

Additional Material

Appendix A Explanatory materials with additional references.

1. WoE Part 1.1: Strategies to Find Hazardous Sites Whose Documents to Evaluate

To find California toxic sites whose documents to evaluate for conformity to testing guidance, one can begin by using two prominent California databases. EnviroStor <dtsc.ca.gov/your-envirostor/> is the DTSC's premier online data-management system. It tracks state-controlled (not federal) hazardous-facility assessment, cleanup, permitting, and enforcement, including US military sites with known or suspected contamination. CEQAnet <ceqanet.opr.ca.gov/> is the online, searchable database of the State Clearinghouse for California Environmental Quality Act (CEQA) documents that provide cumulative state or local environmental review of proposed actions or projects that involve federal financial assistance or development documents [1]. CEQAnet is not a comprehensive database, as most toxic sites (required to follow CEQA) have no federal financial/development assistance, thus have no documents in CEQAnet [2].

Unfortunately EnviroStor and CEQAnet databases have limited filters that allow no searches for most criteria/key words in our hypothesis. As a result, one cannot use these databases to search for toxic sites that satisfy the selection criteria listed in the text, that is, toxic sites that:

- (a) have privatized cleanup;
- (b) are in California, thus have public, government-website-accessible, toxic-site documents;
- (c) have testing-cleanup performed by/for Trammell Crow Corporation;
- (d) have undergone testing-remediation since 2011;
- (e) pose court-determined risks of "Imminent and Substantial Endangerment" (ISE) to health.

In Envirostor, there are no filters that allow one to search for a selection of toxic sites, based on any of the preceding selection criteria (privatized sites, Trammell Crow, 2011 and, ISE sites). Even advanced Envirostor searches allow only name, address, assessor's parcel number, census tract, school district, cleanup program (e.g., NPL, voluntary, etc.), funding, contaminant, past uses (e.g., aerospace rocket testing), and media affected <envirostor.dtsc.ca.gov/public/search>. One can search Envirostor for voluntary cleanups, but because much privatized cleanup is not voluntary, this search fails to capture many privatized cleanups. Moreover, Envirostor's 14,000+ toxic sites are too many to search by hand, to check whether each site's roughly 20 documents meet all 5 selection criteria above. <envirostor.dtsc.ca.gov/public/search?CMD=search&ocieerp=&HWMP=False&business_name=&main_street_name=&city=&zip=&county=&censustract=&case_number=&apn=&CRITICAL_POL=30027&Search=Get+Report>.

Similar problems beset CEQAnet. Like Envirostor, CEQAnet has limited filtering/search capacities. CEQAnet permits searches for only 2 of the preceding 7 criteria, the third ("Trammell Crow") and the fourth (by year). Yet such searches do not allow hypothesis assessment because CEQAnet contains only a small percentage of toxic sites and associated documents.

1.1 Six Strategies for Finding Hazardous-Waste Sites

Because of CEQAnet incompleteness and the inability to search either Envirostor or CEQAnet by using most of the 5 selection criteria, Envirostor and CEQAnet cannot generate a reliable list of current TC California cleanups that meet our 5 toxic-site, selection criteria. To generate such a list, one needs at least 6 interdependent, successive strategies, only the last of which generates the final results:

- *Strategy 1:* employ (a) CEQAnet <ceqanet.opr.ca.gov/> and the two online (b) TCC lists of California toxic sites that TCC is testing, remediating, or redeveloping [3, 4], so as to generate a **preliminary, unedited toxic-site list** of California redevelopment projects that meet the first 3 of 5 selection criteria.
- *Strategy 2:* use Strategy-1 results to conduct internet searches for addresses of each Strategy-1 site, then use these addresses to strike all differently named, same-address, duplicate sites, thus generate a **preliminary, nonduplicate toxic-site list** of locations that meet the first 3 of 5 selection criteria.
- *Strategy 3:* use each Strategy-2 address to search Envirostor <dtsc.ca.gov/your-envirostor/> and CEQAnet, then download and examine all official documents for each site. Remove any sites that are not redevelopments of installations that state or federal governments list as former or existing hazardous facilities, then use the resulting inventory to generate a **preliminary, nonduplicate, toxic-site list** of redevelopment projects, based on the first 3 of 5 selection criteria.
- *Strategy 4:* use all Strategy-3 downloads to find all testing-and cleanup-related documents for each site; assess each document, so as to determine which hazardous facilities meet the fourth (2011 and later projects) of the 5 selection criteria; and thus generate a **preliminary, nonduplicate, toxic-site list** of redevelopment projects, based on the first 4 of 5 selection criteria.
- *Strategy 5:* Use all Strategy-4 downloads of all testing-and cleanup-related documents for each site present on the final Strategy 4 list. Carefully search each site document, so as to determine which hazardous facilities meet the fifth (“Imminent and Substantial Endangerment” or ISE sites) of the 5 selection criteria; accomplish this task by using three different, successive search terms for each document, namely, “imminent”, “substantial”, and “endangerment”, so as to determine which sites have had ISE orders issued to them. Such orders are likely to be included as part of the history of the toxic site, often provided at the beginning of cleanup documents. Make a list of all sites for which such orders were issued, and thus generate a **preliminary, nonduplicate, toxic-site list** of redevelopment projects, based on the first 5 of 5 selection criteria.
- *Strategy 6:* Use all Strategy-4, downloaded site documents to pursue an additional way to find ISE sites, given that Envirostor and its documents do not typically list all legal documents, such as those for ISE, on its website. This additional way to find ISE sites is to go to the main Envirostor webpage for each toxic site, then copy the address of the site. Because the names and owners of toxic-site property often change, conduct a google search using (a) the address of each hazardous site; (b) the words “imminent”, “substantial”, and “endangerment”; and (c) the city and state of each respective site.

The preceding directions mean that the google search, for each toxic site on the resulting Strategy-4 list, will include words such as the following:

“3202 East Foothill Boulevard”, imminent and substantial endangerment, [city of the toxic site], [state of toxic site].

The result of conducting such searches for each resulting Strategy-4, toxic site, should be a list of toxic sites (meeting the earlier criteria, (a)-(d)) that received ISE orders. Once the toxic sites on the Strategy 6 list are added to those on the Strategy 5 list, one will have a **final toxic-site list**, based on all 5 selection criteria.

1.2 Implementing the Six Strategies for Finding Hazardous-Waste Sites

To implement preceding Strategy 1, we used the search term “Trammell Crow” (TC) in CEQAnet and found 23 entries. To find (b) lists of California TC assessment, remediation, redevelopment sites, we went to the website of TC Vice President (Robert Chute), in charge of all Environmental Risk Management and hazardous locations; he lists 6 TC toxic-site projects [4]. Because TC is “the industry leader in Brownfields development” [3], next we went to the website of TC’s major unit, Brownfields Acquisition and Development (BAD), within the environmental-risk or EASI (Environmental Asset Services, Inc.) Division; it contains a list of 26 toxic sites that TC is working on [3]. Strategy 1 thus provides a list of (CEQAnet + Chute + EASI) projects numbering (23 + 6 + 26), 55 in all. This is a 55-item **preliminary, unedited, toxic-site list** of TCC California redevelopment projects that meet the first two of our 5 criteria.

We implemented Strategy 2 to eliminate Strategy-1 duplicates. (Duplicates occur because TC lists its toxic sites in inconsistent ways: by pre-redevelopment, post-redevelopment, informal, or LLC names; or combinations of the preceding labels [3, 4].) Strategy 2 generates a **25-item** (9 + 5 + 11) list, respectively, of (CEQAnet + Chute + EASI) projects: a **preliminary, nonduplicate, toxic-site list** of TCC projects that meet our first 2 selection criteria.

We implemented Strategy 3 by using Strategy-2 addresses as search terms, downloading Envirostor and CEQAnet documents for the 25 sites, then examining the documents, so as to strike (from our Strategy-2 list) all projects not at current or former hazardous-waste sites. Strategy 3 thus generates 11 (CEQAnet + Chute + EASI) or (2 + 2 + 7) toxic-site redevelopments---an **11-item**, TCC, California, **preliminary, nonduplicate toxic-site list**, based on the first 3 selection criteria.

To implement Strategy 4, we assessed Strategy-3 findings (documents from all TCC toxic-site redevelopments, as found on Envirostor and CEQAnet) to determine which projects meet selection criterion (iii), having site testing/cleanup conducted since 2011.

To implement Strategy 5, we used our Strategy-4 findings (that is, all documents from all TC toxic-site redevelopments, as found on Envirostor and CEQAnet) to determine which sites meet selection criterion (e), having been issued an Imminent and Substantial Endangerment (ISE) order by the state of California. However, by using Strategy 5, we found only one toxic site, listed in Envirostor site documents, as having had an ISE order, namely NOTSPA.

To implement Strategy 6, we assessed Strategy-4 findings (by conducting the google search, as specified earlier). Strategy 6 revealed only one additional site that had an ISE Order, namely the Santa Fe Railyards site. Combining the results of Strategies 5 and 6, we had two toxic sites that met all 5 of our criteria, in order to be assessed in our study.

References

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