



Phase 3 Chemical Sampling – Subarea 5B

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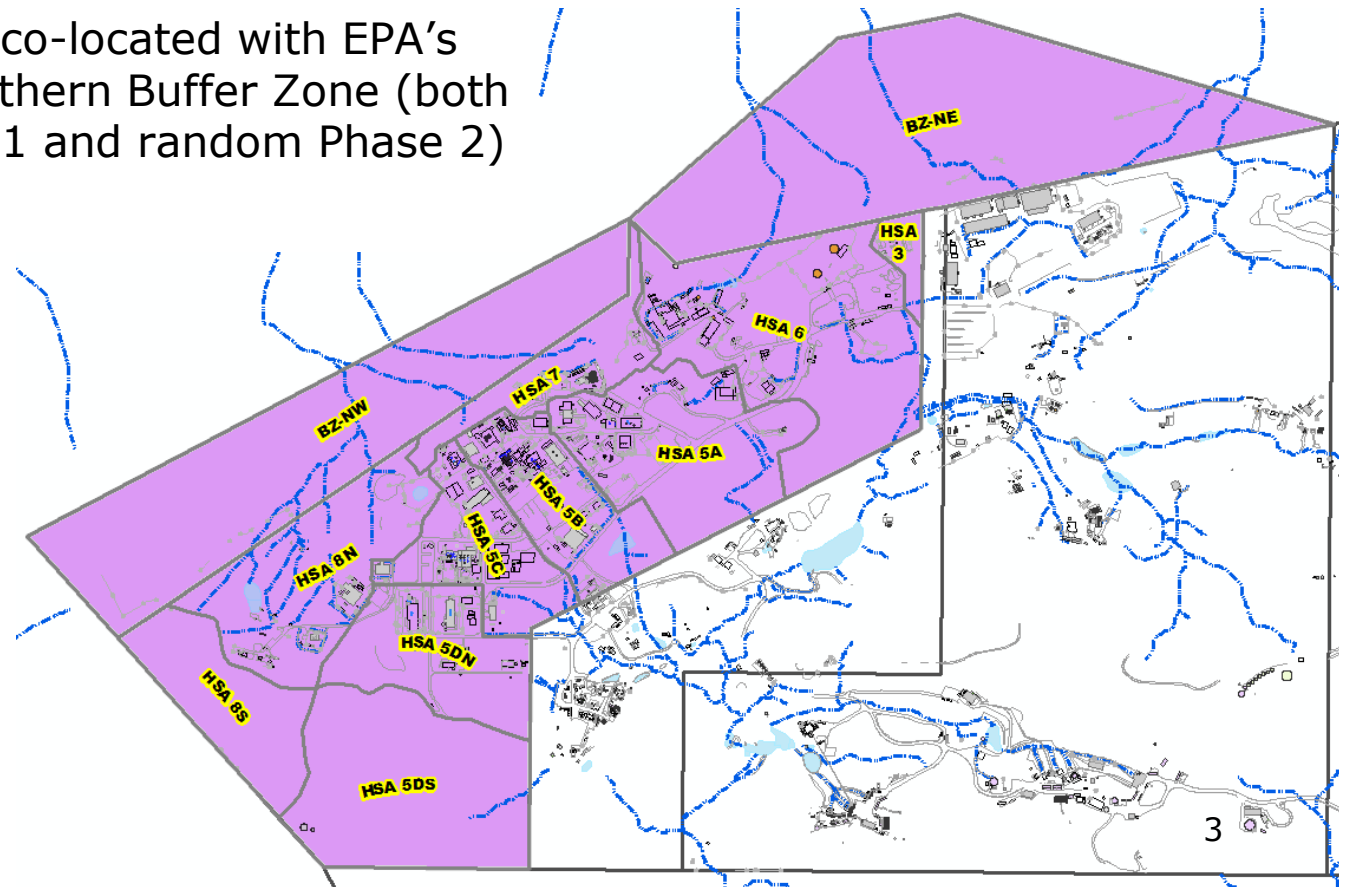


Area IV Chemical Soil Sampling

- The DTSC/DOE AOC identifies 3 chemical sampling phases:
 - Phase 1 is co-located targeted sampling performed with EPA (just completed, including NBZ)
 - Phase 2 is co-located random sampling performed with EPA (just completed in NBZ)
 - Phase 3 is sampling at chemical 'data gap' locations, or areas where more information is needed for remedial planning (currently underway in Subarea 5C)

Recap of Phase 1 and 2 Co-located Sampling Status

- Soil sampling with EPA completed in all HSA subareas within Area IV with ~2700 samples collected to date
- DOE/DTSC has co-located with EPA's work in the Northern Buffer Zone (both targeted Phase 1 and random Phase 2)





Phase 3 Chemical Soil Sampling

- Phase 3 chemical soil sampling is being conducted to collect sufficient chemical data for remedial planning
- Since February, we've finalized our master planning documents:
 - Phase 3 Data Gap Investigation Work Plan
 - Master Field Sampling Plan
 - Quality Assurance Project Plan
 - Health and Safety Plan

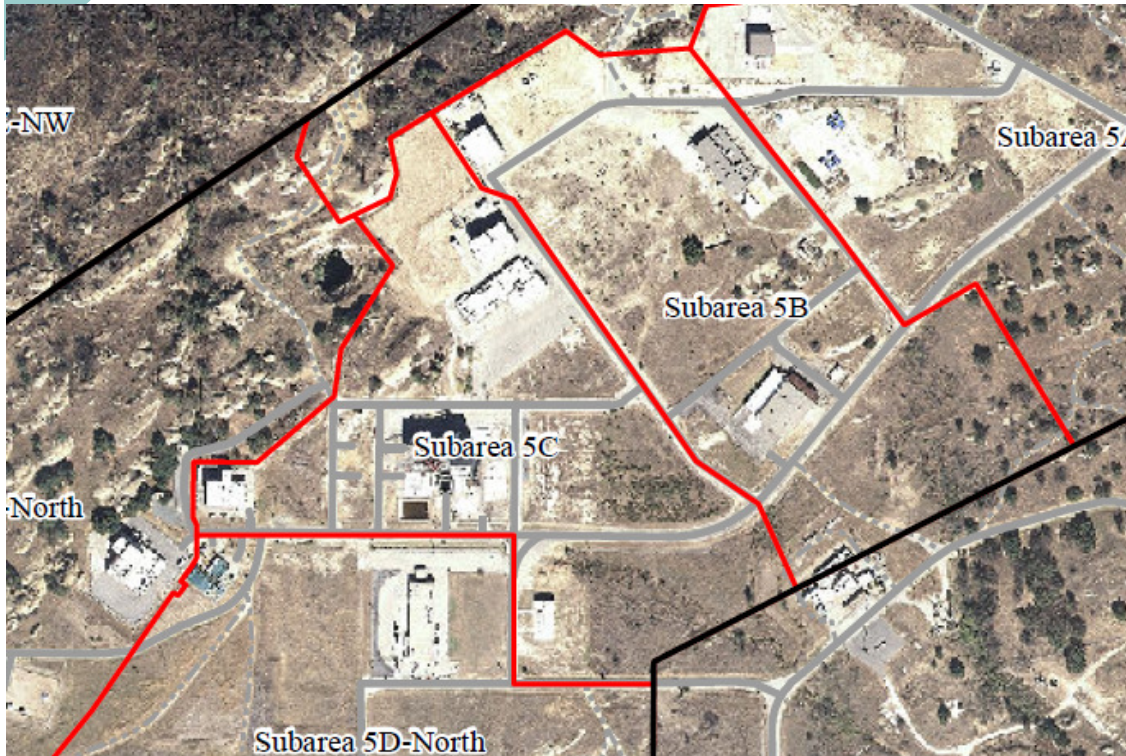
- Plans are located on DOE and DTSC's websites:

[http://www.dtsc.ca.gov/SiteCleanup/Santa Susana Field Lab/ssfl document library.cfm](http://www.dtsc.ca.gov/SiteCleanup/Santa_Susana_Field_Lab/ssfl_document_library.cfm)

<http://www.etec.energy.gov/>

Phase 3 Chemical Soil Sampling

- ...AND we've begun sampling in Subarea 5C according to the Master Field Sampling Plan 5C Addendum (*also available on DTSC and DOE's websites*)



- Today's meeting is to describe the proposed sampling for Subarea 5B



Phase 3 Chemical Data Gap Investigation

- DOE remains committed to the 2010 AOC and our intent is to complete Phase 3 data gap sampling by December 2012
 - We need your input as we finalize each of the Subarea sampling plan addenda
 - There will be periodic public meetings to get this input – last time for 5C, this time for 5B, etc.
- DTSC will describe the Phase 3 approach and Subarea 5B sampling plan addendum



Phase 3 Chemical Data Gap Investigation

- The Phase 3 Chemical Data Gap Investigation is being conducted to complete the chemical characterization of Area IV and the NBZ to assist in remedial planning
- Chemical data collected to date in Area IV serve as a foundation for planning this work
 - RCRA Facility Investigation (~3400 samples)
 - AOC Phase 1 and 2 co-located (~2700 samples)
- EPA radiological data summaries are also being used in chemical data gap planning



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

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?

>> Interim screening levels (ISLs), based on interim background values and reporting limits, are being used for screening until the Lookup Table values are established by DTSC

Combined Analyte Detect / ISL

- ▲ < 1 ISL
- ▲ 1x to 2x ISL
- ▲ 2x to 10 x ISL
- ▲ 10x to 100x ISL
- ▲ >100x ISL

Combined Analyte ND / ISL

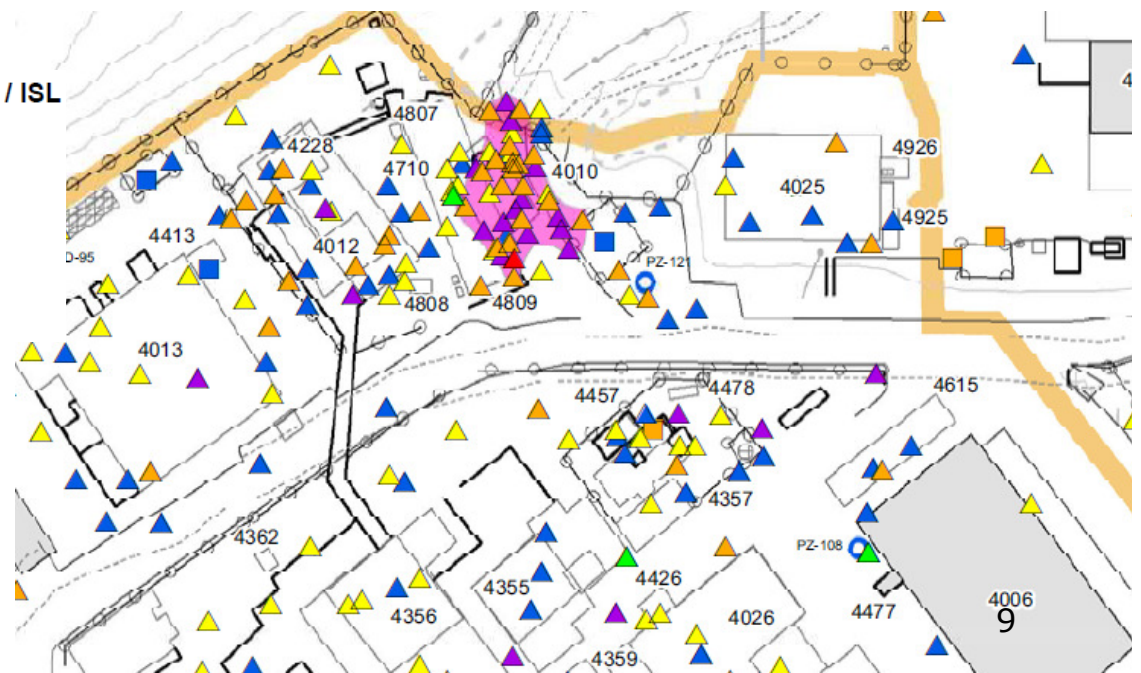
- < ISL
- 1x ISL to 2X ISL
- 2x ISL to 10x ISL
- 10x ISL to 19x ISL

Combined Analyte Detect / LDC

- ▲ < 1 x LDC

Combined Analyte ND / LDC

- < 1 x LDC





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.

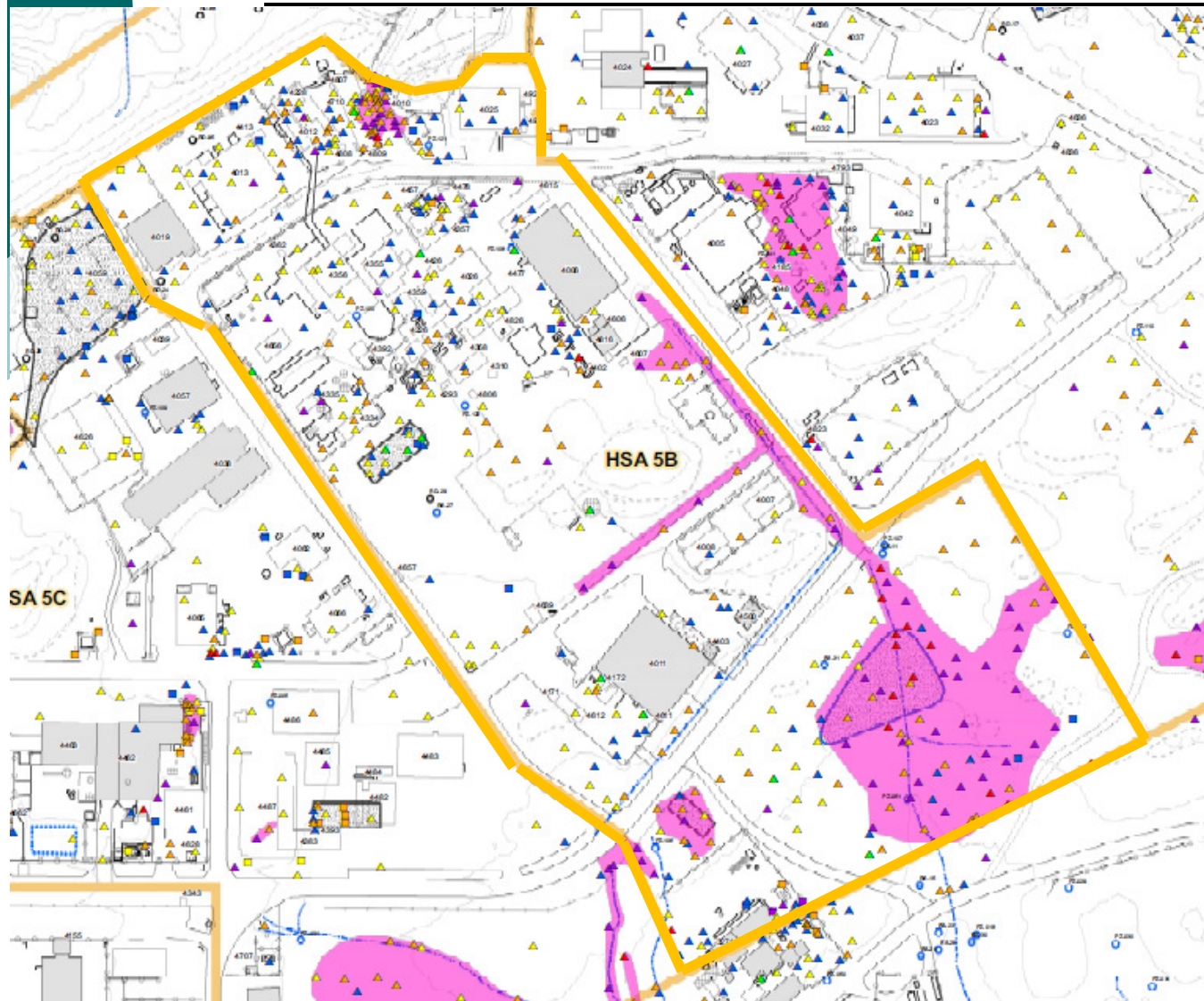


Data Gap Process Summary

- 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 5B Chemical Sampling Results

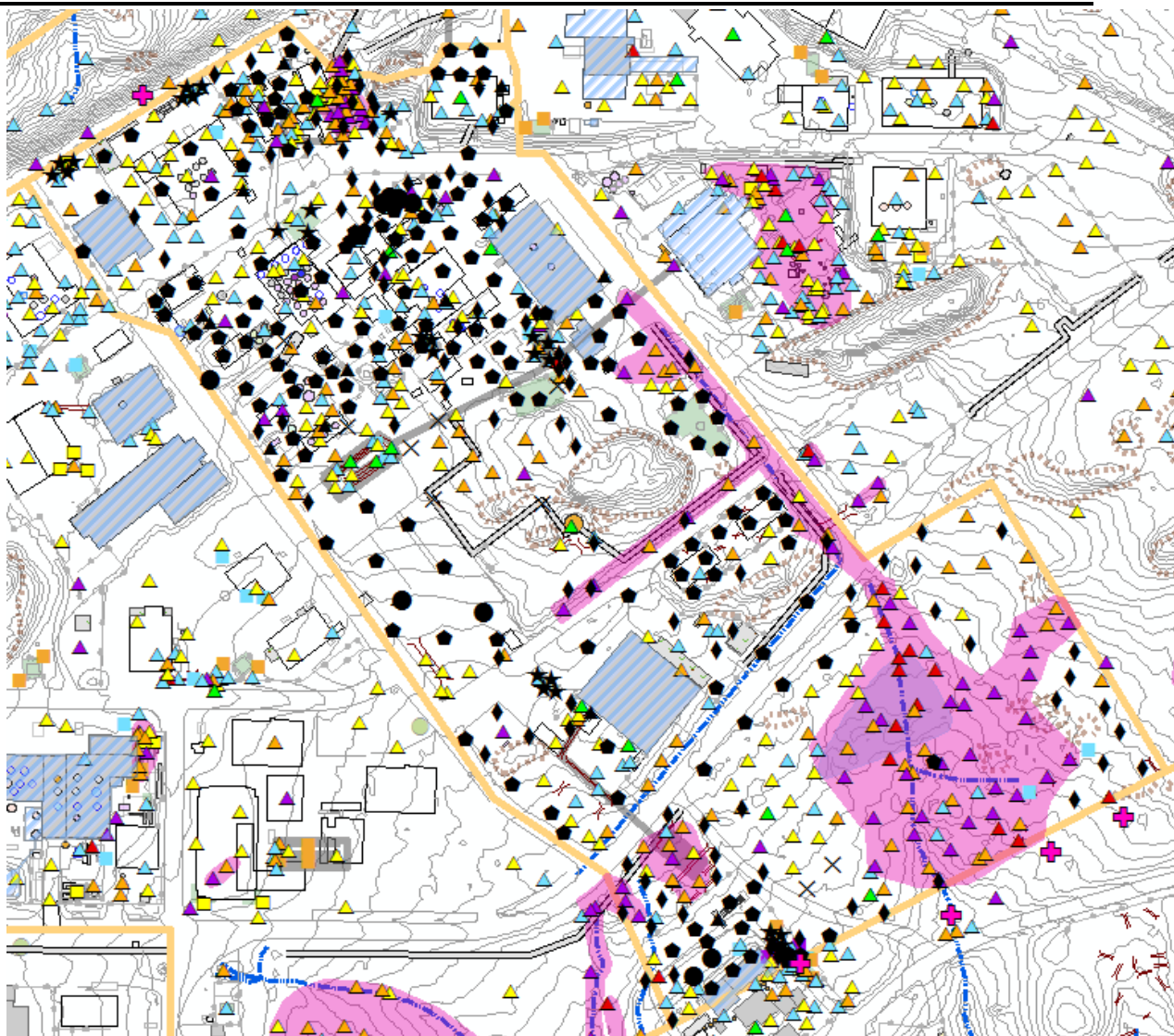


> Over 900 samples previously collected

> 4 Clearly Contaminated Areas identified- the largest is the 17th Street Pond and drainage

Overview of 5B Phase 3 Proposed Sampling Locations

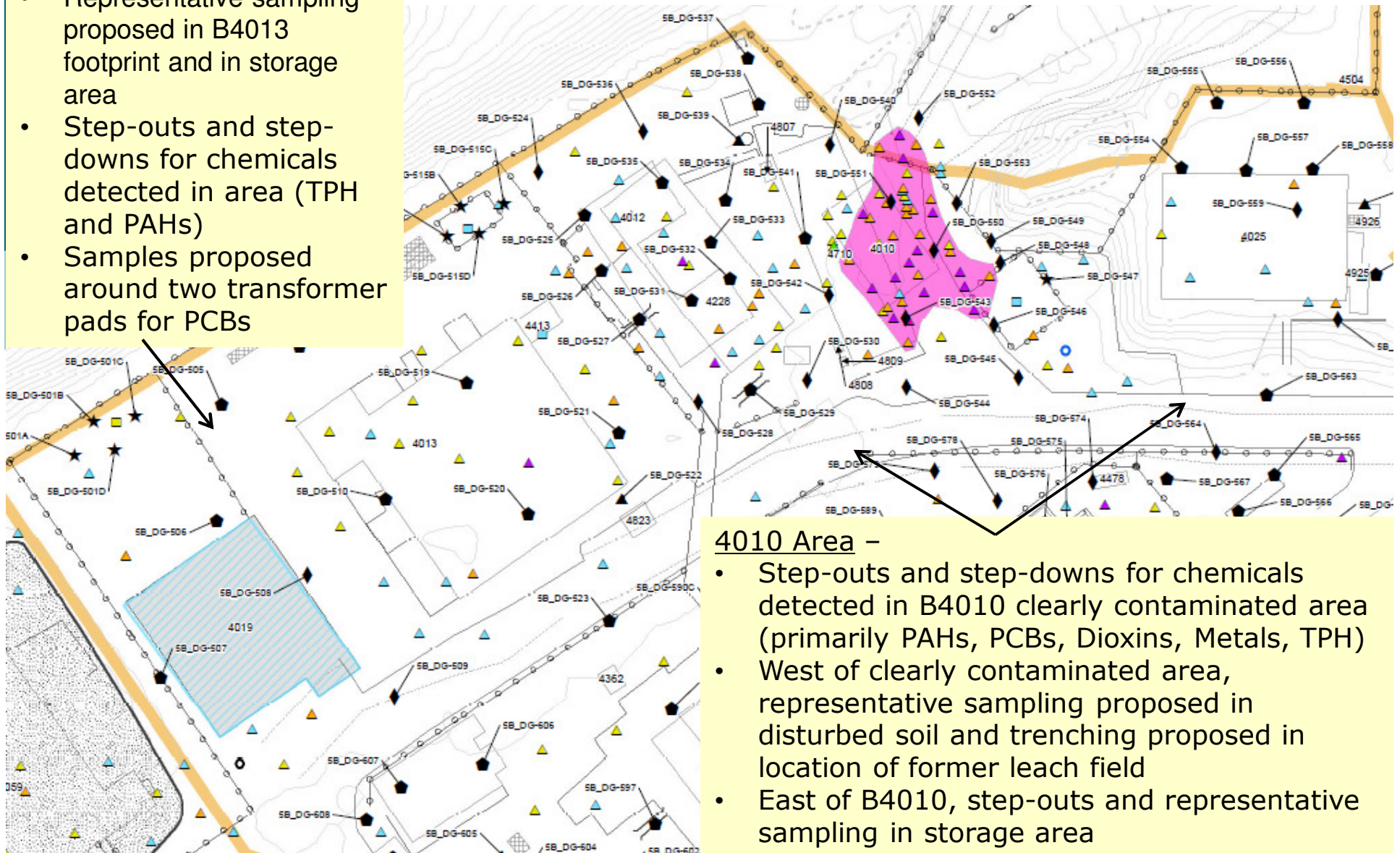
1. Building 4019 Area
2. Building 4010 Area
3. Sodium Component Test Installation (SCTI)
4. Hazardous Materials Storage Area (HMSA)
5. Kalina Complex
6. Small Component Test Loop (SCTL) Area
7. Building 4007 Area
8. Building 4011 Area
9. Environmental Effects Laboratory (EEL)
10. 17th Street Pond Area



Building 4019 and 4010 Areas

4019 Area –

- Representative sampling proposed in B4013 footprint and in storage area
- Step-outs and step-downs for chemicals detected in area (TPH and PAHs)
- Samples proposed around two transformer pads for PCBs



4010 Area –

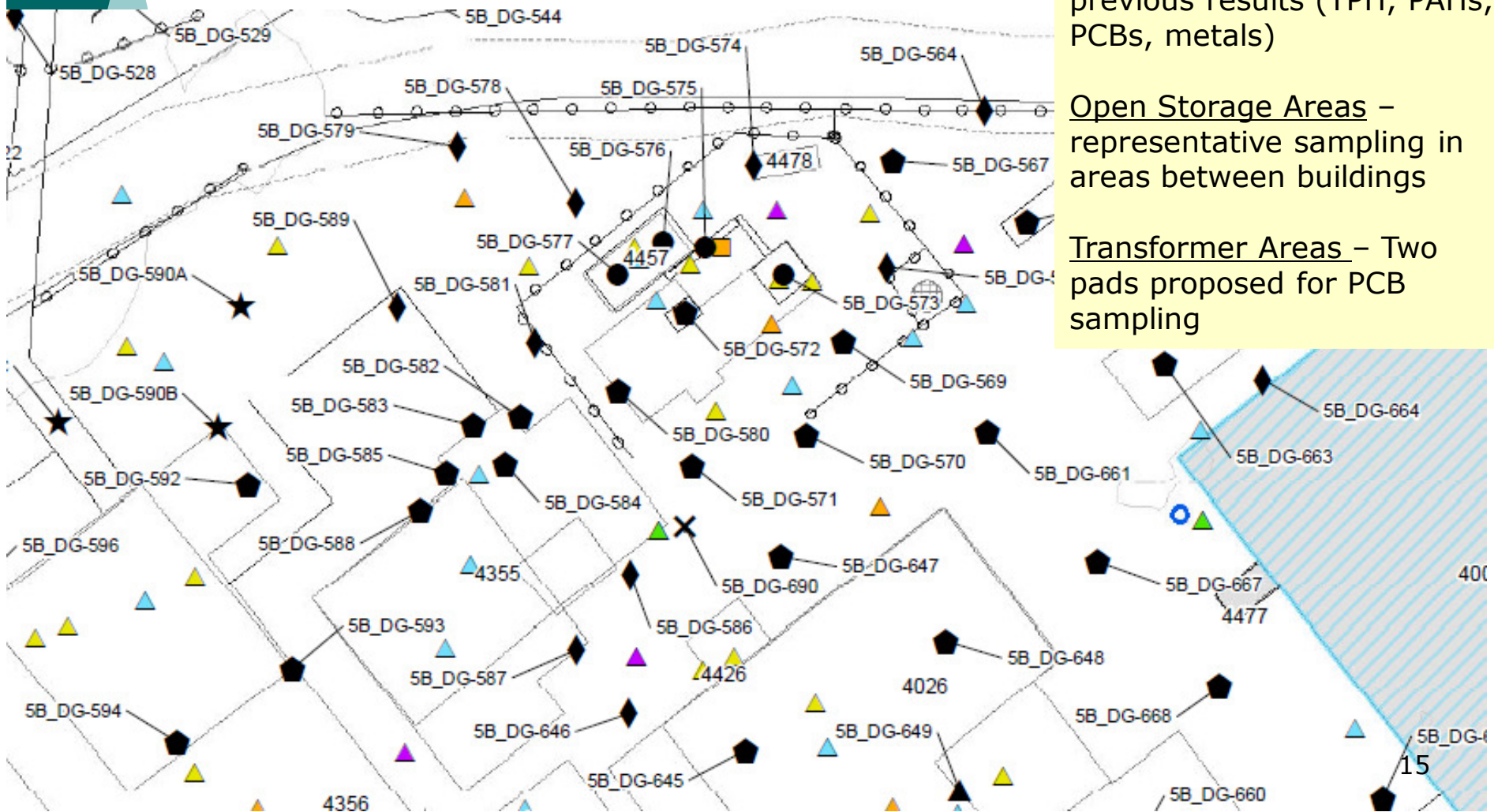
- Step-outs and step-downs for chemicals detected in B4010 clearly contaminated area (primarily PAHs, PCBs, Dioxins, Metals, TPH)
- West of clearly contaminated area, representative sampling proposed in disturbed soil and trenching proposed in location of former leach field
- East of B4010, step-outs and representative sampling in storage area

Hazardous Material Storage Area (HMSA)

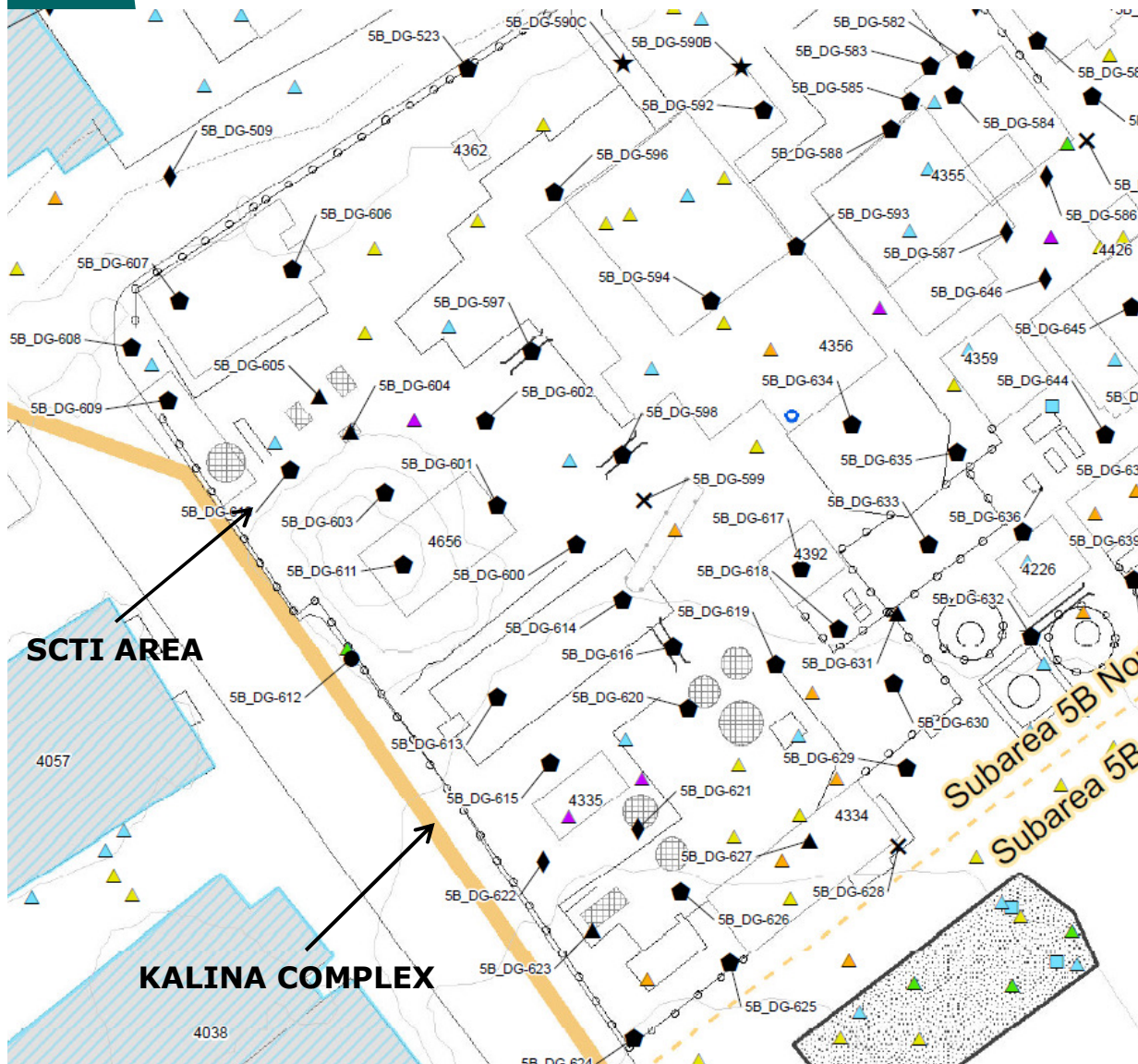
Deep Sumps/Pits – targeted sampling at former features for additional chemicals (PAHs, PCBs, Dioxins, VOCs, Hexavalent Chromium, TPH, Formaldehyde). Also step-outs in area based on previous results (TPH, PAHs, PCBs, metals)

Open Storage Areas – representative sampling in areas between buildings

Transformer Areas – Two pads proposed for PCB sampling



Sodium Component Test Installation and Kalina Complex



SCTI Area -

- Area of soil disturbance and deep building excavation (including a former secondary containment trench)
- Representative sampling for PAHs, PCBs, Dioxins, metals, hexavalent chromium, TPH and formaldehyde
- Samples expected to go to 10 feet or greater

Kalina Complex - Samples proposed to address aboveground storage tanks, open storage areas, and step-outs for previous detections (PAHs, dioxins)

Geophysical Anomalies - several locations targeting linear features with test pits for observation and sampling

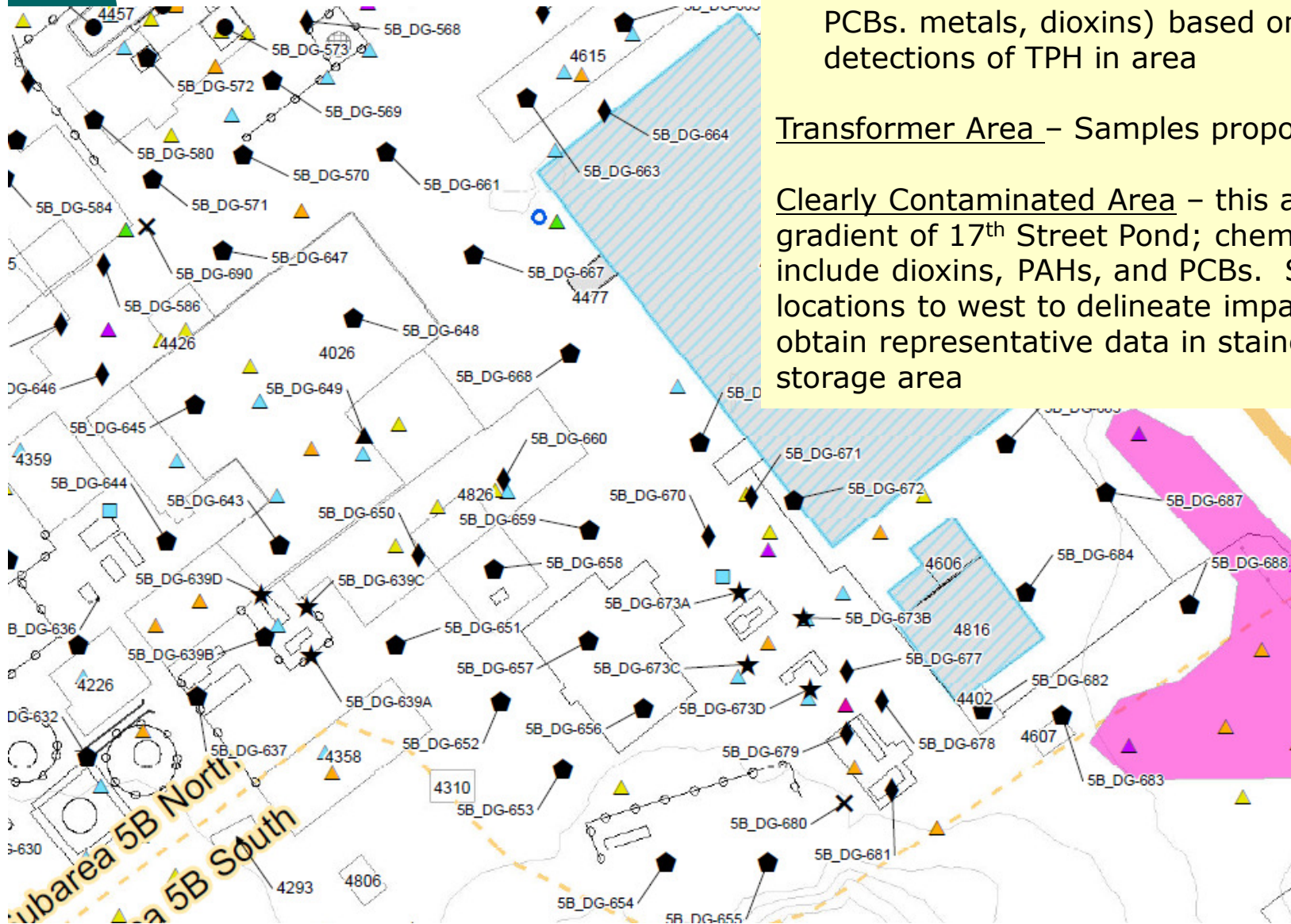
Small Component Test Loop

SCTL Area –

- Sampling proposed west of building to address historical storage areas, structures, and former septic tank
- Deep samples targeted for additional chemicals at former sodium tank pits (PAHs, PCBs, metals, dioxins) based on previous detections of TPH in area

Transformer Area – Samples proposed for PCBs

Clearly Contaminated Area – this area is up-gradient of 17th Street Pond; chemicals here include dioxins, PAHs, and PCBs. Several locations to west to delineate impacted area and obtain representative data in stained soil / storage area



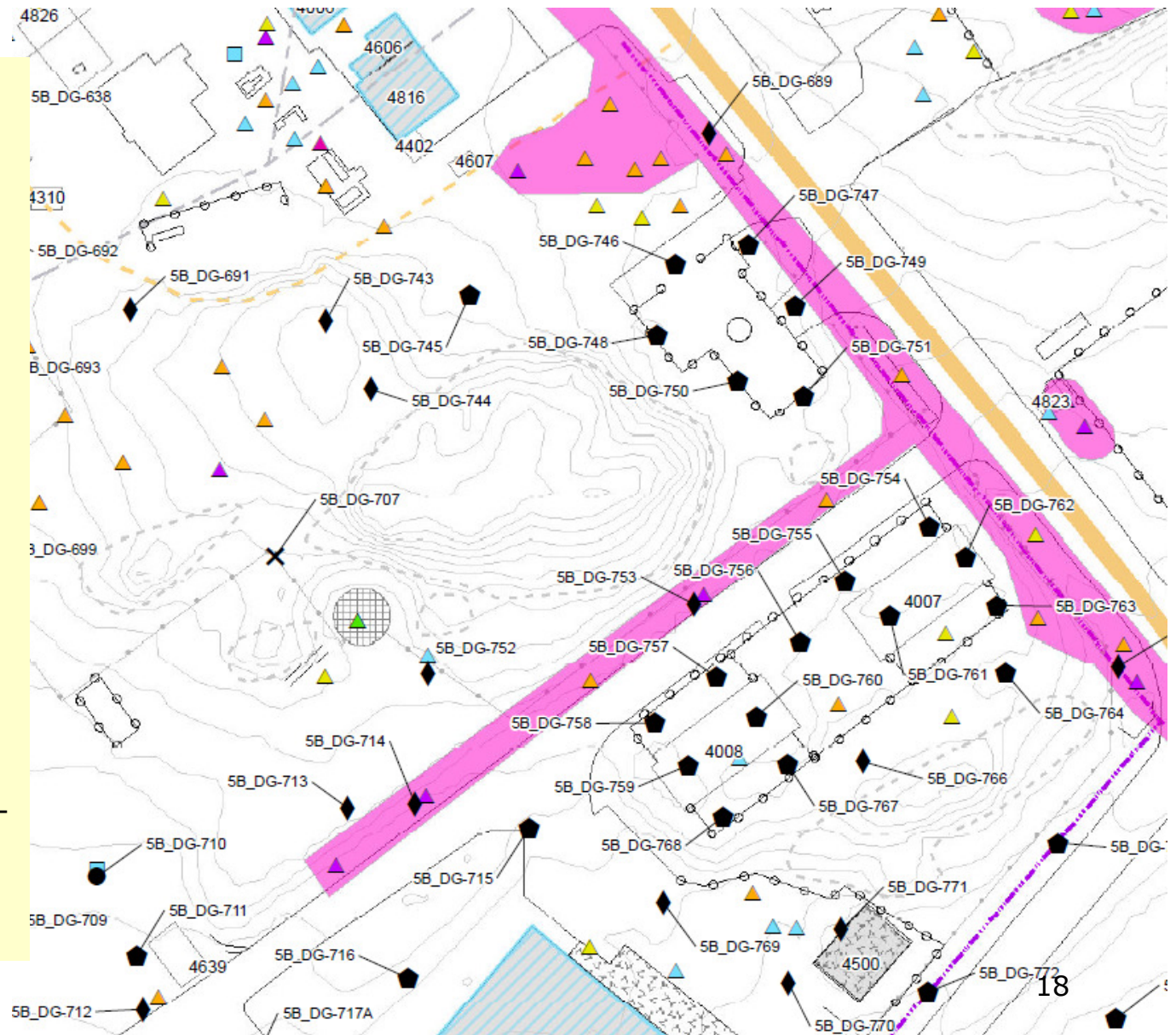
Building 4007 Area

South of Building 4006 – substation sampling for PCBs, and step-outs for dioxins, pesticides, and TPH

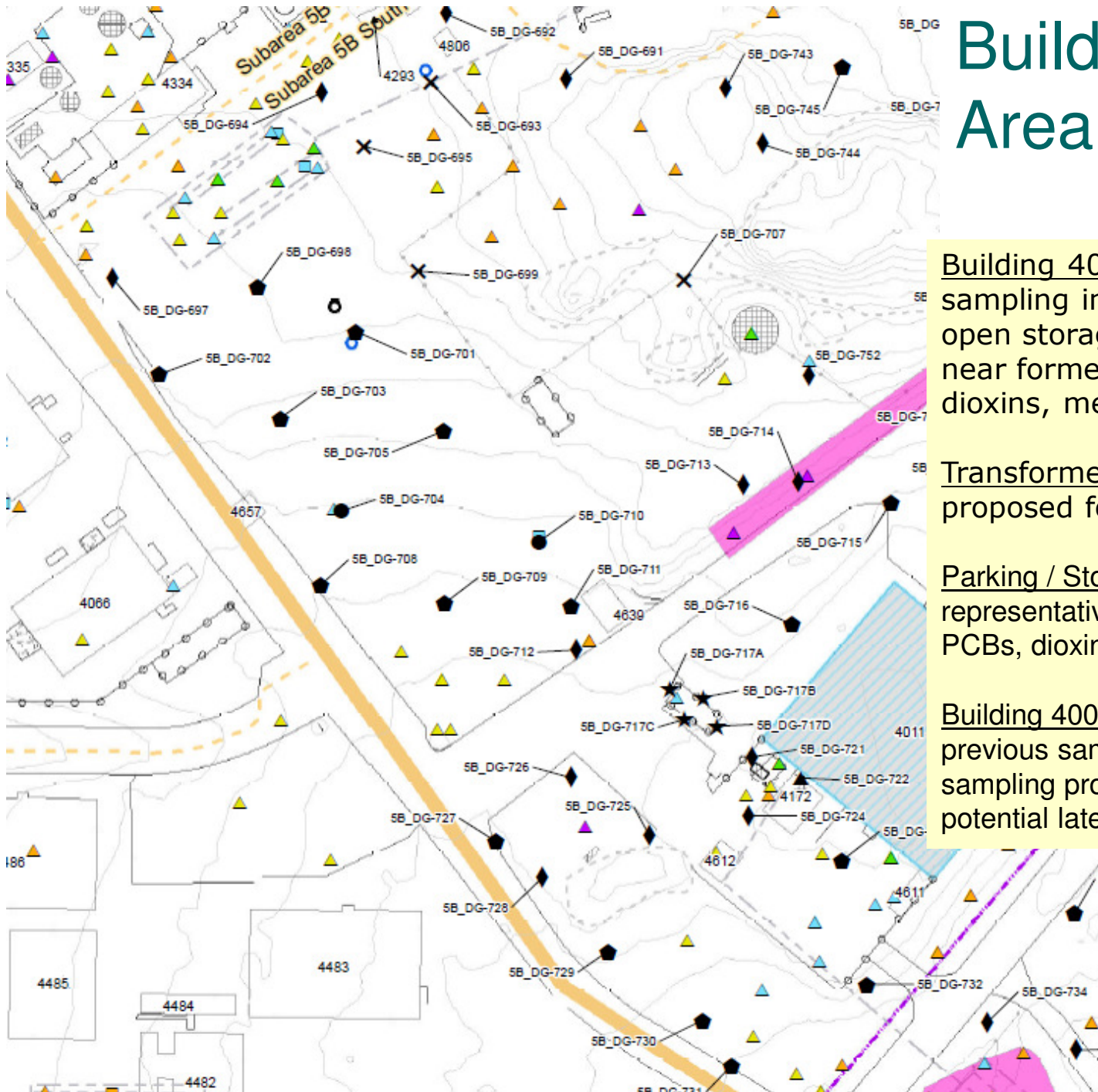
Buildings 4007/4008 – samples to assess potential storage and chemical use in buildings. Samples analysis including PAHs, PCBs, dioxins, metals, TPH, VOCs, perchlorate, formaldehyde

South of Buildings 4007/4008 – representative sampling in drainage ditch and step-outs for PAHs, and TPH

Clearly Contaminated Area – sampling in drainages for depth of impacts (PAHs, dioxins, metals, PCBs)



Building 4011 Area



- Building 4011 – representative sampling in historical drainages and open storage areas; also step-outs near former tanks (PAHs, PCBs, dioxins, metals, TPH)
- Transformer Area - samples proposed for PCBs around one pad
- Parking / Storage Area North of B4011 – representative sampling in area for PAHs, PCBs, dioxins, metals, and TPH)
- Building 4005/4006 Leach Field – previous samples to bedrock in area, sampling proposed around feature for potential lateral migration

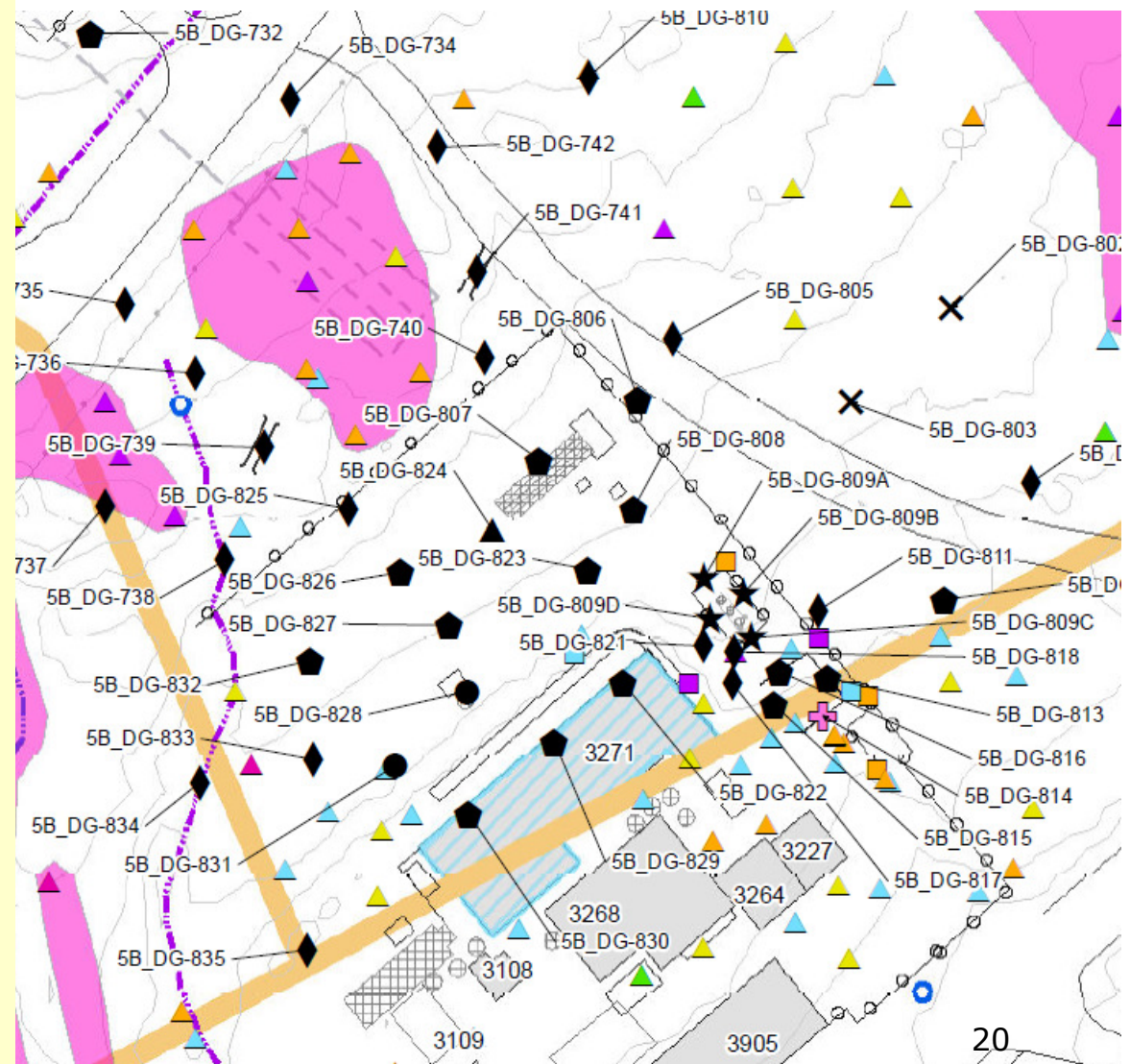
Environmental Effects Laboratory (EEL) Area

Building 4011 Leach Field – clearly contaminated area for PAHs and metals; previous sampling to bedrock so lateral samples proposed to define extent

EEL (Building 3271) – samples proposed within footprint of former building, and in north near tanks and within storage areas. Sampling also around chemical storage pad (PAHs, PCBs, dioxins, metals, hexavalent chromium, perchlorate, TPH, formaldehyde) and near transformer (PCBs). Future sampling in Area III to define extent of metals.

West of Building 3271 – step-out sampling down gradient of clearly contaminated areas, also within spray field footprint so analyzing for broad chemical suite

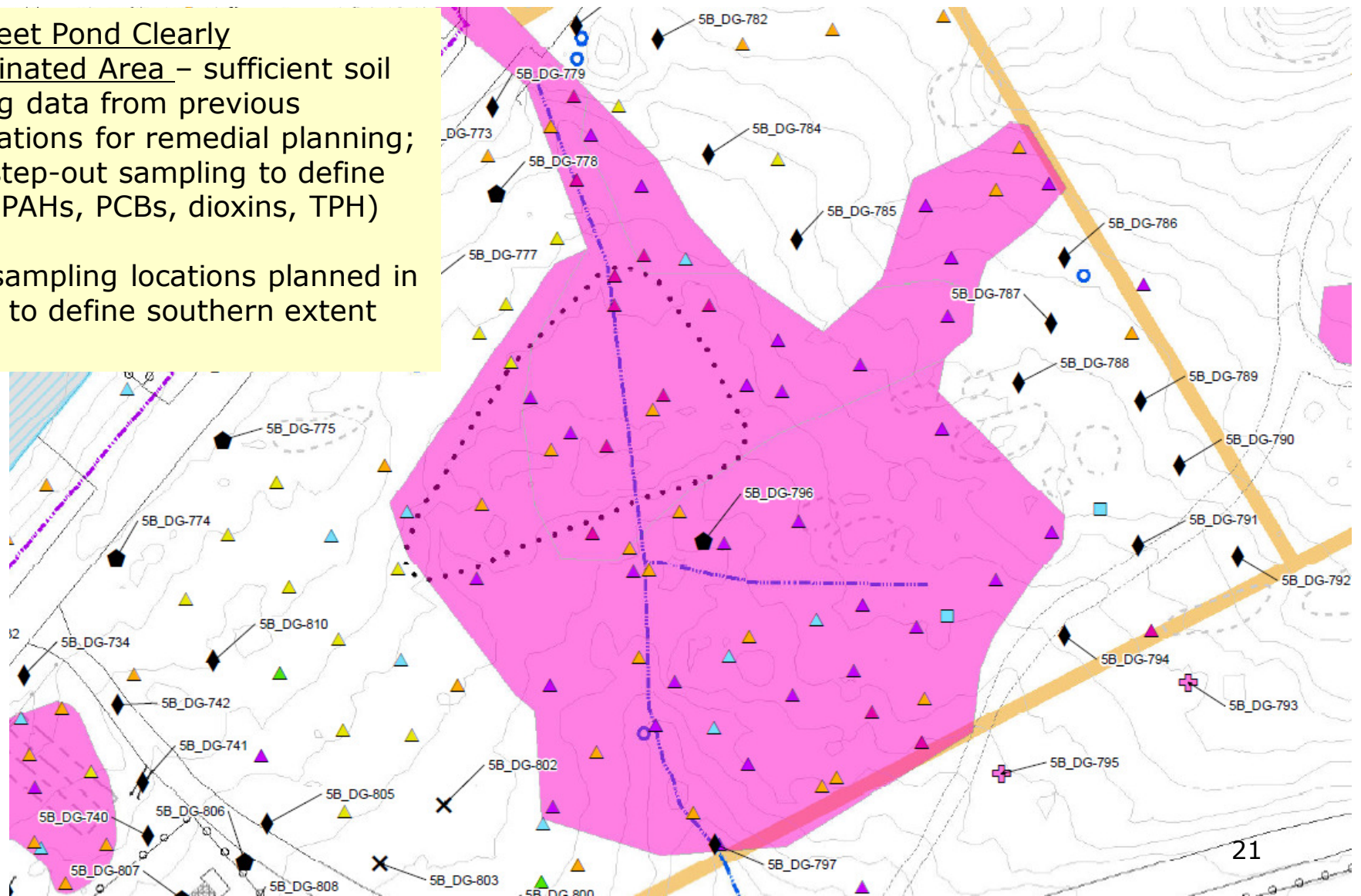
Eastern Fill Area – trenching and test pit investigation sampling to check fill depth and geophysical anomaly; proposed step-out location



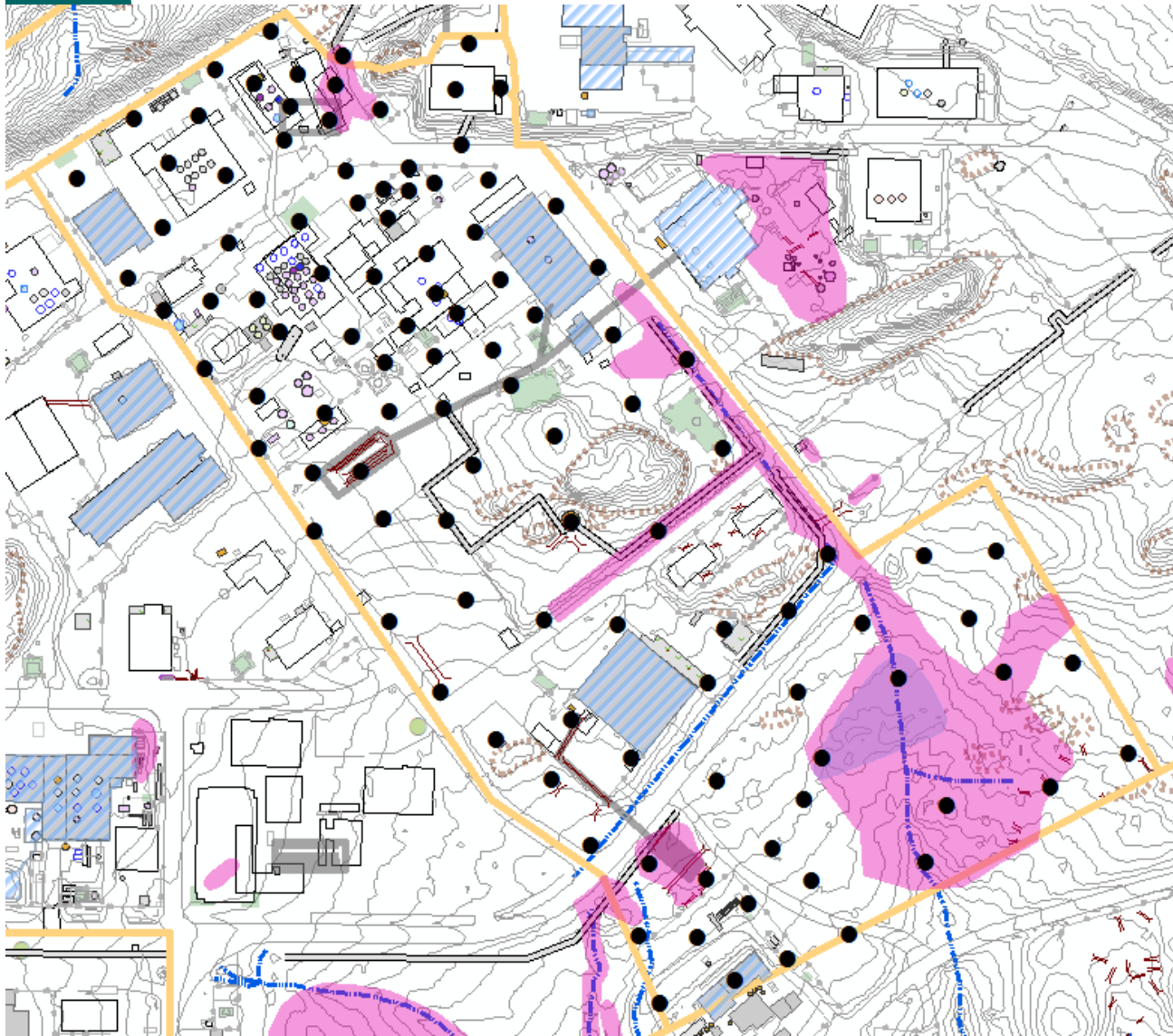
17th Street Pond Area

17th Street Pond Clearly Contaminated Area – sufficient soil sampling data from previous investigations for remedial planning; lateral step-out sampling to define extent (PAHs, PCBs, dioxins, TPH)

Future sampling locations planned in Area III to define southern extent



5B Soil Vapor Sampling Locations



Soil Vapor Locations – ~ 100 locations to provide coverage throughout 5B area, forming biased grid

Targeting selected locations within overall footprint, with more samples in the north due to density of operations. Targeted features include leach field areas, deep reactor and vault locations, containment trenches, open storage areas, and drainages (including 17th Street Pond area)



Summary of 5B Proposed Phase 3 Sampling Locations

- ~300 soil matrix sampling locations proposed (~ 600 samples)
- ~100 soil vapor sampling locations proposed (~ 150 samples)
- Analytical suites proposed based on step-out requirements or new feature assessment



Coming Attractions

- DOE/DTSC Sponsored Community Field Visit May 16 to observe ongoing sampling in Subarea 5C and/or visit locations in Subarea 5B
- Conduct Next Chemical Data Gap Investigation Scoping Meeting – tentatively June 14 for Subarea 5A
- Post Phase 1 Results Tech Memos and Data Screening Tech Memos
- Next Soil Treatability Study Group Meeting June 21



DOE Area IV EIS Community-built Alternatives Workshop Series

Session 1: Overview of Applicable Environmental Laws (May 15)

- Introduction of relevant environmental laws that must be complied with while DOE prepares the required environmental documentation and implements cleanup
- DOE's strategy for complying with those environmental laws during preparation of the EIS

Session 2: Preliminary Options for Alternative Development (June 7)

- Presentation of DOE's purpose and need for proposed action and the objectives that must be addressed by alternatives that will be analyzed in the EIS
- Rotating small-group discussions to support creative thinking about how DOE might address the various objectives

Session 3: Alternative Development Working Session (June 9)

- Working session to identify alternatives that the community would like DOE to consider in the EIS
- Subject matter experts available to help stakeholders address the requirements that must be met for an alternative to be included in the EIS

Update for Action Items

Action Item	Date Requested	Progress
DOE evaluate what is needed so that EPA could obtain radiological samples near the Building 4015 Field in Area III during this next phase of work since laboratory contracts and protocols are in place.	2/22/12	In progress.
Evaluate field conditions near NE corner of SPTF based on photograph of excavation, and add/adjust sampling if warranted.	2/22/12	Demolition occurred in the area but soils not exposed. Sampling not proposed at this time, will be included following additional demolition.
Evaluate how SPTF pond was drained and add sample at this location if warranted.	2/22/12	Pond without external drain, likely pumped or evaporated. No sample added.
Add sample location on northern edge of SPTF pond.	2/22/12	Done. Sample included in draft 5C Phase 3 sampling plan.
Provide interested stakeholder previous sediment sampling data from Building 4056 pit.	2/22/22	Maps from previous RFI report provided to stakeholder.