

October 14, 1999

SCHOOLS WHITE PAPER – PREPARED BY THE CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL (DTSC)

DTSC introduction to the contaminated schools issue

In July 1995, staff from the Department of Toxic Substances Control (DTSC) discovered that a new school (Jefferson New Middle School) was under construction across the street from a State Superfund site. The Jefferson School is located in south central Los Angeles, just east of the 110 Freeway at Slauson Boulevard. Subsequent investigations conducted by the Los Angeles Unified School District (LAUSD), under DTSC oversight, determined that the site had never been properly characterized for contamination prior to acquisition or construction, and that many questions remained unanswered regarding cleanup activities that had been performed at the site prior to construction of the school.

This DTSC discovery was the first in a series of events that prompted several legislative hearings and two reports from the Joint Legislative Audit Committee (JLAC), chaired by Assemblymember Wildman, on LAUSD school site acquisition activities. Senator Hayden, Chair of the Senate Natural Resources Committee (SNRC), also conducted several hearings on LAUSD's environmental due diligence and site acquisition practices, focusing primarily on the Belmont Learning Center school complex which is undergoing construction in downtown Los Angeles.

In March 1999, the chairs of the JLAC, SNRC, and the Assembly Committee on Environmental Safety and Toxic Materials (Chair, Hannah-Beth Jackson) convened an investigative hearing on Jefferson Middle School and the Belmont school complex. Senators Polanco and Alarcón and Assemblymember Washington also participated in this hearing. As a result of these inquiries, Senator Hayden, Assemblymember Wildman, and several other legislative members concluded that some school districts, particularly LAUSD, have not exercised an appropriate level of environmental review in selecting sites for new schools.

The hearings and reports documented inadequacies in Education Code requirements that prescribe procedures for acquiring and constructing new schools, especially if the construction is proposed for contaminated properties. The JLAC found that the Department of Education consistently signed off on the acceptability of properties for acquisition before a complete site

characterization had been conducted. JLAC also found that, under then-current law (which has been revised by recently signed legislation), a school district has the responsibility and authority to report on school site contamination and plans for its remediation and to certify to the Department of Education that remediation had been completed. At the various hearings, the Department of Education was criticized for failure to have trained professionals, knowledgeable in hazardous substances, review the environmental documentation submitted with applications for State funding.

The JLAC reports raised questions about several other school site acquisitions in LAUSD. At Assemblymember Wildman's request, DTSC completed review of previous environmental documentation for seven additional sites. Based on this review, DTSC identified deficiencies in each of their site characterizations. At least two of the sites are heavily contaminated, and there has been no coordinated investigation or remediation program in place at the sites (yet construction is already underway at the Belmont Learning Center). Overall, through these various hearings and reports, questions have been raised about school sites in the greater Los Angeles area, existing school sites, and about how prevalent these problems are statewide.

DTSC Accomplishments at Contaminated Schools

In response to the schools contamination issue, DTSC formed a dedicated Schools Unit to identify existing LAUSD schools that have known remediation systems on-site, or possible contamination on or off site (that can affect the school). The Schools Unit is actively working on a number of sites. Another priority is working with LAUSD to develop a boilerplate Preliminary Endangerment Assessment (PEA) work plan. A draft Voluntary Cleanup Agreement (VCA) that includes 47 proposed and existing LAUSD schools is also being finalized. Some highlights of significant accomplishments to date are provided below.

- **Suva Elementary and Intermediate Schools - Montebello, California**

In response to public concern over the possibility of adverse health effects being experienced at a school due to contamination from an adjacent chrome plating facility, DTSC coordinated an expedited multi-agency/multi-media environmental investigation. Within six months, DTSC held public meetings to listen to parent and community concerns, conducted a thorough investigation of the school, oversaw the removal of contaminated soil from the school grounds, and ordered the chrome plating facility to undertake measures to prevent the potential for contaminant exposure of children attending the Suva Schools. DTSC also identified problems with lead paint, and, as a result, the school district conducted a large-scale lead abatement program.

- **Belmont Learning Center – Los Angeles, California**

To address an inquiry by the Joint Legislative Audit Committee, DTSC took the lead role in overseeing environmental and public health issues with respect to this large high school construction project. DTSC has been instrumental in investigating the potential risks at the Belmont site due to the presence of methane gas and other contaminants of concern that are related to an oil field. The Belmont project is currently in the remedial

investigation/feasibility study stage. DTSC will continue to provide assistance and project oversight to LAUSD until a remedy (if one is possible), which is protective of public health, is developed and implemented.

- **Jefferson Middle School – Los Angeles, California**

As noted in the introduction, DTSC staff discovered that a new school (Jefferson Middle School) had been built across the street from a State Superfund site. DTSC's investigation revealed that the Jefferson Middle School was constructed on a former industrial property, and had a poorly designed and malfunctioning soil vapor extraction system. DTSC responded immediately by investigating and determining that there was not an immediate health threat at the school. However, further investigation of the subsurface was required. DTSC is working with LAUSD to complete a remedial investigation/feasibility study for the school property.

- **Pacifico High School – Oxnard, California**

Oxnard Union High School District officials approached DTSC with a time-critical need to evaluate a site on which they propose to build the new Pacifico High School. Plans to build the much-needed school were in jeopardy if the district were to fail to obtain Department of Education approval. This approval hinged on conducting a Preliminary Endangerment Assessment (PEA), with DTSC approval, to demonstrate that the proposed site was safe. DTSC responded by working closely with the District and their consultant to conduct an expedited (approximately 75 days), yet thorough PEA. The site was investigated, a human health risk screening analysis was conducted, and the District received a letter from DTSC confirming that the site is safe.

- **Francis Polytechnic High School (Los Angeles), Towne Avenue Elementary School (Carson), and Third Street Elementary School (Los Angeles) – California**

These three LAUSD schools were the subject of an investigation to determine if an imminent public health threat existed as a result of their proximity to landfills. DTSC worked hand in hand with LAUSD's consultant to develop and implement site-specific investigation workplans for each of these existing schools. While the data collected does not indicate that there is an imminent threat, a thorough investigation will be conducted to evaluate the school sites more closely.

- **Monroe Primary Center -- Panorama City**

In April 1999 DTSC agreed to oversee a Phase I and Phase II investigation conducted on LAUSD property upon which a primary center (school for grades K-3) was scheduled to be constructed. The property was a vacant lot, which at one time contained residences. The investigation showed unacceptably high levels of lead and pesticides in the surface soil. The surface soil was excavated and taken to a permitted disposal facility. The top seven feet of soil was then graded to prepare the site for the construction of the school. During the grading operations, three septic tanks and two cesspool areas were discovered and removed. DTSC recommended further sampling be conducted in those areas. LAUSD conducted the sampling, which showed that the site did not pose a risk to human health or the environment. DTSC subsequently issued a "No Further Action" (NFA) letter on June 9, 1999 and school construction proceeded immediately.

- **Valerio Primary Center – Van Nuys**

LAUSD requested DTSC oversight of a Preliminary Endangerment Assessment being conducted on land formerly used as a horticultural area for a junior high school. LAUSD planned to construct another primary center on this property during the summer and to open the school for its first students in the fall. Site soil was tested for metals and pesticides. Soil contaminated with lead from old lead-based painted buildings was removed along with 2,500 cubic yards of soil containing high levels of arsenic. The investigation and soil removal was conducted concurrently with the construction of the primary center so as not to delay the opening of the school. DTSC issued an NFA on October 12, 1999. The NFA was contingent upon DTSC concurrence that any soil brought to the site to replace the 2,500 cubic yards must be certified as clean. The primary center is scheduled to open to students the week of October 25, 1999.

How the DTSC Site Mitigation Process Works for School Sites

(Please note that a Glossary of terms is included as **Attachment A** to this white paper.) The process utilized by DTSC in reviewing school sites is described below and is also portrayed in an attached flow chart (**Attachment B**).

Phase I Environmental Site Assessments/Preliminary Endangerment Assessments

Two recently signed bills (which are described in detail in a later section of this paper) now prescribe the process for DTSC review and approval of school site environmental safety. These bills take effect as law on January 1, 2000. Before their enactment, there was no requirement in state law that DTSC review and approve environmental due diligence documents prior to school property acquisition.

In June 1999, CDE requested that DTSC review all Phase I Environmental Site Assessments (Phase I Assessments) and also work with them in an expedited fashion to reduce their backlog of Phase I Assessments. The agencies agreed to work together on an interim basis to review the Phase I Assessments while an Interagency Agreement (IAG) was under development. Under the IAG and the interim agreement in principal, CDE forwards all Phase I Assessments to DTSC for review. Through January 1, 2000, all DTSC costs for review of the Phase I Assessments are borne by the Department of Education. After January 1, 2000, CDE will be the payor to DTSC, but the affected school districts will be charged an application processing fee by CDE which will include DTSC's costs for review of the Phase I Environmental Site Assessments. (DTSC uses the American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments as guidance for the Phase I Assessments.)

Following review of the Phase I Assessment, DTSC advises CDE of any deficiencies and will determine that either: (a) no action is required at the property; or (b) a Preliminary Endangerment Assessment (PEA) is required. A "No Action" determination by DTSC means that the property is suitable for school site development, and ends DTSC involvement with the

site. DTSC will make the “PEA Required” determination if the Phase I Assessment indicates that there may be contamination on the property. Once a “PEA Required” determination is rendered, the School District enters into an Enforceable Agreement with DTSC to govern the next phases of the review process. Alternatively, the District may withdraw its interest in the property.

DTSC/School District Enforceable Agreements

Enforceable Agreements (under DTSC’s Voluntary Cleanup Program) require that the District prepare and submit for DTSC approval, a PEA consistent with DTSC’s PEA Guidance Manual. DTSC assists the District in scoping the PEA. The PEA process requires environmental sampling sufficient for the Department to determine whether or not health or environmental risks exist on the property. A risk analysis is performed as part of the PEA. If the PEA demonstrates that no health or environmental risks exist, DTSC will issue a letter to the District indicating that no further action is required.

If the PEA finds that risks from hazardous substances exist at the site, a much more thorough study of the site, and potentially cleanup actions, will be required if the District still wishes to pursue development of the property. A new agreement or an amendment to the existing agreement would be entered into between DTSC and the School District to address the additional work. For existing schools where contamination was suspected, or remediation systems require evaluation, the School District would enter into an enforceable agreement with DTSC to oversee the environmental work. In all cases, the enforceable agreement could include the legal requirements, the scope of work, a schedule of activities, an estimate of DTSC costs and provisions for payment of DTSC costs for work conducted pursuant to the agreement.

A Remedial Investigation which may involve extensive sampling of soil, ground and surface water, and air, must be conducted to determine the full nature and extent of contamination. Based on this information, a Human Health Risk Assessment must be prepared to establish residential cleanup objectives for the property. The residential cleanup level is used conservatively and considers children as the exposed population. Using information developed in the Remedial Investigation and Health Risk Assessment, a Feasibility Study is conducted to identify a range of remedies for the site that will meet cleanup objectives.

Following approval of the Remedial Investigation, Health Risk Assessment, and Feasibility Study by DTSC, a preferred remedy is identified. Before this remedy can be implemented, it must be formally adopted by DTSC through approval of either a Removal Action Workplan (RAW) or a Remedial Action Plan (RAP). The RAW or the RAP must also meet the requirements of the California Environment Quality Act (CEQA). The Removal Action Workplan is reserved for cleanup activities that cost less than \$1,000,000 and are relatively straightforward (such as a soil excavation with offsite disposal) and are unlikely to generate significant public concern. In some instances, especially for small soil removals, it may be possible to expedite the process by going directly from the PEA to the RAW. The process for approval of the RAW includes providing a public fact sheet and, if appropriate additional public participation activities. The RAW usually contains a detailed cleanup workplan, so that after it is approved, cleanup activities can be implemented expeditiously.

The Remedial Action Plan requires the evaluation of remedial alternatives by several prescribed criteria. A 30-day public comment period and at least one public meeting are also required. After approval of the Remedial Action Plan, an engineering Design is submitted to DTSC for approval before the cleanup is implemented.

Following Cleanup/O&M Agreements

After cleanup activities identified in the Removal Action Workplan or Remedial Action Plan are completed, DTSC provides a Certification that all remedial activities have been properly implemented at the site and the property is suitable for use as a school site.

Some cleanup actions may require long-term Operation & Maintenance (O&M). These include groundwater or soil vapor extraction and treatment systems. In these situations, DTSC will continue to oversee ongoing activities through an O&M agreement with the District. DTSC must carefully evaluate and determine if it is appropriate to allow school use while O&M activities are being conducted, to ensure that children's health is not impacted.

Brownfields issues

Brownfields are sometimes characterized or defined as properties that are abandoned or underutilized due to actual or perceived contamination, and that have redevelopment or reuse potential. In addition to being found throughout urban areas, in California, brownfields are found in rural areas (e.g., agricultural lands, abandoned mine lands, burn dumps, abandoned lumber mills). Schools should be located in close proximity to the school children served, and because the availability of land in more densely populated urban areas is limited, it may be necessary to reuse brownfields in urban areas (and in some rural areas) as school properties. There are pros and cons to using brownfields properties for school construction. Recycling brownfields can curb urban sprawl and its associated problems (increased traffic load and degradation of air quality, increase in infrastructure needs and taxes, loss of open space). It can also facilitate placement of schools in close proximity to the community served by the school, while limiting the need to "take" residential properties for new school construction. Placing a school in an urban area can initiate revitalization of the area overall. Brownfields can have low to high levels of contamination, depending upon the prior use of the property.

Should schools be located on properties with significant contamination? While most properties can ultimately be cleaned up if time or costs are not a factor, DTSC recommends that significantly contaminated sites be dropped from further consideration after the Preliminary Endangerment Assessment is completed. In these instances, DTSC recommends that other properties be evaluated for the school location. Additionally, DTSC recommends that school sites not be located in areas with brownfields surrounding the proposed location. The proposed school site location could be "clean", yet there may be significant unknown contamination in close proximity which may impact the school site and children's health.

While reuse of brownfields as school properties can be a viable option which may offer positive benefits to the community, these properties (and their surroundings) must be carefully

scrutinized (and some should be dropped from consideration completely) to ensure that their selection represents a truly safe environment for school children. DTSC cleanup standards for schools are very stringent to ensure cleanup is protective of children's health, and all properties must be cleaned to these standards, regardless of their status as a brownfield.

School Funding Issues (Prop IA)

Proposition 1A provided state funding for schools construction in California. Two provisions in the proposition pertain to contaminated schools cleanup. One provision addresses class size reduction needs. Districts operating at levels above the required 20 to 1 students/teacher ratio could apply for funds. (LAUSD has been operating at levels higher than this ratio under waivers granted for this purpose.) Only LAUSD and the Santa Ana School District applied for this funding. LAUSD received an apportionment of \$278 million (construction dollars) which they must "match" using local resources (either local bonds or other sources of funding). To obtain these Prop 1A funds, LAUSD had to develop a specific plan for 48 new schools (primary and elementary schools) to address classroom reduction needs.

It is DTSC's understanding that the recently signed legislation (SB 162 and AB 387) does not affect the schools funded by Prop 1A class size reduction monies in that the legislation does not mandate DTSC review/approval of environmental documents for these schools. However, the State Allocation Board (SAB) recently negotiated an agreement between the California Department of Education (CDE) and LAUSD, whereby these Prop IA funded schools will follow the same process as other proposed state funded schools. Under the terms of the agreement signed in mid-September 1999 between CDE and LAUSD, all environmental documents and work is to be overseen by DTSC; DTSC certification that sites are safe for school occupancy will be required prior to the State Allocation Board allocating IA funds for construction.

The second relevant provision in Prop 1A addresses schools construction needs based on growth estimates. In order to obtain the funding, the school project must be "ready to go" (property must have been acquired, and all other transactions must have been completed so construction can start immediately). LAUSD's "Growth Master Plan" includes 50 additional schools. The total numbers of schools to be constructed over the next decade may change due to estimates of growth in LAUSD student populations. The estimated cost for these 50 schools is \$1.8 billion, \$900 million to be provided by Prop 1A funds and the LAUSD "match" of \$900 million provided by Prop BB (local Bond funds).

SB 50, the legislation which established the "rules" for Prop 1A funding, required that school districts not purchase properties at a discounted rate (e.g. to purchase a contaminated property, the school district would have to force the owner to cleanup the property at their cost, once completed, the district would then pay full value for the property). This SB 50 provision could have significantly hampered LAUSD's ability to obtain state funds and begin school construction. However, among other things, AB 387 addressed this problem by providing that school districts can assess value to properties based on their condition (e.g., a contaminated property can be purchased at a discounted rate to address costs necessary to cleanup a property).

Using the new AB 387 provision, acquisition and cleanup can now be achieved more quickly, therefore the school district could seek 1A funds much sooner than under SB 50.

Prop 1A funds can be used to pay for cleanup costs and DTSC costs. Based on DTSC's current understanding of both categories of Prop 1A funds, allocation of funds to LAUSD would occur after DTSC has certified that the property has been remediated. (A more thorough explanation of school funding issues can be provided by LAUSD.)

DTSC Role in School Cleanup as Defined by Recent Legislation

SB 162 (Escutia, Chapter 1002, Statutes of 1999) and AB 387 (Wildman, Chapter 992, Statutes of 1999)

These two bills codify a number of the current voluntary processes by mandating the involvement of DTSC in the selection of properties where new school construction is planned, to ensure that new schools are not built on properties contaminated with hazardous materials, including naturally occurring hazardous materials. School districts are required to reimburse DTSC's costs associated with these new requirements. The new process (which mirrors many aspects of the process that was put in place on a voluntary basis under the interagency agreement) will work as follows:

- School districts which intend to use state school bond funds to build new schools must hire a qualified private consultant to conduct a Phase I Environmental Assessment of the proposed school site property. The Phase I Assessment reports, together with all other required submittals are sent to the California Department of Education (CDE) for coordination and approval. CDE is required to forward all Phase I Assessments to DTSC for review and approval. If DTSC finds that the Phase I investigation was conducted in an adequate and complete manner, and that there is no basis for believing that the proposed property is or may be contaminated, then the school district is authorized to purchase the property in question provided that they have met all the other requirements of existing laws, regulations and policies.
- If the Phase I report and/or DTSC determine that a property may be contaminated, then the school district must conduct a Preliminary Endangerment Assessment (PEA) under DTSC oversight. The school district would hire a private consultant to conduct the PEA and contract with DTSC to approve the PEA workplan, oversee the PEA work, and review and approve the final report. If the Preliminary Endangerment Assessment approved by DTSC determines that the property is suitable for school construction without any additional investigation or work, the school district may purchase the property provided that they have met all other procedural requirements.
- If the Preliminary Endangerment Assessment determines that the proposed property has a significant hazardous materials contamination problem, then the school district must make a decision to either find a more suitable property, or fund cleanup of the contaminated property to a level (which must meet residential cleanup standards) approved by DTSC.

- If the school district chooses to remediate a contaminated property, it must contract with DTSC to oversee the cleanup to a level that meets applicable state standards. If additional contamination is found at the site during cleanup, the school district may determine that it will not be cost effective to complete the cleanup and may decide to look for a more suitable property.
- Although unlikely, it is possible that during school construction, contamination may be found on a property that had earlier been determined by DTSC to be free of contamination. It is also possible, but unlikely, that additional contamination may be found at a site during school construction where a cleanup had been performed earlier under DTSC oversight. In these situations, school districts are required to bring the information to DTSC's attention and to stop construction until DTSC determines it is safe to proceed. Finally, these two new laws provide that no new school constructed on previously contaminated property shall be opened for use until DTSC has determined that it is safe to do so.

DTSC Plans for Schools Program Implementation

Staffing plans and issues

DTSC has prepared Budget Change Proposals (BCPs) for FY 2000-2001, which request a significant number of new positions within DTSC to expand its capabilities with regard to toxic school issues/activities. Given the public's and schools districts' concerns, these activities would have been ongoing (in DTSC's opinion) whether or not the recent legislation was enacted into law. New DTSC resources will be used to provide reviews of Phase I Assessments and Preliminary Endangerment Assessments as well as for oversight of any necessary cleanups needed at existing schools or at properties proposed for new school construction. These additional resources will also provide the necessary geotechnical, toxicology and public participation support to such projects.

DTSC's working model for the schools program

DTSC has established a group within its Site Mitigation Program to provide services to schools. This enables staff and management within the group to focus on schools issues and to become sensitized to the unique issues associated with contamination at existing schools and at school sites. For example, school projects often entail a higher level of public interest (particularly existing schools) than do other projects of comparable size and complexity. School projects also tend to operate on a shorter time line than do other Voluntary Cleanup Program projects, due to the need for existing schools to be deemed habitable and to allow local school districts to proceed with new school construction as quickly as possible.

DTSC recently established a Schools Unit in its Glendale office that will service schools in the LAUSD area. As more personnel are needed for the schools program, additional unit(s) will be added in Southern California and in other regions of the state, as needed, to meet the needs of school districts statewide. All staff for the schools programs will be managed in a consistent

manner within the Site Mitigation Program to ensure program consistency as the program grows. A multi-disciplinary team of DTSC experts works collaboratively with the schools unit to ensure that all issues are addressed (such as geologists, engineers, toxicologists, and public participation specialists).

A Top DTSC Management Priority

The schools program is among DTSC's highest priorities. As such, the Department is fully committed to the program's success. To make that happen, DTSC will be administratively establishing new positions and filling vacancies in the current fiscal year to deal with the already greatly increased demand generated by various school districts (particularly LAUSD). DTSC is also currently handling a significant volume of Phase I Environmental Assessments that began being routed to DTSC by the Department of Education for review and approval beginning in July of this year. Finally, DTSC plans to begin now to aggressively implement the provisions of the two bills which were recently signed into law (SB 162 and AB 387), instead of waiting until FY 2000-2001 Budget BCPs come on line next July.

What Does DTSC Need From LAUSD for Program Success?

In order to have a successful working relationship with LAUSD, DTSC needs:

- A single point of contact with LAUSD;
- Prioritization by LAUSD of all school projects; and,
- PEA project schedules for each site in Microsoft Project format

Single Point of Contact

It is important that LAUSD consolidate responsibility for all environmental projects that will be brought to DTSC for review. It has been difficult for DTSC to determine who directs policy, sets priorities, and is ultimately responsible for determining which projects LAUSD wants to work on first. A single point of contact with the above responsibilities would be of great assistance. DTSC anticipates that the new LAUSD Director for the Environmental Health and Safety Branch will fill this gap.

Prioritization of School Projects

In order to work on projects LAUSD considers to be top priority, DTSC needs LAUSD to provide a list of all its school sites, along with the proposed order in which they would like DTSC to work on them. With such a prioritization, DTSC can better meet LAUSD's needs. DTSC will also be better prepared to adjust its staffing levels to provide the necessary service that LAUSD requires at the time that it is most needed.

PEA Project Schedules for Each Site in Microsoft Project Format

Microsoft Project schedules are also necessary to help both LAUSD and DTSC plan for conducting PEAs at the multitude of schools planned for construction over the next several

years. These schedules can also be used as an effective tool to adjust staffing levels and to eliminate unrealistic expectations.

Impediments to Successful Program Implementation

Lack of any of the items noted in the preceding section will significantly slow DTSC program progress. In addition, it is critical that LAUSC use PEA and CERCLA knowledgeable consultants and contractors. This will reduce the amount of time necessary for DTSC to educate consultants and contractors, minimize DTSC comments, and reduce delays due to poor quality and incomplete documents.

Attachment A

Glossary

California Environmental Quality Act (CEQA)

The California Environmental Quality Act (CEQA) was enacted in 1970 (Public Resources Code 21000 et. seq., 14 California Code of Regulations, 1500 et. seq.) to ensure that public agency decision-makers document and consider the environmental implications of their actions. The CEQA process serves as a means by which the public interacts with the decision-makers in developing policies affecting the environment. CEQA requires public agencies to prepare an environmental impact report (EIR) whenever the approval of a proposed project may cause significant effects on the environment. An EIR is a detailed statement designed to identify the significant effects of a project, to identify alternatives to the project, and to indicate ways to mitigate the significant effects. CEQA requires that appropriate measures be taken to prevent avoidable damage to the environment.

The Department of Toxic Substances Control (DTSC) is often responsible for carrying out CEQA procedures for various projects. These projects include hazardous waste facility permits, permit renewals and expansions, site mitigation, facility closures, and other hazardous waste activities. In all of these activities, CEQA serves to identify the potential environmental impacts and mitigation measures, and to provide a vehicle for the public to review and comment on project impacts.

Certification

A formal determination by DTSC that the remedial actions and requirements of an approved Remedial Action Plan (RAP) or Removal Action Workplan (RAW) have been met and, therefore, the site is safe for school use.

Design

Document approved by DTSC which includes detailed engineering plans, schedules, and cost estimates for remedial actions selected in a Remedial Action Plan.

Enforceable Agreement

An agreement between the School District and DTSC that addresses the scope of work, schedule for conducting site investigation and cleanup activities, and an estimate of DTSC oversight costs.

Exposure Pathway

Existing or hypothetical route by which chemicals in soil, groundwater or other media can come into contact with humans, animals, or plants.

Extraction/Treatment System

The equipment, including the wells, pumps, piping, and treatment plant necessary to pump and

remove contaminants from groundwater, and transfer treated water to an appropriate disposal point, e.g. sewer or storm drain.

Health Risk Assessment

A health risk assessment is a document that describes the possible health risks that may result from exposure to contaminants at a site. This is part of the Remedial Investigation/Feasibility Study (RI/FS) process.

Implementation

This activity involves construction of remedial or removal actions specified in a RAP or RAW. Implementation also includes performance testing, start-up and shake down procedures necessary to insure the remedial measure is performing as designed. Completion of this phase requires final inspection and approval by DTSC.

Operation & Maintenance

Operation & Maintenance (O&M) includes all actions necessary to ensure the proper performance of facilities over the lifetime of remedial actions implemented pursuant to a RAW or a RAP. Scheduled O&M activities are identified in an O&M plan which is subject to DTSC approval.

Phase I Environmental Site Assessment

A preliminary assessment of a property to determine whether there has been or may have been a release of a hazardous material, or whether a natural occurring hazardous material is present, based on reasonably available information about the property and the area in its vicinity. A Phase I environmental assessment may include, but is not limited to, a review of public and private records of current and historical land uses, prior releases of a hazardous material, database searches, review of relevant files of federal, state, and local agencies, visual and other surveys of the property, review of historical aerial photographs of the property and the area in its vicinity, interviews with current and previous owners and operators, and review of regulatory correspondence and environmental reports. Sampling or testing is not required as part of the Phase I environmental assessment.

Preliminary Endangerment Assessment (PEA)

An activity that is performed to determine whether current or past hazardous material management practices or waste management practices have resulted in a release or threatened release of hazardous materials, or whether naturally occurring hazardous materials are present, which pose a threat to children's health, children's learning abilities, public health, or the environment. A preliminary endangerment assessment requires sampling and analysis of a site, a preliminary determination of the type and extent of hazardous material contamination of the site, and a preliminary evaluation of the risks that the hazardous material contamination of a site may pose to children's health, public health, or the environment.

Remedial Action Plan (RAP)

A plan, approved by DTSC, that outlines a specific program of remedial actions to cleanup a contaminated site. Once the Draft Remedial Action Plan is prepared, a public meeting is held and comments from the public are solicited for a period of not less than 30 days. After the public

comment period has ended and public comments have been considered and responded to in writing, DTSC approves the final remedy for the site (the Final RAP).

Remedial Investigation/Feasibility Study (RI/FS)

A series of investigations and studies to identify the types and extent of chemicals of concern in the environment (Remedial Investigation) and provide an evaluation of the alternatives for remediating any identified soil or groundwater problems (Feasibility Study).

Removal or Remedial Action

Includes the cleanup or removal of released hazardous substances from the environment or taking of other actions as may be necessary to prevent, minimize, or mitigate damage which may otherwise result from the release or threatened release of hazardous substances.

Removal Action Workplan

A document subject to approval by DTSC that provides site history, summarizes remedial investigation activities, evaluates remedial alternatives, selects and provides the plan and design criteria for the selected removal action.

Soil Vapor Extraction

A process in which chemical vapors are extracted from the soil by applying a vacuum to wells.