemical suites proposed based on step-out requirements, or for evaluation of potential aerial dispersion from FSDF

NBZ Questions?



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Phase 3 Final Data Gaps – A "Go-Back" Approach

- To date, ~6,000 samples currently exist in Area IV and the NBZ and form a robust dataset for evaluation
- Recently DTSC published a Lookup Table (LUT), which allows identification of areas where a LUT value is exceeded
- DOE/DTSC are re-visiting each subarea using LUT values and all available sampling results for a final data gap analysis

>>>> A 'Go-Back' approach has been established to identify critical, final characterization needs for remedial planning.....

• What other data does DOE/DTSC need to develop the remedial plan?

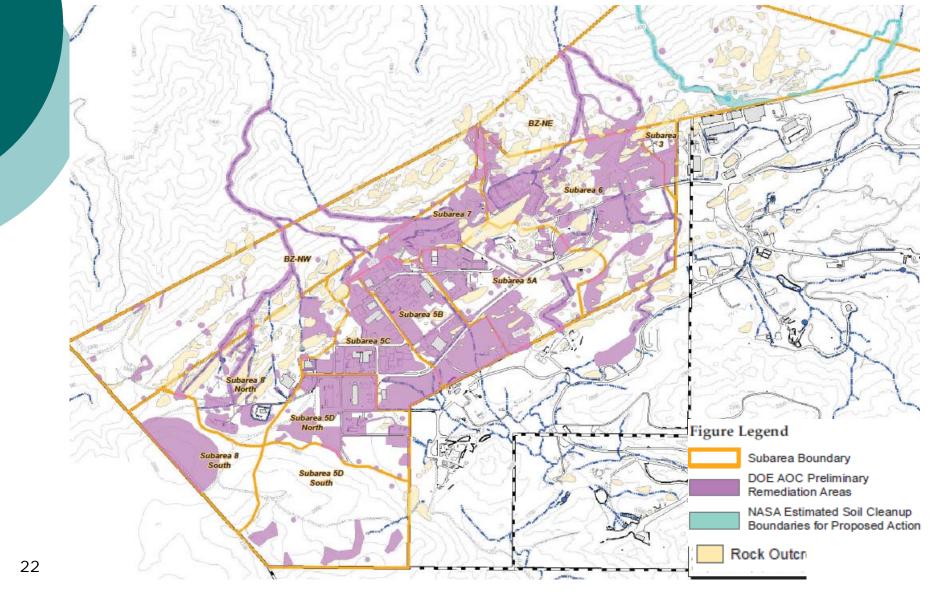
Phase 3 Final Data Gaps – Preliminary Remediation Areas

- As a first step, DOE has identified locations where soil concentrations exceed the LUT values
- Based on these locations, Preliminary Remediation Areas (PRAs) were identified
- Each PRA is evaluated to define lateral and vertical extent of chemicals exceeding LUT values
- If a PRA is identified, it means we know enough that the area will be included for remedial planning according to the AOC
 - Except in a few circumstances, we have sufficient data for remedial planning
- As part of 'Go-Backs', DTSC has been reviewing the DOE PRAs

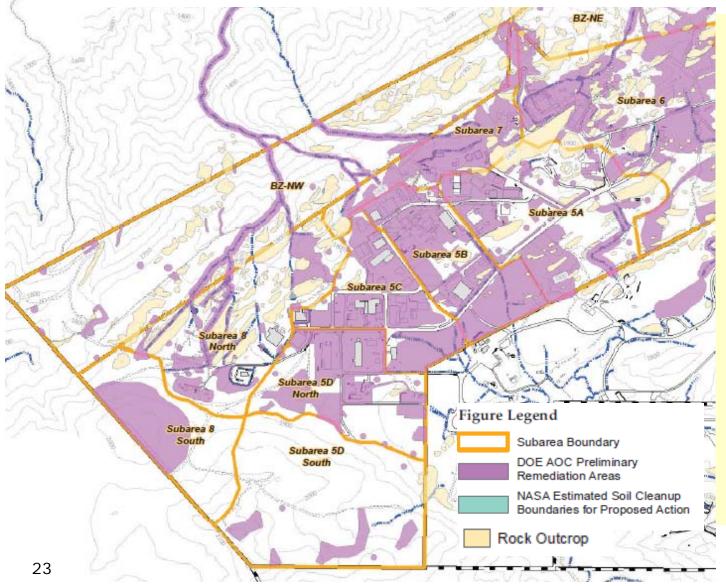
Preliminary Remediation Areas

- Within Area IV operational areas, PRAs were identified based on existing sampling results and knowledge of former operations
- Within the NBZ and in Area IV undeveloped areas, PRAs were identified in down-drainage locations or generally in small areas based on the limited amount of soil present
 - Also in the northeast NBZ, a few areas were identified as NASA Action Areas in the NASA Draft EIS

Chemical Preliminary Remediation Areas in Area IV / NBZ

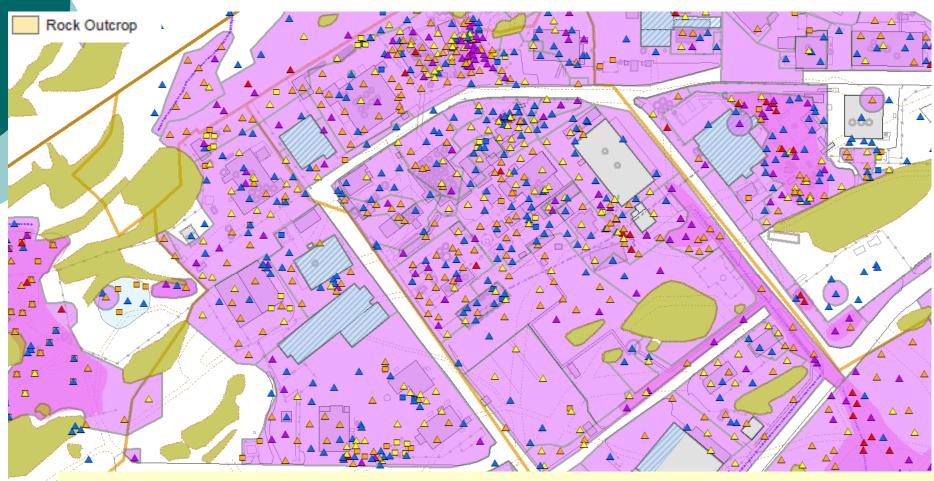


Chemical Preliminary Remediation Areas in Area IV / NBZ



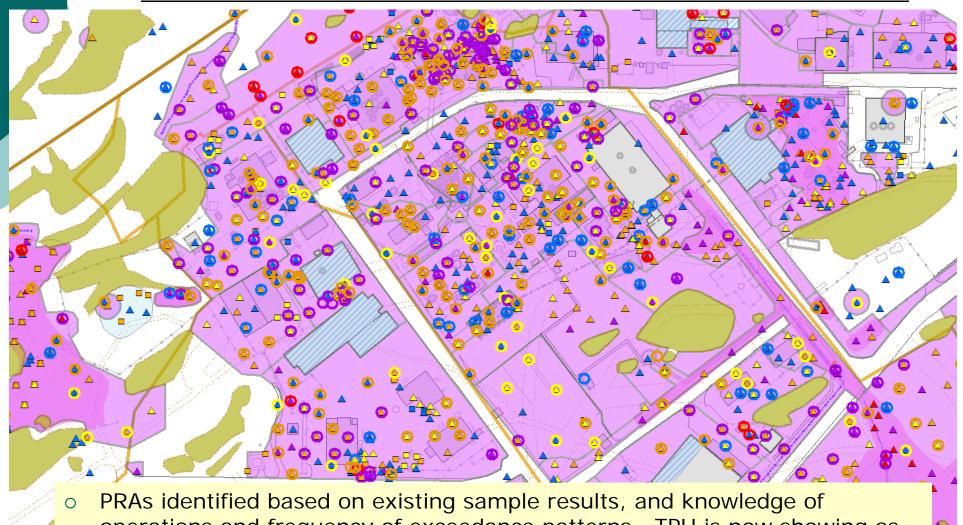
- PRAs extend outside of Area IV if migration of chemicals above LUT values identified
- Sensitive habitat or cultural areas are NOT shown here, although those areas will definitely be evaluated in the EIS

Preliminary Remediation Areas – Subareas 5B and 5C Examples



 PRAs identified based on existing sample results, and knowledge of operations and frequency of exceedance patterns. Sample results shown here without TPH.

Preliminary Remediation Areas – Subareas 5B and 5C Examples



 PRAs identified based on existing sample results, and knowledge of operations and frequency of exceedance patterns. TPH is now showing as 'halos' to indicate where above LUT values (all halos except blue).

Sampling Needs for Remedial Planning – Final Data Gap Analysis PRA Checks

- PRAs are checked to confirm they are defined laterally; if not, samples are proposed
- PRAs are checked to confirm depths are defined; if not, samples are proposed
- PRAs are checked to confirm that the appropriate chemicals are identified for remedial planning; if not, additional samples are proposed

Other "Go-Back" Final Data Gap Analysis Checks

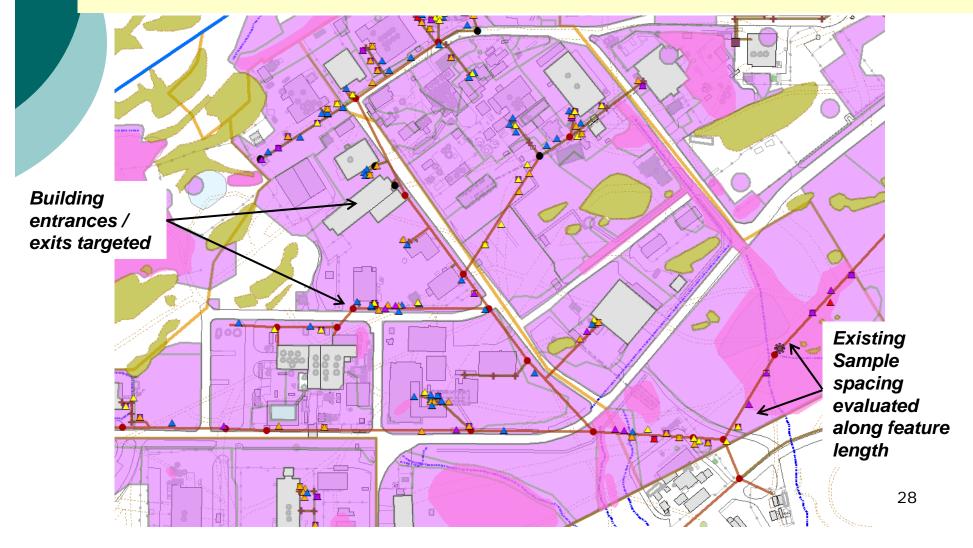
 Throughout the data gap process, sitewide features or sampling requirements were tracked for re-evaluation once the LUT was established and initial results obtained

• These other 'Go-Back' items include:

- Sample reporting limits above final LUT values
- Sampling near site-wide features: sewer lines, natural gas pipelines, and water conveyance pipelines
- Sampling results with potential laboratory contaminants
- Sitewide perchlorate results since multiple analytical methods can be applied
- Deep boring results
- Post-demolition observations and findings
- Uncollected data from initial Phase 3 proposed sample locations

Site-Wide Infrastructure

Site-wide features include sewer lines, natural gas pipelines, the water conveyance system – data within 15 feet of utilities and samples deeper than 2 feet bgs were evaluated to assess characterization completeness





Post-Demolition Sampling

Phase 3 final data gap sample locations target deep features and areas of soil staining identified or observed during demolition

Building Demo observations:



Final data gap proposed locations:

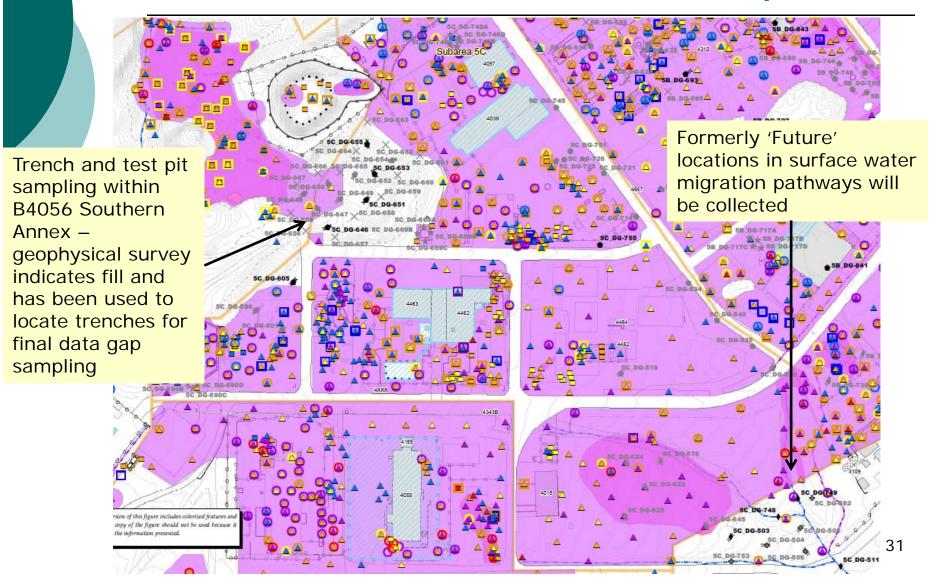




Final Phase 3 Data Gaps for Subareas 5B, 5C, 3/6, and 7

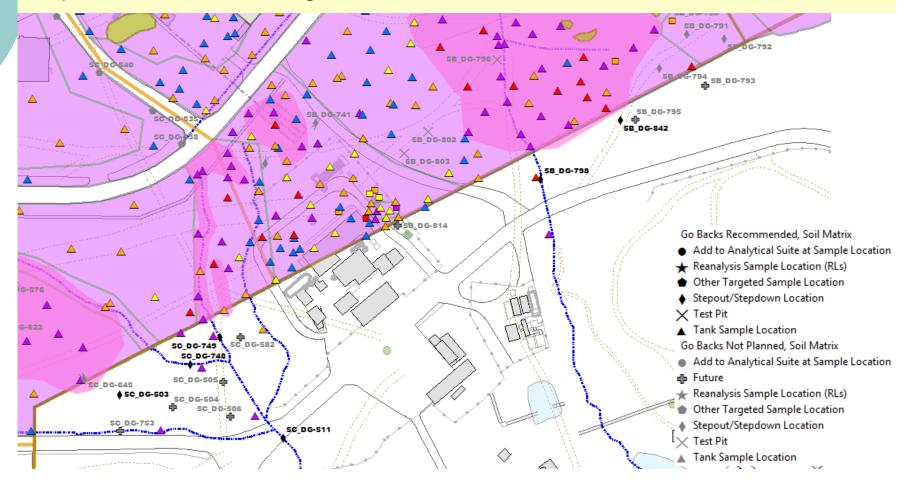
- PRAs have been identified and outstanding Go-Back items checked for Subareas 5B, 5C, 3/6, and 7
- Final Phase 3 data gap samples proposed to provide sufficient data for remedial planning

Subarea 5C – Final Data Gaps

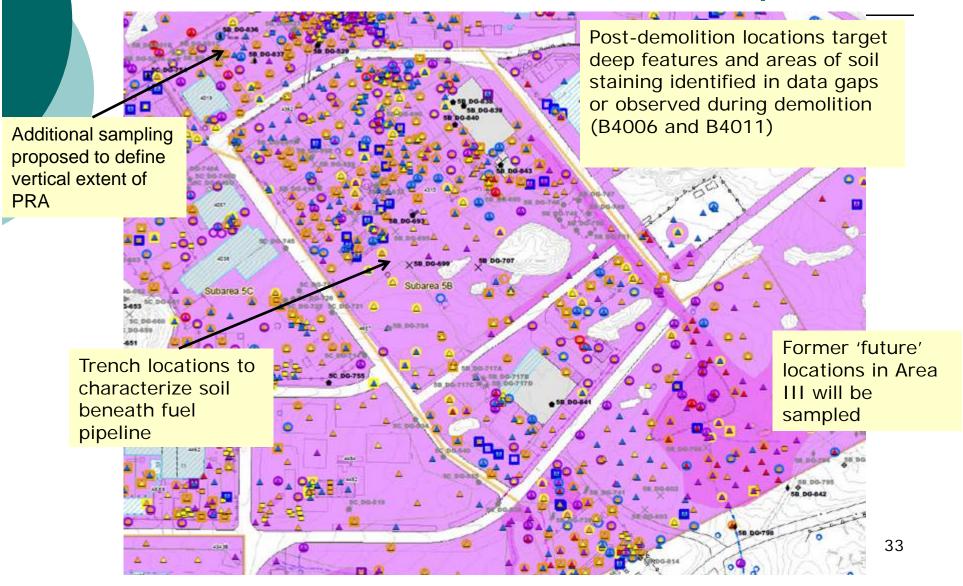


Boundary Sampling

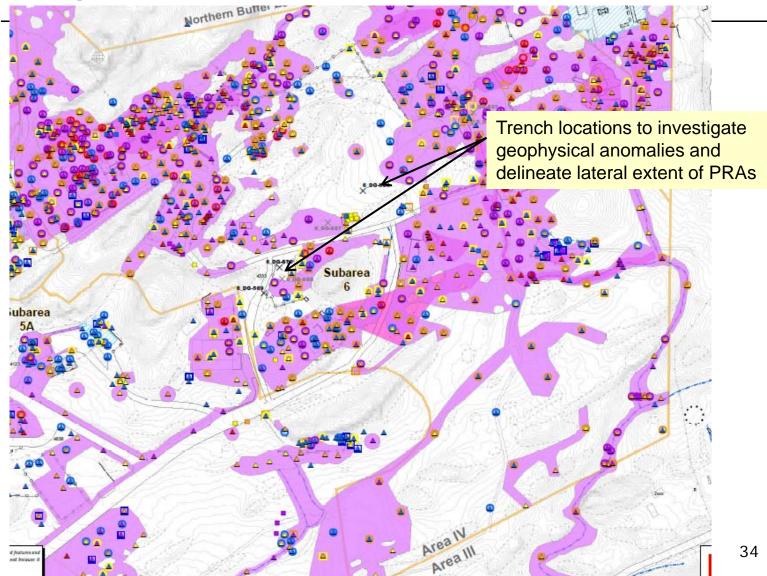
'Future' locations are evaluated for current sampling needs to determine if chemicals are 'contiguous and emanating' from Area IV per AOC requirements. Phase 3 final data gap locations include downslope and down-drainage locations from Area IV exceedances.



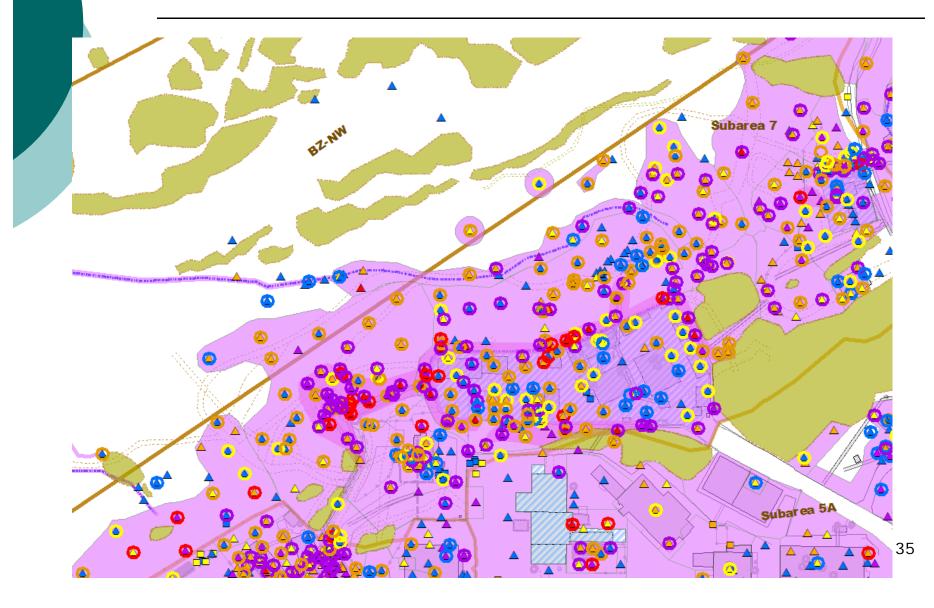
Subarea 5B – Final Data Gaps



Subareas 3 and 6 – Final Data Gaps



Subarea 7 – Sampling Complete





Summary of "Go-Back" Sampling for First Set of Subareas

 79 soil matrix samples are proposed at 27 locations

14 at boring locations

13 at trench / test pit locations

Go-Back Questions?



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		38

Subarea 5A North Implementation Plan

- DOE has also evaluated the existing Subarea 5A North data in the context of LUT values to identify PRAs
- Once PRAs were identified, it became apparent not all the previously proposed 5A North samples are still needed for remedial planning
- Since DOE has not yet been able to sample in 5A North, we plan to first collect a subset of the initially proposed samples - those that were identified as still critical for remedial planning
- These initial Phase 3 Subarea 5A North sample results will be subject to the 'Go-Back' analysis

Subarea 5A North Implementation Plan



5A North implementation samples identified in areas surrounding PRAs

87 soil matrix samples at 34 locations are being collected in this implementation phase (black dots)

40

Coming Attractions

- Continue evaluation for final data gap sampling based on chemical and radiological Look-Up Table values
- Evaluate proposed soil vapor locations based on PRAs and new groundwater sampling results
- Conduct Next Chemical Data Gap Investigation Stakeholder Meeting – January 2014
- Complete Phase 3 Sampling field work for NBZ, Subarea 5A North, and Go-Backs (5B, 5C, 3/6, 7)

Update for Action Items

Action Item	Date Requested	Progress
DOE evaluate what is needed so that sampling can occur at proposed 'future' locations in Area III, and if EPA could obtain radiological samples near the Building 4015 Field during this next phase of work since laboratory contracts and protocols in place.	2/22/12	DOE will collect samples in Area III and offsite as identified in the NBZ and Go-Back plans
DOE to consider hosting meeting to explore use of GIS for data review, evaluation of information sources, etc.	8/10/12	Reviewing schedule to identify date/time.
What are NPDES monitoring requirements below Building 4056 Landfill, and what are the results?	6/11/13	Complete. This response provided by Boeing: The RWQCB 13383 Order for the Building 4056 Landfill states that five samples are to be collected utilizing the protocols described in the Monitoring and Reporting Program for Outfalls 003 through 010 for the Order Number R4-2010-0090 included in the NPDES Permit Number CA0001309. To date 4 of the 5 samples have been collected and those results are included in the Annual Progress Reports provided to the RWQCB by Boeing. No surface water samples collected at the Building 4056 Landfill monitoring point have exceeded NPDES permit limits.

Update for Action Items

Action Item	Date Requested	Progress
Correct legend handout to show blue colors (not green), and add 'sampling post demo' symbol	8/6/13	Done.
Stakeholder request for additional soil and soil vapor sampling in former parking lot / storage area south of Building 4020	8/6/13	Done. Locations added in Subarea 5D Data Gap SAP.
Stakeholder request for strontium groundwater data in subarea (not sure of where? Was it more specific?)	8/6/13	In preparation.
Stakeholder request for field photographs taken near former Building 4020	8/6/13	Done. DOE sent to meeting participants on Aug 7, 2013.