



California Department of Toxic Substances Control

The State's Poor Management of the Exide
Cleanup Project Has Left Californians at
Continued Risk of Lead Poisoning

October 2020

REPORT 2020-107





CALIFORNIA STATE AUDITOR

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October 27, 2020
2020-107

The Governor of California
President pro Tempore of the Senate
Speaker of the Assembly
State Capitol
Sacramento, California 95814

Dear Governor and Legislative Leaders:

As directed by the Joint Legislative Audit Committee, my office conducted an audit of the steps taken by the Department of Toxic Substances Control (DTSC) to identify and remove lead contamination from over 10,000 properties surrounding a former lead battery recycling facility in Vernon, California. Lead contamination can have detrimental effects on the health of individuals who are exposed, and in some cases can be lethal. Despite the importance of removing lead contamination, we found that DTSC's cleanup efforts are behind schedule.

We are particularly concerned that DTSC has not removed contaminated soil from a total of 31 school, childcare facility, and park properties even though it had available options for cleaning those sites. This is troubling because the children who may frequent these locations are at particularly high risk from the negative health effects of lead. Additionally, DTSC is behind schedule in its effort to clean 3,200 of the most contaminated properties. DTSC estimated it could clean these properties by June 2021. However, it has not cleaned properties at its expected pace and recently slowed its cleanup pace further due to a dispute with a contractor. At its current pace, DTSC will not finish cleaning the most contaminated properties until more than one year after the expected completion date. Finally, after DTSC finishes cleaning these 3,200 properties, an estimated 4,600 properties will remain contaminated and DTSC has not established a timeline or strategy to clean those properties.

Furthermore, the cleanup project is likely to cost hundreds of millions of dollars more than the State has provided DTSC to date. The State has provided DTSC about \$250 million to clean the 3,200 most contaminated properties. We estimate that by the time DTSC spends all of this funding, 269 of these properties will still be contaminated. The department's poor cost estimation and cost overruns by one of its contractors have contributed to DTSC spending more than expected to clean the contamination. At current spending rates, we estimate that DTSC will need about \$390 million more than it has been allocated to date to completely clean all 7,800 contaminated properties. Although the State expected it would recover its costs from Exide, in October 2020 a federal court approved a bankruptcy settlement that leaves significant questions about the State's ability to obtain reimbursement for the cleanup.

Respectfully submitted,

ELAINE M. HOWLE, CPA
California State Auditor

Selected Abbreviations Used in This Report

DTSC	California Department of Toxic Substances Control
Exide	Exide Technologies
ISE	Imminent or Substantial Endangerment
ppm	parts per million
TCRA	Time Critical Removal Action

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SUMMARY

Since 2015 the Department of Toxic Substances Control (DTSC) has been working to identify and remove lead contamination from about 10,160 properties surrounding a former lead battery recycling facility that Exide Technologies (Exide) operated in Southern California.¹ Approximately 100,000 people live in the area surrounding the facility and are thus at risk of lead exposure, which can cause significant health problems for vulnerable populations such as children. DTSC's data indicate that a significant majority of the properties—including residences, childcare centers, parks, and schools—had dangerous levels of lead contamination. This audit report concludes the following:

DTSC Is Behind Schedule on Its Cleanup and Has Yet to Address Contaminated Properties That Pose a High Risk to Residents

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In the early stages of its cleanup effort, DTSC identified 50 properties—including childcare centers, schools, and parks—where lead contamination posed a particularly high risk to children who frequently spend time at these locations. Despite the risk these properties present, DTSC has yet to clean 31 of them. In fact, it has cleaned only one of these properties since May 2018. In addition, DTSC has been unable to maintain the cleanup pace it presented in its 2017 plan for cleaning the most contaminated properties. As a result, it is significantly behind schedule and is unlikely to meet its goal to clean the 3,200 most contaminated properties by June 2021—extending the time that residents in the cleanup site are exposed to dangerous levels of lead. Finally, DTSC has not established a timeline or strategy for cleaning an estimated 4,600 remaining properties that also have dangerous levels of contamination. Until DTSC creates a plan for cleaning all lead-contaminated properties, stakeholders and policy makers will have little information about the level of effort and time the cleanup project will require.

The Cleanup Project Is Likely to Cost Hundreds of Millions of Dollars More Than the State Has Provided DTSC to Date

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The State has already provided \$251 million to DTSC to complete the cleanup of the 3,200 most contaminated properties. However, we estimate that DTSC will exhaust this funding before cleaning 269 of these properties. Moreover, based on DTSC's current spending rate, we estimate the total cost of the cleanup project will approach

¹ Our presentation of numbers throughout most of the report is based on *parcels* of land. However, to align our report with the way DTSC describes the cleanup project, we use the term *properties* when describing our findings.

\$650 million. DTSC's estimates of per-property cleanup costs were inaccurate because it failed to account for predictable costs, such as inflation and payment of legally required prevailing wages. Finally, DTSC has paid about \$17 million more than it anticipated to clean 768 properties because it did not establish adequate protections in its agreement with its largest cleanup contractor. In particular, it agreed to a cost structure that requires it to pay for all cost overruns related to labor and materials instead of a fixed-price structure that held the contractor responsible for cost overruns.

Summary of Recommendations

To ensure that it promptly and effectively addresses the risk that lead-contaminated properties pose to children and other individuals, DTSC should do the following:

- Immediately begin cleaning all childcare centers, parks, and schools.
- Immediately deploy sufficient resources to clean the 3,200 most contaminated properties on schedule.
- By no later than April 2021, identify and publicize the date by which it expects to complete its cleanup of all 7,800 contaminated properties.
- To ensure that it has sufficient funding to clean up all lead-contaminated properties, DTSC should identify the full amount of funding it needs to complete the cleanup of these properties. It should submit a request for funding in time for the spring 2021 budget discussions that includes a range of funding options that spans from funding for the full cleanup to funding for only a portion of the remaining contaminated properties.
- To protect against the unsustainably high costs it has incurred thus far in the cleanup project, DTSC should structure any future cleanup contracts so that they at least partially incorporate fixed prices.

Agency Comments

DTSC expressed concern about our conclusions that it is behind schedule to complete the cleanup of the 3,200 most contaminated properties and that it has not developed a cleanup plan for the remaining 4,600 properties. DTSC believes that it has cleaned properties more quickly than comparable cleanup projects and that it could not anticipate certain factors that have slowed its rate of progress. Further, DTSC cited a lack of funding as a reason it has not developed a plan to clean the remaining 4,600 properties. However, DTSC concurred with and agreed to implement all of our recommendations.

Introduction

Background

Since 2015 the Department of Toxic Substances Control (DTSC) has been working to identify lead contamination and, where present, remove it from about 10,160 residential properties, childcare centers, parks, and schools surrounding a former lead battery recycling facility in Southern California. About 100,000 people live in the contaminated area and are therefore at risk of exposure to lead-contaminated soil. Exposure to lead can cause serious health issues, including brain damage, memory loss, reproductive disorders, and other conditions, as the text box indicates. Even small amounts of lead can cause serious health problems, particularly for children, because it can cause developmental delays and seizures. At very high levels, lead exposure can result in death.

DTSC's mission is to protect California's residents and environment from the harmful effects of toxic substances. Its responsibilities include enforcing hazardous waste laws and restoring resources contaminated with toxic substances. To accomplish its responsibilities, it has around 930 staff members who work at 11 offices located throughout the State. When necessary, DTSC uses contractors to assist with cleanup of hazardous wastes.

Exide Technologies' Lead Battery Recycling Facility

In 2000 Exide Technologies (Exide) acquired a 15-acre facility located in Vernon, California. Exide processed used lead-acid batteries and other lead-bearing materials to recover lead and other materials at this facility until 2014, when it ceased operations to address air pollution concerns that the South Coast Air Quality Management District (SCAQMD) had raised. DTSC's permit history records state that the facility accepted about 11 million used lead-acid batteries each year, from which it recovered 100,000 to 120,000 tons of lead.

When it took over the Vernon facility in 2000, Exide assumed the previous owner's interim status hazardous waste permit, which DTSC's predecessor agency had granted in 1981, when the State first began requiring such permits. Part of DTSC's responsibility includes the issuance of operating permits for hazardous waste facilities, such as the Exide facility, and their regular inspection. However, since 2007, actual monitoring of airborne emissions from the facility has been conducted by SCAQMD. Over the next 13 years, Exide submitted at least seven hazardous

Common Effects of Lead Poisoning

In babies

- Premature birth
- Low birth weight
- Slowed growth

In children

- Developmental delays
- Learning difficulties
- Irritability
- Loss of appetite
- Weight loss
- Sluggishness and fatigue
- Abdominal pain
- Vomiting
- Constipation
- Hearing loss
- Seizures

In adults

- High blood pressure
- Joint and muscle pain
- Difficulties with memory or concentration
- Headache
- Abdominal pain
- Mood disorders
- Reproductive disorders

Source: Mayo Clinic.

waste permit application revisions to DTSC. Exide intended these revisions to address repeated deficiencies in its application. In 2015 DTSC notified Exide that it intended to deny Exide's application revision. Exide and DTSC jointly agreed that Exide would withdraw its permit application, permanently cease operations, and close the facility in accordance with a DTSC-approved closure plan.

In December 2016, DTSC approved Exide's closure plan, which described how it would shut down the facility while protecting public health and the environment. That plan includes decontaminating, deconstructing, and disposing of the equipment and structures that the facility used to manage hazardous waste.

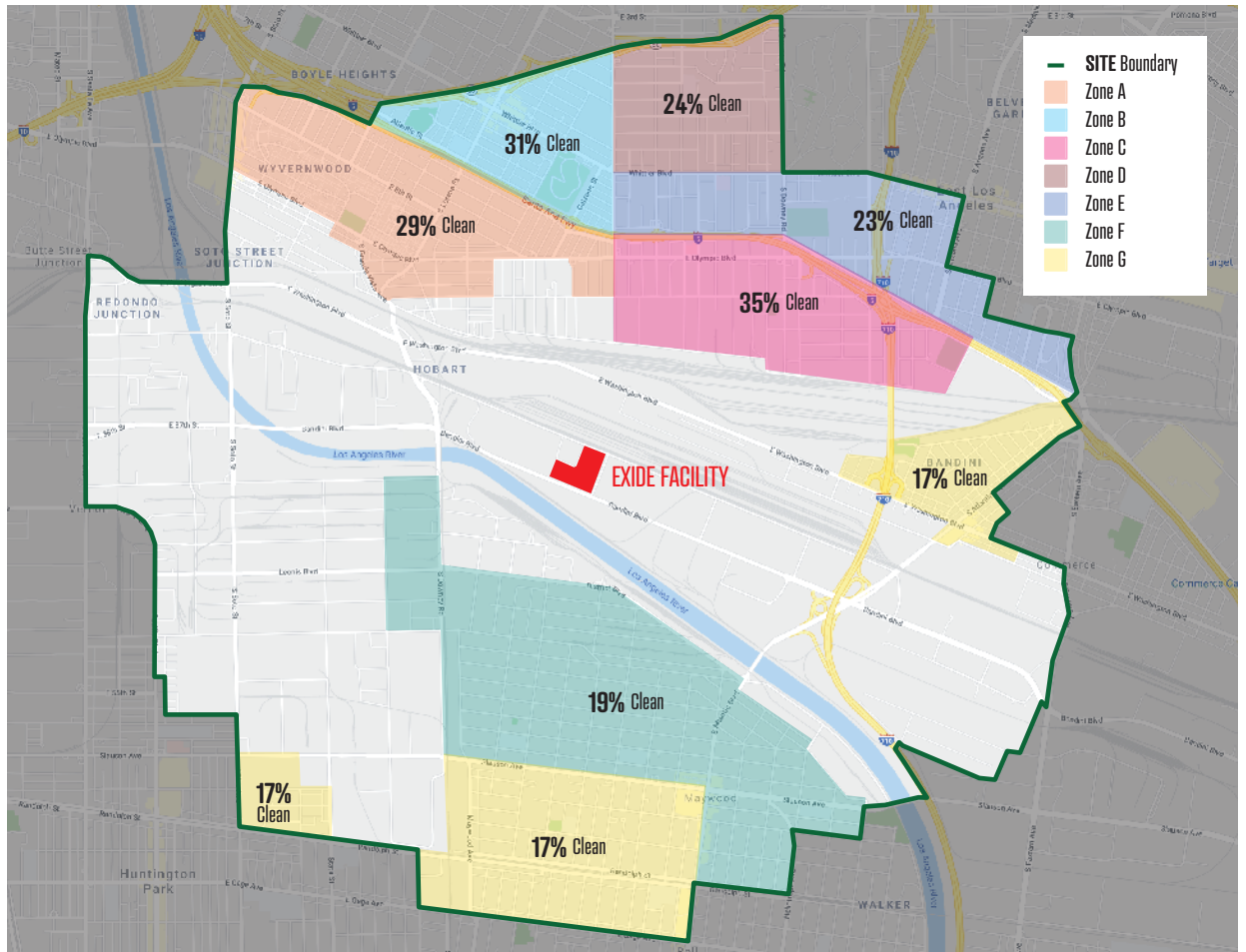
DTSC's Identification of Lead Contamination

State law allows DTSC to take enforcement action against polluters or take other action, such as hazardous substance removal, when it determines that these substances may pose an imminent or substantial endangerment (ISE) to public health, welfare, or the environment. In November 2015, DTSC determined that pollution surrounding the Exide facility constituted an ISE situation. The ISE determination gave DTSC significantly more flexibility to procure cleanup contractors than state law normally allows.

In April 2016, the Legislature approved a \$176.6 million loan from the State's General Fund to DTSC for activities related to the investigation and cleanup of the lead-contaminated properties in the communities surrounding the Exide facility. DTSC determined that an area of about a 1.7-mile radius around the facility was contaminated because of activities from the facility—in this report, we refer to the area as the *cleanup site*.² Although the former Exide facility is located in Vernon, the cleanup site extends into the cities of Los Angeles, Huntington Park, Commerce, Bell, and Maywood, as well as unincorporated Los Angeles County. Figure 1 shows the cleanup site.

² As of August 2020, Exide was disputing that it is responsible for lead contamination in the residential areas near its former facility.

Figure 1
DTSC Has Divided the Cleanup Site Into Seven Zones



Source: DTSC property cleanup records.

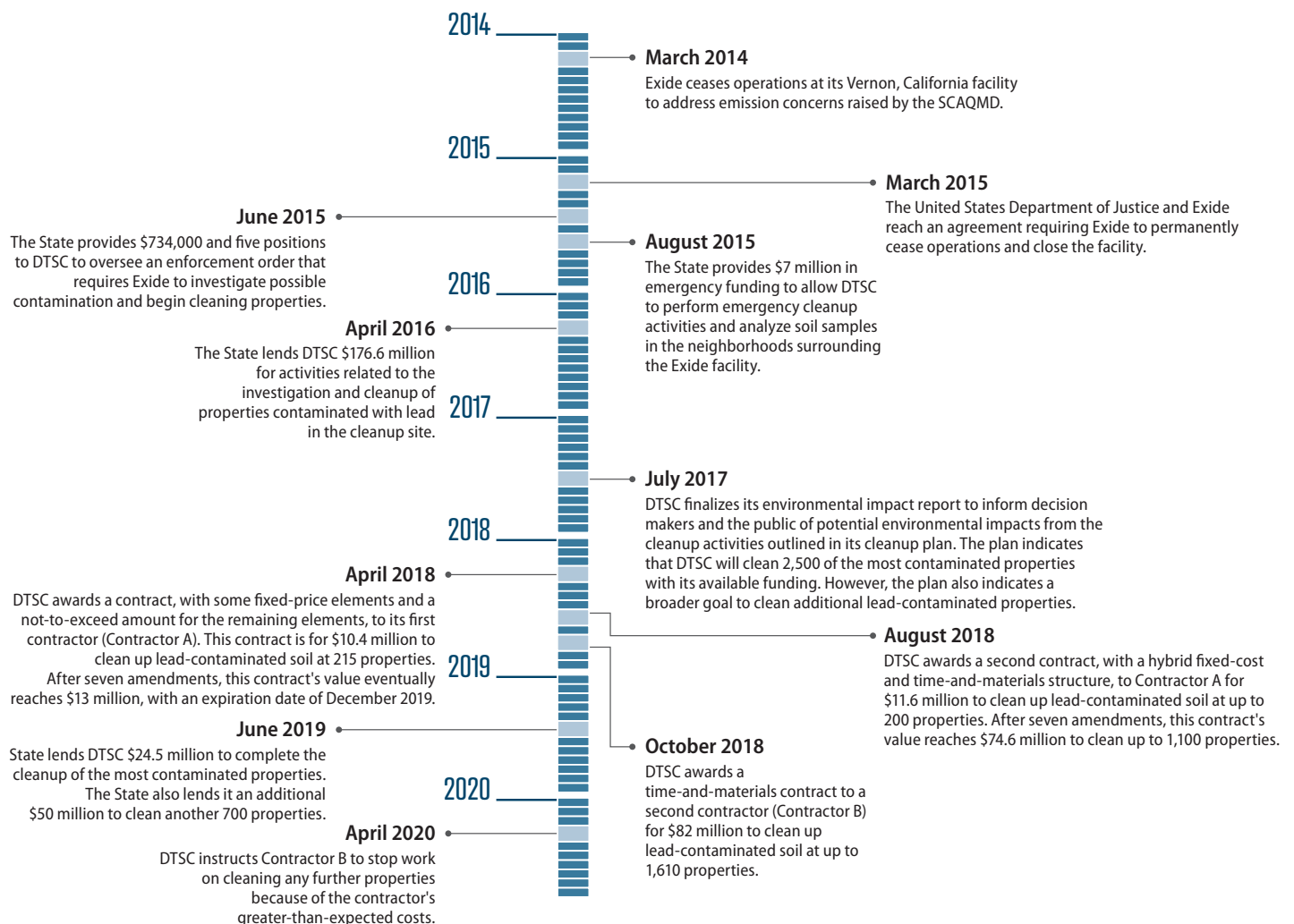
Note: The areas within the cleanup site that are not in the labeled zones are industrial and/or commercial properties. Industrial properties are not part of DTSC's cleanup plan because it had ordered Exide to clean them under a separate effort.

In ISE situations, DTSC may order the responsible party to clean up the contamination or it can do so itself or through a contractor and seek to recover its costs from the responsible party. Here, DTSC chose to clean up the contamination by using contractors because Exide disputed the extent of its responsibility for the contamination, and DTSC determined that the contamination posed a significant threat.

As of June 2020, the State had provided nearly \$260 million to DTSC, mostly in loans from the General Fund, to clean the lead-contaminated properties and conduct related activities at

the cleanup site. The Legislature provided these loans with the expectation that DTSC would successfully recoup the cost of the cleanup from Exide. However, in early 2020 Exide filed for Chapter 11 bankruptcy, and in October 2020 a federal court approved a bankruptcy settlement that leaves significant questions about the State's ability to obtain reimbursement for the cleanup. As part of its preparation for possible cost recovery, DTSC has been storing soil samples that it collects from each property as evidence of contamination. It also will probably need to provide documentation of the actions it has taken to clean properties and the amount its cleanup contractors have charged. Figure 2 outlines key events in the timeline of the Exide cleanup project.

Figure 2
Key Events in the Exide Cleanup Timeline



Source: DTSC's cleanup plan, environmental impact report, contracts, and state appropriations.

DTSC's Cleanup Plan

Although the vast majority of the 10,160 properties in the cleanup site are residential, others—such as schools and childcare centers—are publicly owned. In July 2017, DTSC finalized its removal action plan (cleanup plan) for cleaning the lead-contaminated properties within the cleanup site. According to multiple DTSC staff, this effort was the largest cleanup of its kind in California. The cleanup plan prioritizes properties with the highest levels of lead contamination and the greatest potential health risk to sensitive individuals, which the plan defines as children younger than 7 years of age and pregnant women. The department has sampled more than 8,500 properties and identified more than 7,700 with lead concentrations over 80 parts per million (ppm), which makes them dangerous to sensitive individuals who live in or visit these properties. According to the assistant deputy director of DTSC's Exide division (assistant deputy director), DTSC plans to address the 3,200 of these properties that have lead concentration of 300 ppm or greater, essentially prioritizing the most dangerous among all contaminated properties. Appendix B shows a detailed breakdown of the status of the cleanup effort as of spring 2020, including the number of properties for which property owners have not granted DTSC permission to sample for lead contamination.

The majority of DTSC's cleanup activities to date have been performed by two contractors under three separate contracts. DTSC entered into an agreement with the first contractor (Contractor A) in April 2018 to clean 215 properties, with an amended value of \$13 million. In August 2018, DTSC entered into another agreement with Contractor A, which—after subsequent amendments—includes the cleanup of an additional 1,100 properties for about \$75 million. In October 2018, DTSC hired a second contractor (Contractor B) to clean up to 1,610 properties for \$82 million. DTSC also has additional cleanup-related contracts, including a \$5.4 million contract with a consultant to assist with project management and a \$186,000 contract with an independent auditor to provide an outside review of the department's use of Exide-related funds.

DTSC's process for cleaning up lead-contaminated soil includes multiple steps. First, it must obtain an owner's or tenant's permission to sample a property's soil. A testing crew then takes multiple soil samples from the property to determine whether it is contaminated and, if so, the depth of contamination. If the property is contaminated with lead, a cleaning crew removes the contaminated soil, DTSC stores a sample of the contaminated soil, and the cleaning crew replaces contaminated soil with clean soil and replaces landscaping destroyed by the removal of contaminated soil. DTSC estimates that this process in its entirety takes about a week. Finally, DTSC offers property owners interior cleaning of structures on the property to remove lead-contaminated dust.

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DTSC Is Behind Schedule on Its Cleanup and Has Yet to Address Contaminated Properties That Pose a High Risk to Residents

Key Points

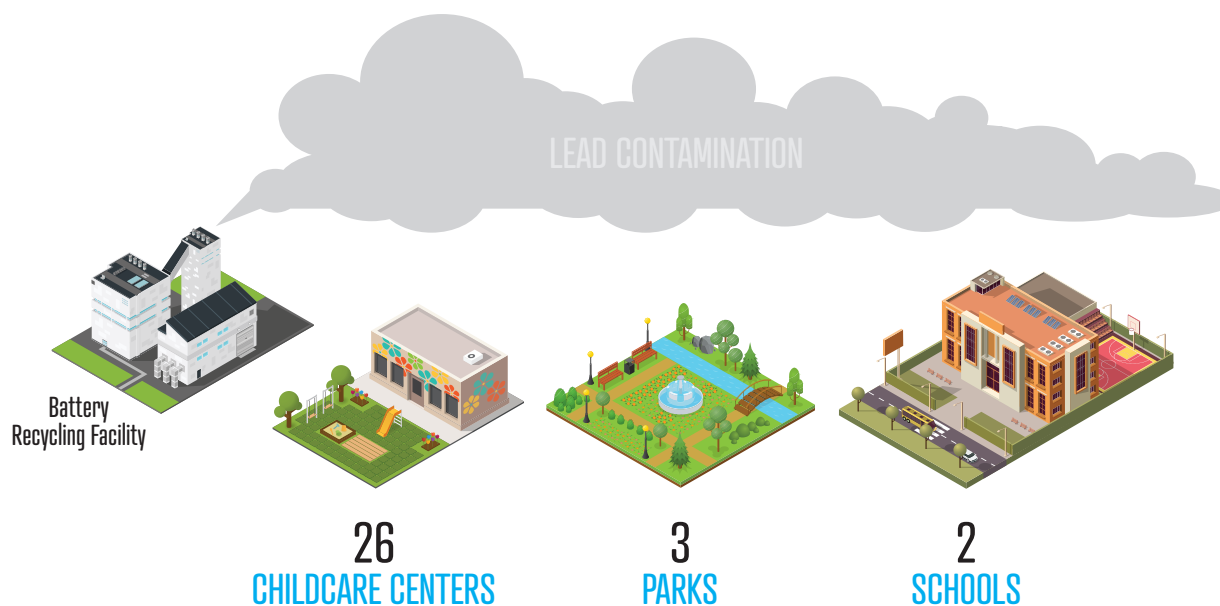
- As of June 2020, DTSC had not cleaned 31 out of 50 lead-contaminated childcare centers, parks, and schools in the cleanup site, even though it identified contamination at these properties as early as 2014. Its failure to use the options available to it to clean these properties quickly has unnecessarily put the children who may visit them at higher risk of negative effects to their mental and physical development from lead poisoning.
- Because of a slower-than-expected cleanup pace, DTSC will likely miss its target date of June 2021 to clean the 3,200 most contaminated properties in the cleanup site.
- DTSC does not have a timeline or planned approach for cleaning the remaining 4,600 contaminated properties. Because it has not planned for the cleanup of these properties, stakeholders and the Legislature lack critical information about the time and funding DTSC will need to complete the cleanup effort.

As a Result of Its Missteps, DTSC Has Not Cleaned Properties That Pose a Significant Threat to Residents

DTSC has not yet cleaned a high percentage of 50 of the 3,200 most contaminated properties where it has identified lead contamination as disproportionately affecting the residents who are at the greatest risk. DTSC's cleanup plan identifies childcare centers, parks, and schools as particularly sensitive-use properties because these are property types where a large number of individuals sensitive to lead poisoning—particularly young children—may be exposed to lead-contaminated soil. However, as Figure 3 shows, DTSC had still not cleaned 31, or 62 percent, of these properties as of June 2020. Further, with the exception of a single childcare center that it cleaned in May 2020, the department has not cleaned any childcare centers, parks, or schools since May 2018. As a result, it has continued to put the children and other at-risk individuals who spend time at these properties at unnecessary risk of the serious consequences of lead poisoning.

Figure 3

Certain Sensitive-Use Properties Remain Contaminated Years After DTSC Learned About Dangerous Levels of Lead



Source: Analysis of DTSC's July 2017 cleanup plan and property cleanup data as of June 30, 2020.

DTSC allowed this delay to occur despite the fact that it learned about the contamination levels on these properties from 2014 through 2017, when it conducted soil sample testing. DTSC's assistant deputy director stated that schedule conflicts have prevented DTSC from cleaning some properties, and other records it shared with us show that some property owners were unsure about whether they wanted to proceed with the cleaning. However, we identified several other factors that explain the department's lack of progress. Most significantly, its program staff did not act to amend existing contracts or engage new contractors to expedite the cleanup of these properties.

Types of Bonds

Performance Bond: A bond that guarantees the contractor's performance of required work.

Payment Bond: A bond that covers the costs of labor and/or materials in the event that the contractor fails to make those payments.

Source: *State Contracting Manual*.

The assistant deputy director stated that because some of these properties are publicly owned, state law requires DTSC to use contractors that have 100 percent payment and performance bonding, which neither of DTSC's existing contractors has. The text box describes these types of bonds. State law requires every contractor that directly contracts with a state agency for a public works contract to file a payment bond for 100 percent of the contract price, if that price exceeds \$25,000. Under state law, the contracting state agency must require

the contractor to provide the bond and must determine whether that bond is legally and financially sufficient. If the state agency fails in these duties and the contractor does not pay its subcontractors or suppliers, the subcontractors or suppliers may sue the state agency. Because DTSC's existing contractors do not have this level of bonding, it could not use its existing contracts to clean childcare centers, parks, and schools in the cleanup site. However, despite the limits of its existing agreements, it has not amended those contracts or found new contractors to perform this essential work.

When we asked why DTSC did not address the risk that these publicly owned properties pose to children by promptly seeking another contractor who could perform the work, the assistant deputy director stated that the department had intended to use a new contractor to clean the properties. According to the assistant deputy director, in May 2018, DTSC created a list of publicly owned properties by grouping all schools, parks, childcare centers, and properties with five or more residential units. However, the assistant deputy director stated that DTSC never secured the necessary contract because its resources for contract solicitation and procurement were limited. Further, she indicated DTSC was focusing on other priorities at the time, including ramping up its residential cleanup efforts at the cleanup site and renegotiating an existing cleanup agreement. However, by failing to prioritize contracting for these properties to be cleaned, DTSC placed children and other at-risk individuals in unnecessary danger of continued exposure to lead contamination.

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Moreover, DTSC misidentified the ownership of some of these properties, thus unnecessarily delaying their cleanup. In December 2019, DTSC staff identified that 24 childcare centers on its May 2018 list were actually private, residential childcare centers. Given its new understanding of their ownership status, DTSC assigned these properties to one of its existing cleanup contractors in December 2019. Nonetheless, its error in identifying property ownership meant that for over a year and a half DTSC incorrectly believed these 24 properties could not be cleaned by its existing contractors.

Finally, DTSC has not used all available options to ensure that it quickly cleans childcare centers, parks, and schools. Before it substantively stopped cleanup of these types of properties in May 2018, DTSC cleaned several under a process called a time critical removal action (TCRA). Under a TCRA, DTSC can take action to reduce or prevent an ISE to the public health or welfare or to the environment resulting from the release or threatened release of a hazardous substance. When DTSC makes a determination about implementing a TCRA, it considers certain factors established under federal regulation, such as the actual or potential exposure of a hazardous substance to nearby people. If it decides a TCRA is warranted, it can expedite the process to clean properties.

**DTSC has not used all available options
to ensure that it quickly cleans childcare
centers, parks, and schools.**

Early in the cleanup effort, DTSC cleaned three schools and 11 childcare centers using the TCRA process. When we asked DTSC's assistant deputy director why it did not use the TCRA process to clean all contaminated childcare centers, parks, and schools, she indicated that the average cost of cleaning these initial properties had been above \$95,000 per property, which would be greater than the cost of a property that was cleaned without using a TCRA. She also stated that once DTSC approved a cleanup plan in July 2017, it decided that it was prudent to clean the remaining properties in accordance with its plan and that it would use a TCRA only under emergency circumstances because of the higher cost of a TCRA. However, nearly a year after DTSC's approved cleanup plan, DTSC has only used a TCRA to clean 12 additional properties from March through May 2018 after it failed to receive any bids to perform the cleanup of these properties. Contractor A cleaned the 12 properties for \$53,000 per property—44 percent less than the earlier cleanup. Using a TCRA is thus a viable option for DTSC to clean properties so that it can expeditiously address the ongoing risks lead contamination poses.

DTSC believes it can complete the cleanup of the remaining childcare centers, parks, and schools by June 30, 2021—more than four years after it identified the last of these properties as contaminated in April 2017. After completing preliminary work, such as creating property design plans and conducting confirmation soil sampling, DTSC anticipates soliciting a cleanup contractor in late 2020. However, given the significant risks these properties pose,

we would expect DTSC to use every option available—including using the TCRA process—to prioritize and complete the cleanup of these schools, parks, and childcare centers as quickly and safely as possible. By delaying the cleanup of these properties, even for a short time period, DTSC may be unnecessarily continuing to endanger children and at-risk individuals.

DTSC Is Likely to Miss Its Target Date to Clean the 3,200 Most Contaminated Properties

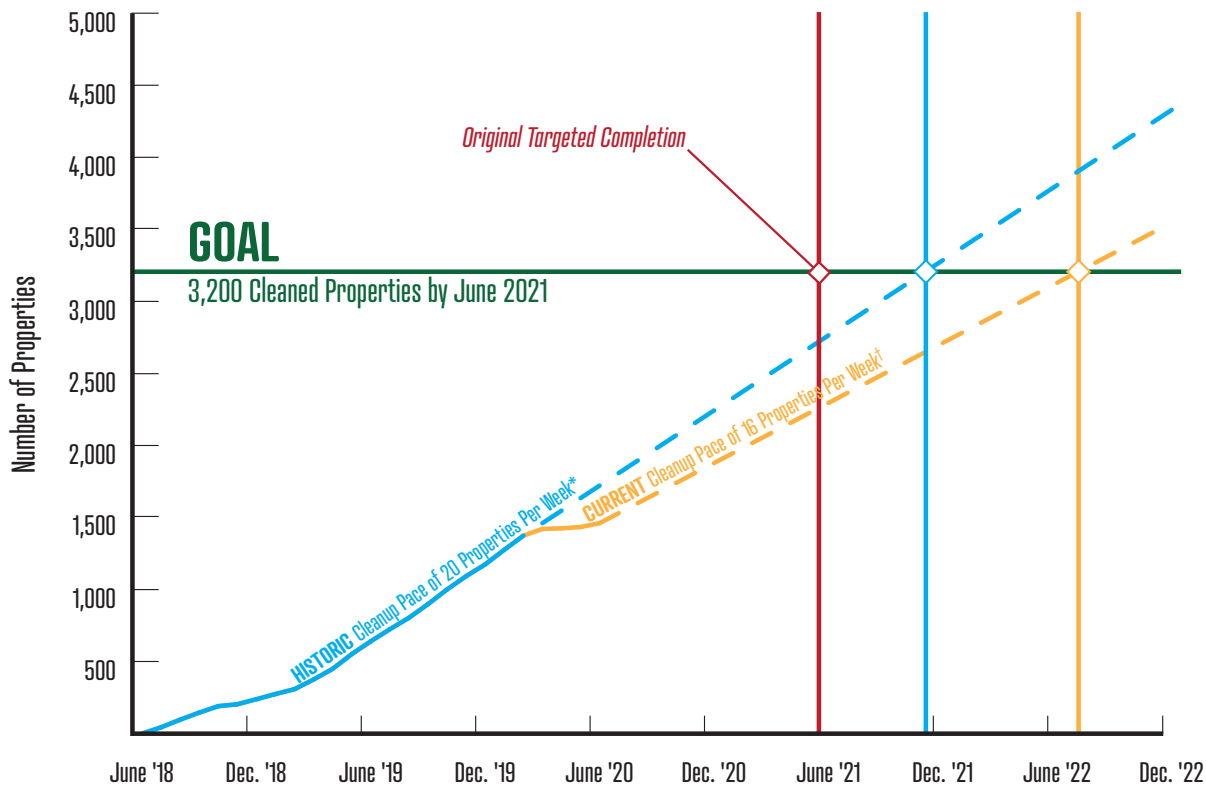
DTSC established a target of June 30, 2021, to clean the 3,200 most contaminated properties it identified by soil sampling at the cleanup site, but it will not meet this target at its current cleanup pace. As we describe in the Introduction, DTSC’s cleanup plan prioritizes cleaning properties that have the highest levels of lead and pose the greatest health risk to sensitive individuals. The cleanup plan, finalized in July 2017, indicates that after an initial two-month period during which it would clean 10 to 15 properties per week, DTSC expected its average pace would increase to 25 to 35 properties per week. However, its average pace from March 2019 through February 2020 was only 20 properties per week. At this pace, we estimate that it would take DTSC until December 2021 to clean up all of the 3,200 most contaminated properties, causing it to miss its target date by six months.

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**DTSC’s average cleanup pace from
March 2019 through February 2020
was only 20 properties per week.**

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Moreover, DTSC is highly unlikely to maintain even its 20 properties-per-week pace because of two significant and recent developments. The first is the COVID-19 pandemic, which caused DTSC to temporarily stop its contractors’ work at the cleanup site in spring 2020 for about six weeks. Contractor A resumed work in May 2020. The second is DTSC’s efforts to limit cost overruns. In mid-April 2020, DTSC ordered Contractor B to cease all new cleanup efforts in an attempt to control costs—a decision we describe in detail later in this report. Without two contractors working simultaneously, DTSC has been unable to maintain the pace of 20 properties per week. Instead, as of mid-August 2020 it has averaged only 16 properties per week, 20 percent slower than its prior pace. Figure 4 shows DTSC’s actual cleanup pace compared to its target.

Figure 4**DTSC Will Likely Miss Its Targeted Completion Date for Cleaning 3,200 Highly Contaminated Properties**

Source: DTSC's cleanup plan and property cleanup records.

* Pace is based on actual pace and a 12-month period through February 2020 projected forward.

† Pace is based on Contractor A's current average pace projected forward.

In addition to the pandemic and its cease-work order, DTSC's assistant deputy director identified several factors that have contributed to the cleanup's slow pace. She explained that if property owners do not keep their appointments, DTSC's contractors must delay the cleanup of those properties. In addition, if property owners do not remove personal items from the excavation area, such as nonoperating vehicles or debris, the contractor may need to move the items or reschedule the cleanup. The assistant deputy director stated that when DTSC must reschedule a cleanup appointment, it must coordinate with other property owners to fill the empty appointment and reassign contractor operations to other properties, steps that slow the pace of cleanup. Finally, she also identified that weather and difficult terrain have slowed down the cleanup pace because they require contractors to adjust their schedules or make changes to continue cleaning. For example, rain may necessitate that contractors stop

the cleanup activities or excavate in small sections that can be easily covered. In addition, if property is not accessible to equipment because of structures or trees, crews may need to manually remove contaminated soil using shovels, which can be time-intensive.

However, all of these explained reasons for delays are issues that DTSC should have been able to anticipate and factor into its cleanup pace estimates. For example, DTSC should have been aware that certain times of year have greater rainfall, and thus it should have accounted for weather when determining its target cleanup pace. Moreover, problems such as uncooperative property owners and difficult terrain would likely affect similar cleanup efforts and should have been possible to anticipate. The cleanup plan states that DTSC calculated its expected pace based on its prior experiences cleaning properties within the cleanup site and its consultations with the U.S. Environmental Protection Agency (EPA) about similar projects in other states. However, when we asked the assistant deputy director for the data from prior DTSC cleanup efforts, she stated that her department did not have any such data and that the prior cleanup efforts had progressed at a slower pace than 25 to 35 properties per week. Further, DTSC shared multiple examples of the correspondence it had with the EPA. The correspondence related to cleanup pace was limited to a handbook on lead contamination at residential sites that contained only a single reference to the pace at which a cleanup effort could potentially progress. Specifically, the handbook indicates a pace of 800 properties per year—an average of 15 properties per week—is possible. That pace is far below DTSC’s published estimate of how fast it could clean properties. DTSC’s lack of evidence for its estimated cleanup pace leads us to conclude that it had little basis for publicizing that it could clean 25 to 35 properties per week.

DTSC’s lack of evidence for its estimated cleanup pace leads us to conclude that it had little basis for publicizing that it could clean 25 to 35 properties per week.

In addition to its failure to anticipate the predictable factors that would slow the progress of its cleanup, DTSC also did not enforce its requirement that contractors maintain a minimum cleanup pace. DTSC publicly estimated that it could achieve a pace of 25 to 35 properties per week before contracting with either of its two major cleanup contractors. Those cleanup contracts require each contractor to employ a project manager whose responsibilities include ensuring the use of sufficient staff and cleanup crews to achieve the expected

pace. However, DTSC has not enforced this requirement. According to the assistant deputy director, DTSC does not want to dictate the time necessary for a contractor to clean a property because it considers the contractor the field expert that is best situated to make such determinations. However, without enforcing the required performance standard, DTSC's options for ensuring that the overall cleanup project remains on schedule are limited. When it does not use all available options to ensure that cleanup of lead contamination progresses as quickly as possible, DTSC places all residents in the cleanup site at risk of the negative effects of prolonged exposure to lead. As we describe in the Introduction, these effects can include serious and debilitating health conditions.

Unless it significantly increases its cleanup pace, DTSC will leave many properties contaminated for a longer period of time than it originally projected. The continued presence of high concentrations of lead threatens the health of these properties' residents and visitors. To increase its cleanup pace, DTSC will need to make two key changes to its approach to the cleanup effort. Most importantly, it will need to ensure that it has sufficient contracted staff working on the project. Before DTSC ordered Contractor B to cease work, the contractor had cleaned an average of 14 properties per week. DTSC will need to find an alternative way to clean these properties, such as hiring another contractor or ordering Contractor A to use additional crews. It also needs to hold Contractor A and any future contractors to an expected pace of properties cleaned per week.

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.....

The assistant deputy director acknowledged that DTSC has the authority to monitor whether contractors meet the expected cleanup pace. However, she indicated that the pace may be affected by factors unrelated to contractor performance, such as DTSC's responsibility to ensure that properties are scheduled and prepared for excavation and a lack of cooperation from property owners. She also asserted that as the list of contaminated properties becomes shorter, DTSC will find it harder to maintain a pool of available properties to clean. These factors are poor reasons for failing to enforce a performance standard. For example, DTSC could ensure that its contracts clearly explain what factors are beyond a contractor's control with regard to the pace of cleanup. Further, our

analysis—described in more detail below—shows that it is likely to be many years before the list of contaminated properties would grow so short as to make it difficult to keep a contractor busy. By monitoring its contractors, DTSC can better ensure that they provide sufficient staff and crews to clean contaminated properties in a timely manner.

Finally, after we informed DTSC of our conclusion that it would be unable to meet its targeted deadline for cleaning the most contaminated properties, DTSC provided us with a comparison it made between this cleanup effort and cleanup efforts in other states that it considered most comparable. DTSC asserted that this comparison showed that its cleanup effort has progressed at fast rates when compared to those other projects. DTSC acknowledged that it only very recently compiled this comparison to other projects and that it was not considered when it originally developed its pace estimate of at least 25 properties cleaned per week. However, this comparison does not provide an explanation for why DTSC has not achieved its anticipated cleanup pace. When considering the largest comparable project in DTSC's analysis, the comparison shows that DTSC has cleaned more total properties than the other cleanup project when compared at similar points in their project lifetime. The comparison also shows that—over the course of a longer period of time—the other large cleanup project cleaned more properties on average per month than DTSC's cleanup project has achieved over its shorter lifetime.

DTSC Has No Timeline or Planned Approach for Cleaning an Additional 4,600 Contaminated Properties

DTSC does not yet have a timeline or planned approach to clean all of the properties contaminated with lead. Its cleanup plan states that DTSC will identify the soil lead concentration levels at all properties in the cleanup site and then clean each that has a soil lead concentration level above 80 ppm. A cleanup based on this level would protect the health of children and other at-risk individuals. However, DTSC's current cleanup efforts—which we describe in the previous two sections—have been focused only on 3,200 of the most contaminated properties, which generally have either an average lead concentration of 300 ppm or greater based on a representative soil sampling or a lead concentration of 1,000 ppm or greater based on a single sample. We estimate an additional 4,600 properties have a lead concentration of 80 ppm to 299 ppm that will require cleanup.³ These properties will remain contaminated at the end of DTSC's initial effort.

³ DTSC has identified an additional 4,199 properties with lead concentrations of 80 ppm to 299 ppm. However, it has not yet sampled 1,604 properties in the cleanup site. DTSC has permission to sample 454 of these properties, while the owners of the remaining 1,150 properties have not provided access. In the past, DTSC has determined that about 10 percent of the properties it tests do not require cleanup. Therefore, we estimate that 410 of 454 properties will require cleanup, for a total of about 4,600 properties. We did not include an estimate for the remaining 1,150 properties because it is unknown whether the property owners will ever provide access to sample their soil to determine whether it is contaminated.

According to the assistant deputy director, DTSC has not developed a financial plan or a timeline for cleaning the remaining 4,600 properties. Its failure to complete these tasks has reduced the transparency of the cleanup effort. Without such plans, the Legislature and the public lack the information necessary to easily understand the full scope of the cleanup effort. In fact, we found only one instance when DTSC publicly indicated that more than 7,000 properties have a soil lead concentration level above 80 ppm—a legislative committee hearing in 2018. Other than that acknowledgement, DTSC has focused its public statements on the initial 3,200 properties that it prioritized for cleanup. By concentrating its focus on these properties only, DTSC has restricted the discussion about the speed of its cleanup efforts to a subset of the entire cleanup site. In reality, full remediation of the cleanup site is likely to extend for many years beyond the period DTSC has emphasized.

Our calculations show that if DTSC maintains its current pace of 16 properties per week, it will not complete its cleanup of the 3,200 properties in its initial cleaning effort until August 2022. At that same pace, it will take until February 2028 to clean the additional 4,600 contaminated properties. We are concerned that if DTSC does not take action now to increase the pace of its cleanup efforts and to plan for cleaning all contaminated properties, lead poisoning will continue to pose a danger to children and other at-risk individuals in the cleanup site for many years to come.

Recommendations

To ensure that it minimizes the exposure of children and other at-risk individuals to lead contamination, DTSC should immediately solicit a contractor to clean the 31 remaining childcare centers, parks, and schools. It should use the TCRA process to expedite this cleanup if necessary.

To ensure its ability to clean as many lead-contaminated properties as possible in a timely manner, DTSC should immediately begin soliciting an additional contractor to clean properties within the cleanup site. It should include performance standards for the pace of cleanup in its existing and future cleanup contracts.

To ensure that the public and policy makers have the information they need to make informed decisions, DTSC should, by no later than April 2021, identify and publicize a date by which it expects to complete cleanup for all properties that meet or exceed the standard for lead contamination of 80 ppm identified in DTSC's cleanup plan. It should post this information on its website and, at least every six months, publish an update that indicates whether it is on track to meet that expected completion date based on its rate of progress.

The Cleanup Project Is Likely to Cost Hundreds of Millions of Dollars More Than the State Has Provided DTSC to Date

Key Points

- Without additional funding, DTSC will be unable to clean about 8 percent—269 out of 3,200—of the properties it estimated it could clean with the existing \$260 million in funding the Legislature has provided for the cleanup efforts. At current spending rates, we estimate DTSC will need to spend \$650 million to completely clean all of the 7,800 contaminated properties.
- DTSC used outdated and inaccurate data when initially estimating its cleanup costs. Because of the flaws in its approach to creating this estimate, the Legislature and public have not received from DTSC accurate information about the likely cost of the project.
- DTSC's costs to clean properties have been higher than it expected in part because it did not establish adequate protections when it entered into its largest cleanup contract. As a result, it paid \$17 million more than it anticipated to clean the first 768 properties under this contract.

DTSC Will Likely Need an Additional \$390 Million to Complete the Cleanup Project

The funding that DTSC has received to date from the State will not allow it to clean as many properties as it projected. In August 2015, the State provided \$7 million to DTSC to analyze soil samples and perform emergency cleanup activities. In July 2017, DTSC estimated it could clean 2,500 of the most contaminated properties using the funding available to it at the time, which consisted of \$176.6 million the Legislature lent it from the General Fund. Since then, at DTSC's request, the Legislature provided an additional \$24.5 million to clean these same 2,500 properties because of greater-than-anticipated costs. Further, in 2019 the State lent DTSC \$50 million to clean an additional 700 properties. These allocations and estimates bring the total amount of funding the State has provided to DTSC to about \$260 million, and the total number of properties that DTSC has estimated it can clean to 3,200. Nonetheless, our analysis indicates DTSC will lack the funding to clean 269 of the properties it planned to clean, as Figure 5 shows.

Figure 5**DTSC Will Not Have Enough Funding to Clean 269 Properties It Planned to Clean**

DTSC Estimated It Could Clean 3,200 Properties with about \$251,000,000 . . .



But **269** of these properties will remain
contaminated when DTSC exhausts this funding.

Source: Analysis of DTSC cleanup plan, budget change proposals, and property cleanup data.

We project that DTSC will require an additional \$21 million to finish cleaning the 3,200 properties it estimated it could clean. DTSC's assistant deputy director agrees that DTSC will lack the funding necessary to clean all these properties. In fact, the calculations she shared with us suggest that it will require even more additional funding than our estimate of \$21 million. However, she stated that she based her method for determining how many properties DTSC will be able to clean with existing funding on information that is subject to change.

The additional \$21 million to complete the cleaning of the 3,200 properties is small compared to the cost to clean the full number of properties that remain contaminated. Using DTSC's actual costs to date, we calculated that total cleaning costs will be \$630 million, as Figure 6 shows.⁴ Moreover, the soil sampling costs brings the total project cost to almost \$650 million. As we discuss previously, the Legislature has provided \$260 million to DTSC for cleaning the lead-contaminated properties and performing related activities. As of May 2020, DTSC had spent \$139 million of this funding on cleaning and other related activities, such as sampling soil for lead contamination and operating a statutorily mandated jobs program

⁴ In this report, the total number of properties we discuss and the related cost calculations do not include two types of properties: parkways—narrow strips of land typically found between sidewalks and streets—and industrial facilities. As of June 2020, DTSC did not have sufficient information to enable us to calculate cost estimates for these types of properties.

to help local residents gain employment assisting with the lead cleanup, leaving DTSC with \$121 million in remaining funding. Pending any action by a court that requires Exide to pay for cleanup costs, we estimate that the State will need to provide approximately an additional \$390 million to DTSC to complete the cleanup project.

Figure 6
DTSC Cleaning the Entire Cleanup Site Will Cost About \$630 Million



Source: Analysis of DTSC's financial reports and property cleanup data.

* Cost figures include DTSC's costs to clean properties along with its administrative costs, operating a statutorily mandated jobs program, and cost recovery efforts. It does not include soil sampling costs, which will total \$18 million and bring total project cost, to almost \$650 million.

DTSC Based Its Cleanup Cost Estimates on Outdated and Inaccurate Data

In 2016 DTSC believed that each lead-contaminated property would cost \$50,000 to clean. However, it significantly underestimated its actual cleanup costs. That same year, the State lent DTSC \$176.6 million for activities related to the cleanup, including the cleaning of lead-contaminated properties. By 2018 DTSC's per-property estimate had risen to \$60,000 to \$80,000, depending on the property type. As of June 2020, DTSC's actual average per-property cost was almost \$64,000.

In 2016 DTSC believed that each lead-contaminated property would cost \$50,000 to clean, but it significantly underestimated its actual cleanup costs.

DTSC's initial method for estimating the project's likely costs was flawed and shortsighted. It based its estimate on fiscal year 2015–16 contractor costs, including cleanup work Exide paid for under a 2014 legal agreement between DTSC and Exide in which Exide agreed to clean 39 properties. However, although DTSC is the State's toxic cleanup oversight entity, it did not verify that its own costs would be similar to Exide's. Moreover, it did not account for predictable costs it would incur, such as payment of prevailing wages to contracted laborers, inflation, and the need to store soil samples so that the State could effectively recover its costs from Exide.

According to DTSC's deputy director for its Site Mitigation and Restoration Program, no one at the department knew how long the project would take, and it gave its best cost estimate available at the time. However, we expect that as the State's lead agency for toxic cleanup activities, DTSC would have the expertise to know the cost of these activities and that its cleanup cost estimate would take these activities into consideration. DTSC's failure to do so is a significant lapse in judgment. Because it failed to accurately estimate per-property costs in 2016, it had to ask for additional funding in 2019, which the State provided. The table shows the factors that DTSC used to explain why it needed additional funding in 2019 and our assessment as to whether it could have reasonably anticipated them when developing its original estimated cost.

Table**DTSC Did Not Include Foreseeable Key Factors in Its Initial Per-Property Cost Estimate**

FACTORS DTSC USED IN 2019 TO JUSTIFY ADDITIONAL FUNDING	FORESEEABLE IN 2016?
1. Prevailing wages under the project labor agreement (PLA), a collective bargaining agreement with the Los Angeles/Orange Counties Building and Construction Trades Council. The PLA increased wage rates for project work.	YES. DTSC's cleanup contracts are subject to certain statutory provisions that require paying prevailing wages.
2. Inflation.	YES. DTSC knew the project would last for multiple years.
3. Change in anticipated contract type, from fixed-price to time-and-materials.	No. DTSC was anticipating a fixed-price contract. After an extended solicitation process, it agreed to an \$82 million time-and-materials contract. Fixed-price contracts pay vendors a specified amount for work performed, whereas vendors charge for actual labor and materials used with time-and-materials contracts.
4. Performance and payment bonds.	YES. DTSC should have been aware that payment bonds were required by law for certain public works contracts.
5. Soil sample storage costs	YES. DTSC knew that the State would likely be pursuing cost recovery and should have known that retaining evidence of contamination would be integral to that effort.
6. Project manager	YES, given the size and scope of the project.
7. Financial auditor	YES, given the size and scope of the project.

Source: Analysis of DTSC's 2019 budget change proposal (approved).

Because it did not independently verify whether its cleanup costs were likely to be similar to Exide's, DTSC inaccurately estimated both the cost it would incur to clean each property and the overall cost of the cleanup. As we indicate previously, DTSC is certain to need additional money to finish the cleanup project. Further, in light of the State's recent budgetary constraints associated with the COVID-19 pandemic, it will be important for DTSC to provide decision makers a range of options for funding additional cleanup activities. Providing accurate estimates of its remaining costs is critical to informing the Legislature's decision on whether to approve this additional funding. If DTSC currently lacks the necessary expertise, it should contract for assistance in making accurate and complete cost estimates.

DTSC Did Not Ensure That Its Largest Cleanup Contract Included Adequate Protections Against Cost Overruns

As we previously explain, DTSC's costs to clean properties have been higher than it expected. This increase in costs is partially attributable to the structure of DTSC's largest cleanup contract, which is the project's only active cleanup contract that is over budget. In October 2018, DTSC entered into an \$82 million agreement with Contractor B to clean up to 1,610 residential properties for an average expected per-property cost of about

\$51,000. However, by April 2020—over a year after it began work—Contractor B's per-property costs averaged about \$73,000, more than 40 percent higher than it originally estimated. DTSC projects the per-property cost to increase to \$81,000 because Contractor B's billing for the properties has not yet been finalized. In contrast, Contractor A's per-property costs have averaged about \$53,000. As a result of Contractor B's high costs, DTSC paid \$17 million more than it anticipated to clean the first 768 properties under this contract.

We find it troubling that DTSC awarded this large cleanup contract to Contractor B given that Contractor B had already shown it could not clean properties within expected costs. In 2015 DTSC entered into an agreement with Contractor B for work related to the Exide cleanup that, after two amendments, totaled \$5 million to clean 100 properties, for an average expected per-property cost of \$50,000. However, Contractor B ultimately cleaned only 76 properties for the \$5 million, with an average per-property cost of \$66,000—a 32 percent increase over what DTSC had expected. Nonetheless, three years later, DTSC awarded Contractor B an \$82 million contract for an estimated per-property cost that was essentially the same as in its previous contract.

According to the assistant deputy director, she did not think Contractor B's bid to clean properties at an average of \$51,000 per property was achievable, but DTSC awarded the contract because Contractor B submitted the lowest bid for the job. She also stated that because Contractor B had already done some cleanup work and knew more about the project than the other bidders, DTSC concluded its bid was likely to be more informed. However, under its ISE authority, DTSC was not bound to offer the contract to the lowest responsible bidder; in fact, the State does not require any agencies to do so in all procurement situations. If DTSC had used other criteria for its selection, such as selecting the vendor offering the best value rather than the lowest price, it would have provided itself greater flexibility in choosing a contractor.

Types of Contracts

- **Fixed-price contract:** Provides a total price for all work to be performed under a contract. This price is not subject to adjustment based on a contractor's cost to perform the work.
- **Time-and-materials contract:** Provides for actual labor hours at specified fixed hourly rates plus actual cost for materials.

Source: Federal Acquisition Regulations.

Once DTSC decided to use Contractor B for a second contract, an alternate contract cost structure could have helped the department control costs. The agreement DTSC entered into allows Contractor B to charge the department for the full costs of its hourly labor and the materials it uses to clean properties. This structure—called a time-and-materials contract—requires an agency to pay for any greater-than-expected resources a contractor uses, as the text box shows. Best practices for managing public contracts indicate that a fixed-price contract—in which an agency pays a contractor a specified amount for work

performed—is preferable to a time-and-materials contract, which an agency should use only when no other contract type is suitable. Under a fixed-price contract, a contractor is responsible for paying greater-than-anticipated costs, which would have protected DTSC against Contractor B's cost overruns.

DTSC's time-and-materials agreement allowed Contractor B to use techniques to complete its tasks that were not cost-effective. According to the assistant deputy director, one example of an unnecessary but allowable cost is the manner in which Contractor B stored excavated soil before hauling it from a work site. Contractor B stored the excavated soil in a container that had to be moved around a property several times by a forklift operator—who incurred labor wages each time—rather than placing a container on the street for the duration of the cleanup. According to the assistant deputy director, DTSC's Contractor A uses the latter approach, but DTSC's contract did not prohibit Contractor B's more labor-intensive and costly method. She asserted that Contractor B's approach is an acceptable industry technique for cleaning properties even though it adds to the labor cost of a property's cleanup.

DTSC realized within a few months that Contractor B's costs were problematic and took several steps to try to control its costs.

A fixed-price contract would have encouraged Contractor B to take steps to control the cost of its cleanup activities. DTSC realized within a few months that Contractor B's costs were problematic and took several steps to try to control its costs. According to the assistant deputy director, DTSC anticipated higher-than-average costs in Contractor B's first few months on the job because of start-up costs. However, these costs did not flatten out as DTSC expected. In April 2019, DTSC first raised the higher-than-expected costs as a problem with Contractor B, and over the next six months, DTSC repeatedly asked Contractor B to reduce its costs. Further, in March 2019, DTSC hired a consultant for \$5.4 million to help control Contractor B's costs by, among other tasks, providing technical assistance in reviewing its invoices and assisting the DTSC field oversight staff with overseeing its work on-site. Finally, in July 2019, DTSC attempted to renegotiate with Contractor B the contract's time-and-materials cost structure. However, following its efforts to introduce fixed price elements, DTSC abandoned its negotiation effort in February 2020. In April 2020, DTSC instructed Contractor B to cease cleanup work and focus only on completing administrative tasks for the properties it had already cleaned.

DTSC explained that the time-and-materials agreement was the best possible contract agreement it could sign when it needed a contractor to clean properties. Before entering into an agreement with Contractor B, the department attempted to negotiate with potential vendors for a price structure that would have included more fixed-price elements. However, these negotiations failed. According to an attorney for DTSC, potential contractors were hesitant to accept a fixed-price structure without several conditions that—in DTSC’s estimation—effectively undermined the fixed-price elements of the proposed contracts. For example, one vendor told DTSC that it would not submit a bid because of DTSC’s requirement for a maximum total price. In light of these failed negotiations, DTSC’s solicitation for the agreement it obtained with Contractor B did not propose a fixed-price agreement. Rather, the cost sheet that DTSC asked bidders to complete indicates that it was seeking a contract that was primarily based on a time-and-materials cost structure.

If DTSC was unable to enter into a fully fixed-price contract, other alternatives were available to it. Specifically, two months before it executed the time-and-materials agreement with Contractor B, the department entered into a smaller contract with Contractor A that includes a mix of fixed and unit prices. If vendors were unwilling to enter into a fixed-price agreement, DTSC could have considered a hybrid structure that included fixed costs for some elements—such as the administrative documentation steps required to finalize a property as cleaned—and time-and-materials costs for other elements. The assistant deputy director agreed that it would make sense to use such a hybrid contract structure. Alternatively, DTSC could have sought a smaller agreement to clean fewer properties. Doing so may have limited the risk that potential contractors perceived in entering into a cleanup agreement with so many unknowns.

Because its agreement with Contractor B did not include adequate cost protections, DTSC has spent more than it expected to clean fewer properties than it had planned. As a result, DTSC now has less funding to secure another contractor to continue the cleanup. If DTSC does solicit for a new contract, it will be essential for it to negotiate an agreement that includes strong controls on per-property cleaning costs.

Recommendations

To ensure that it has sufficient funding to clean up all lead-contaminated properties in the cleanup site, DTSC should do the following:

- Identify the full amount of funding it needs to complete the cleanup of the 3,200 most contaminated properties and the remaining 4,600 contaminated properties. It should submit a request for funding in time for spring 2021 budget discussions that includes a range of funding options that spans from funding for the full cleanup to funding for only a portion of the remaining contaminated properties.
- Immediately revise its cost estimation methods to encompass the factors that it now knows will affect its overall costs. If needed, it should contract for expertise in determining accurate and complete estimates of the remaining cleanup cost.

To protect against the unsustainably high costs it has incurred thus far in the cleanup project, DTSC should structure its future cleanup contracts to at least partially incorporate fixed prices.

We conducted this performance audit in accordance with generally accepted government auditing standards and under the authority vested in the California State Auditor by Government Code 8543 et seq. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on the audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Respectfully submitted,



ELAINE M. HOWLE, CPA
California State Auditor

October 27, 2020

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Appendix A

Scope and Methodology

The Joint Legislative Audit Committee (Audit Committee) directed the California State Auditor to review DTSC's activities related to the cleanup of lead soil contamination in the area surrounding the former Exide facility located in Vernon, California. The Audit Committee specifically requested that we review DTSC's contracting practices and its costs and time frames to complete the cleanup of lead-contaminated properties. The table below lists the objectives that the Audit Committee approved and the methods we used to address them.

Table
Audit Objectives and the Methods Used to Address Them

AUDIT OBJECTIVE	METHOD
1 Review and evaluate the laws, rules, and regulations significant to the audit objectives.	Reviewed relevant laws, regulations, rules, policies, procedures, and best practices related to the Exide cleanup project.
2 For the contracts that DTSC has executed for cleanup activities, determine the following: a. Whether the cleanup cost per property varies between contracts, the causes for any such differences, and whether such differences are reasonable; if not, identify actions DTSC could take in the future to prevent cost differences. b. Which major factors, apart from parcel size, determine the per-property cleanup costs. c. Whether DTSC complied with relevant state contracting rules in awarding cleanup contracts. If DTSC did not comply, identify the major reasons why not. d. What actions DTSC has taken to avoid contractors exceeding contract amounts. e. Whether DTSC's administrative costs for oversight and administration of the contracts are consistent with its actual expenses.	<ul style="list-style-type: none"> Reviewed DTSC's cleanup contracts to identify anticipated costs per property. Reviewed DTSC contractors' billing and DTSC payment records to identify the cleanup cost per property for each of its Exide-related contracts. Reviewed contract documentation and interviewed key personnel to determine the reasons that cleanup costs per property for DTSC's Exide-related contracts differed and whether these differences were appropriate and supportable. Reviewed comparable site mitigations and interviewed DTSC and EPA staff to identify major factors that determine per-property cleanup costs. We found that size of property, depth of excavation, and need for transportation of contaminated soil were major cost factors. Reviewed all of DTSC's active Exide cleanup contracts to determine whether it awarded them in compliance with state requirements. Because state law exempts DTSC from many state contracting requirements in response to hazardous waste mitigation, we did not identify any noncompliance with state requirements for awarding contracts. Reviewed all of DTSC's active Exide cleanup contracts to determine whether its cleanup contract payments have exceeded original contract amounts. Interviewed DTSC staff to identify what actions the department has taken to avoid contract cost overruns. Identified DTSC's costs for the Exide cleanup that do not directly relate to its cleanup contracts. These other costs totaled \$35 million as of May 2020. DTSC did not track these costs in a manner that allowed us to identify the portion specific to its oversight and administration of the cleanup contracts.
3 Evaluate DTSC's per-property cleanup cost estimates. Determine what factors contributed to increases in cost estimates in 2018 and whether those factors are consistent with the reasons cited in DTSC's budget documents. Determine whether the magnitude of the contracts was a factor in the increase in per-property cleanup costs. To the extent possible, determine whether DTSC's current per-property estimates will further increase.	<ul style="list-style-type: none"> Reviewed DTSC's cost estimates and comparable site mitigations and interviewed DTSC staff to determine the reasonableness of its per-property cleanup cost estimates. Reviewed DTSC's budget change proposals to identify the factors it determined to have contributed to its cost estimate increases in 2018. Reviewed DTSC's cleanup contracts and budget change proposals and interviewed DTSC staff to determine whether the magnitude of its contracts or additional causes were factors in the increase in per-property cleanup costs. Interviewed DTSC staff to obtain their perspectives on whether DTSC's cost estimates will further increase.

continued on next page...

AUDIT OBJECTIVE	METHOD
4 Determine when DTSC anticipates completion of the Exide cleanup efforts of different kinds of properties, such as commercial properties and private residences, and assess the reasonableness of the projected time frames. Specifically, identify the factors that contributed to the duration of the cleanup efforts.	<ul style="list-style-type: none"> Reviewed DTSC's cleanup plan and budget change proposals to identify its time frames for the completion of different types of properties within the cleanup site. Reviewed property cleanup data from DTSC's property database and interviewed DTSC staff to identify factors that contributed to the duration of the cleanup efforts. Assessed the completeness and accuracy of DTSC's property database and determined that the information in the database was sufficiently reliable for our purposes. Analyzed the reasonableness of DTSC's time frames to determine whether it is likely to meet its expected deadline of June 2021 to clean the most contaminated residences and all contaminated childcare centers, parks, and schools.
5 Determine the total expected cost of the Exide cleanup efforts, including actual costs so far and, to the extent possible, the estimated cost of expected remaining cleanup efforts.	<ul style="list-style-type: none"> Reviewed state and departmental financial reports. We compared the amounts the State has lent to DTSC and the amount DTSC has spent thus far for the Exide cleanup. Projected the expected remaining cleanup costs for residences, childcare centers, parks, and schools based on DTSC's actual prior costs and number of properties cleaned.
6 Determine whether there are additional steps that DTSC can take to improve the efficiency of the Exide cleanup process.	Reviewed the contracts DTSC holds for cleanup of contaminated properties to determine the available options under these contracts for DTSC to accelerate the speed of cleanup efforts.
7 Review and assess any other issues that are significant to the audit.	<ul style="list-style-type: none"> Contacted the Office of the Attorney General to inquire about the status of the State's cost-recovery efforts. Reviewed DTSC's outreach activities and interviewed DTSC staff to determine the sufficiency of and adherence to DTSC's Public Participation Plan. The plan includes informing affected communities about the cleanup plan and identifies key community stakeholders, local governments, nonprofit organizations, legislative offices, and other agencies. We found that DTSC conducted sufficient outreach efforts to the affected communities. Reviewed the status of Exide's permit application since 2000 and DTSC's actions in response to the application.

Source: Analysis of Audit Committee's audit request number 2020-107, state law, and information and documentation identified in the column titled Method.

Appendix B

Table B
Sampling and Cleanup Status as of May 2020 of Properties in the Cleanup Site

SOIL SAMPLING STATUS	PROPERTIES
Sampled	8,555
Not sampled*	1,604
TOTAL PROPERTIES	10,159

CLEANUP STATUS	PROPERTIES
Cleaned by DTSC	1,529
Cleaned by Exide	186
Cleaned by Los Angeles Unified School District	49
Remaining to be cleaned [†]	6,375
Total properties needing cleaning	8,139
No Permission to sample/clean	1,150
Sampled and did not need cleaning [‡]	870
Total properties without permission to clean or not needing cleaning	2,020
TOTAL PROPERTIES	10,159

CLEANUP BY PRIORITY	PROPERTIES
Cleaned before implementation of DTSC's cleanup plan	330
Prioritized for cleanup	3,200
Additional contaminated properties needing to be cleaned to meet DTSC's target	4,609
Total needing to be cleaned	8,139
Total properties not needing cleaning or without permission to clean	2,020
TOTAL PROPERTIES	10,159

Source: DTSC property database.

* For 1,150 properties, owners have not granted DTSC permission to sample the soil and determine the lead contamination level. DTSC has permission to sample the remaining properties but has not yet done so.

[†] Includes an estimate of the number of unsampled properties with permission to sample that will likely require cleaning.

[‡] Includes an estimate of the number of unsampled properties with permission to sample that will likely not require cleaning.

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Jared Blumenfeld
Secretary for
Environmental Protection



Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
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Gavin Newsom
Governor

October 7, 2020

Elaine M. Howle, CPA*
California State Auditor
621 Capitol Mall
Suite 1200
Sacramento, California 95814

Dear Ms. Howle:

The Department of Toxic Substances Control (DTSC) appreciates the opportunity to respond to the findings and recommendations in the California State Auditor's (CSA) Audit Report. DTSC would like to thank you and your staff for the time and effort dedicated to conducting this audit. We would also like to thank Assembly Member Santiago for requesting this audit.

The State of California made a strong commitment to immediately help people who live around the former Exide facility by jumpstarting a cleanup while DTSC worked to hold Exide accountable to finish the cleanup it was responsible for performing. The State provided approximately \$250 million for DTSC to conduct cleanups at up to 3,200 of the most heavily-contaminated parcels. Without this commitment, communities would have been forced to wait for cleanups to commence.

DTSC appreciates the insights gained from discussions with your staff and from your audit's findings and recommendations. We believe this process provided DTSC with information we will use to better serve the people who live around the former Exide facility in Vernon, California. This is especially important given that only one other site in the nation exceeds the size of DTSC's residential cleanup, which is the largest, most logistically complex residential cleanup project the state of California has ever undertaken.

DTSC concurs with the recommendations in the audit report and, as described below, has started to implement some and will implement all of the audit's recommendations. The following provides our specific responses to several issues in the audit.

①

DTSC has Begun to Implement Some and Will Implement All Recommendations

* California State Auditor's comments begin on page 39.

As described below, DTSC has begun to implement some of the audit's recommendations and will implement all additional recommendations.

- ② • DTSC has overseen the cleanup of 17 daycare centers and seven schools. DTSC has inspected all other facilities and verified that barriers to soil, such as mulch or grass, are present at all remaining facilities.
- In response to your recommendations, we have undertaken the procurement process for Time Critical Removal Actions (TCRA) to clean up the two remaining publicly-owned daycare centers, two private schools and three parks.

At the 19 remaining daycare centers, we have directed our cleanup contractor to prioritize the facilities for cleanup. We have initiated the cleanup process at eight of these facilities. Three have declined DTSC's request to conduct a cleanup. We are conducting outreach needed to initiate the cleanup process at the eight remaining facilities.

- DTSC has increased our outreach efforts by deploying our consultants to get additional properties signed up for cleanups and increasing the number of cleanup crews to clean up the most contaminated properties.
- DTSC has already tasked a team to work on updating our engineers' estimate on the cost to clean up properties. This will be DTSC's third such comprehensive updated estimate and DTSC will use the information collected from cleaning up 2,000 properties for estimates to account for changing economic, labor and other conditions.
- DTSC will use this new, updated estimate to project the cost for cleaning up the remaining approximately 4,600 properties with lead contamination down to 80 parts per million.

DTSC Has Cleaned Up More Properties More Quickly Than Any Other Residential Lead Cleanup in the Nation

DTSC's mission is to protect California's people and environment from the harmful effects of toxic substances by cleaning up contamination and enforcing safeguards against hazardous waste, among other important actions.

- ③ For this cleanup, DTSC has cleaned up more properties, more quickly than any other residential lead cleanup in the nation. DTSC is conducting cleanups faster in the project's first six years than the other large projects, only one of which achieved higher cleanup rates after nine years.

DTSC has completed over 2,000 cleanups as of October 2, 2020. We are cleaning up 24 properties a week as of September 21, 2020. DTSC is also moving to contract for cleanups at 400 additional properties.

④

DTSC accomplished these cleanups using a more protective lead cleanup standard than the federal government, which increases the scope and intensity of cleanup activities.

DTSC entered into complex contractual agreements, such as the Project-Labor Agreement with the Los Angeles/Orange Counties Building and Construction Trades Council. This agreement promotes training and employment opportunities and careers in the construction industry, with a focus on environmental remediation, while also fostering the participation of small and disabled veteran owned businesses.

DTSC also created a local workforce development and job training program to train and promote the hiring of residents in communities near the former Exide facility. This program expands community engagement in the testing and cleanup process, provides skills and health and safety training, and supports job placement on the project.

One reason that DTSC has been able to implement this massive and logistically challenging cleanup is that we began researching and learning from others in 2014. We spoke with United State Environmental Protection Agency (U.S. EPA) staff, including Project Managers at other lead-contaminated residential cleanups. DTSC also sent project staff to a U.S. EPA conference that brought together experts on urban lead cleanups from across the country. DTSC's early work created a foundation that contributed to DTSC's ability to deliver cleanups to people in communities around the former Exide facility.

DTSC has an ongoing commitment to improve the cleanup by learning, from other experts, from people in the communities we serve, and from our mistakes. Any entity that claims perfect implementation of a large, unique, and challenging project like this residential cleanup isn't truly assessing its performance. The key points in any such assessment are to identify and anticipate problems, take corrective action and continue to improve our ability to protect the people we serve.

DTSC Developed an Estimated Schedule for Implementation of this Large, Logistically Complex Project and Some Factors that Affect the Pace of Cleanups are Unpredictable

⑤

As part of DTSC's environmental review of the cleanup project, DTSC developed estimates of project activities to assess their impact on traffic, vehicle emissions and other factors. DTSC used this information to determine when state law would require mitigation measures.

DTSC included this environmental review information to provide estimates of cleanups that would keep the environmental effects within tolerable margins and to provide a sense of what this pace of cleanup would mean in the community and for the project. DTSC intentionally and responsibly caveated this information with the terms "estimates," "anticipates," and "expects."

- ⑥ In one later section of the audit, it acknowledges that DTSC “estimated” a pace of cleanup. However, in the “Summary” section, the audit charges that “DTSC is significantly behind schedule...” and “has been unable to maintain the cleanup pace it presented...” DTSC appreciates the audit including the term “estimated” in the later section of the report.
- ⑤ The audit also asserts that when DTSC produced its documents for the cleanup, we should have anticipated factors that were unpredictable prior to conducting the cleanup. For example, the audit says that DTSC should have known the following factors before starting the cleanup of thousands of properties over several years:
 - The number of properties configured in a way to require soil excavation by hand or specialized types of excavation equipment;
 - The number of days rain would delay work; and
 - The number of properties where people would need to change the date of scheduled sampling, cleanup and restoration activities.

Importantly, DTSC has kept the public informed about the various factors that can affect the pace of cleanups as we have gained knowledge during project implementation. For example, DTSC has informed the public that rain, extreme heat, property configuration, changes in scheduled work, smoke from fires and the recent pandemic affect the pace of cleanups. DTSC works diligently to keep the public informed about the cleanup and to answer questions.

DTSC has Focused on Implementing the State of California’s Commitment to Conduct Cleanups

DTSC is focused on using the approximately \$250 million provided by the State to conduct cleanups at up to 3,200 of the most heavily-contaminated parcels. Without this commitment, communities would have been forced to wait for cleanups to commence.

- ⑦ However, the audit presumes DTSC should have developed a timeline or planned approach for cleaning approximately 4,600 properties that will remain after DTSC completes the cleanup of several thousand properties.

DTSC does have an approach to continue cleaning up sites. We also modify this approach to account for the unique circumstances at each parcel and to increase our efficiency.

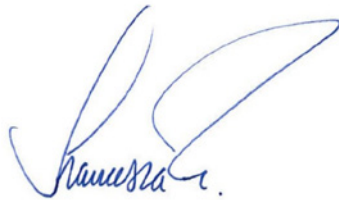
DTSC has provided the public and legislature with our estimate of the amount of time that we expect different phases of the cleanup that we have funds to implement.

- ⑦ DTSC does not currently have the funding to clean up the remaining 4,600 properties. Without knowing a sustained level of funding, providing people in the community with an end date for the cleanup of their properties is at best a guess.

DTSC will comply with the audit's recommendation to create a timeline and additional planning documents for all remaining properties. When doing so, DTSC will note that we are providing this information pursuant to the audit's recommendations.

DTSC is committed to continuing to improve the safety of the people we serve throughout the state of California, including the communities around the former Exide facility. If you have any questions regarding DTSC's response, please contact Grant Cope by email at Grant.Cope@dtsc.ca.gov.

Sincerely,



For:
Meredith Williams, Ph.D.
Director
Department of Toxic Substances Control

② Schools, Parks and Daycares Property Summary as of October 7, 2020

Current Status of Work at Daycares, Parks and Schools			
Category	Day cares	Parks	Schools
Sampled	48	16	33
Cleanup is not Required	10*	13	24**
Prioritized for Cleanup	38	3	9
Prioritized and Cleanup is Complete	17	0	7
Properties to be Cleaned	21	3	2
TCRAs for Publicly Owned Facilities	2	3	2
Expedited in residential cleanup contract (NEC)	19		
Initiated the cleanup process	8		
Outreach to initiate the cleanup process	8		
Declined Cleanup	3		

* Includes three daycares no longer operating

** Includes three schools outside the PIA

COMMENTS

CALIFORNIA STATE AUDITOR'S COMMENTS ON THE RESPONSE FROM THE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

To provide clarity and perspective, we are commenting on DTSC's response to our audit. The numbers below correspond to the numbers we have placed in the margin of DTSC's response.

In its response, DTSC indicates that it has started implementing some of our recommendations; however it did not provide any evidence to support the actions it has taken. We look forward to reviewing documentation of DTSC's progress when it provides us its 60-day, six-month, and one-year responses to our recommendations.

①

DTSC presents numbers related to cleanup activities in its response that are different than those in our report. These discrepancies are due to its numbers and ours coming from different points in time. DTSC provides figures from October 2020 but didn't provide us with any additional evidence to support its numbers. As we discuss on pages 9 and 10 of our report, when reviewing the cleanup status of daycare facilities, schools, and parks, we relied on information as of June 30, 2020, which was the most recent available data during the time of our review.

②

DTSC did not provide any evidence to support its assertion that it has "cleaned up more properties more quickly than any other residential cleanup project in the nation." Accordingly, we cannot validate this assertion nor did we attempt to compare the cleanup pace to other projects. Regardless, we remain concerned that DTSC has been unable to achieve the pace of cleanup that it estimated it would achieve, as we report on pages 13 through 17. Further, as we report on pages 15 and 16, DTSC has not enforced that its contractors follow the pace-related performance standards in its cleanup contracts. Because of these shortcomings, we conclude on page 13 that DTSC will leave some of the 3,200 most contaminated properties uncleaned for six months longer than it originally estimated.

③

DTSC's description of its cleanup pace is not specific enough to understand whether the department has stepped up the pace of its cleanup activities. DTSC asserts that it is cleaning 24 properties a week as of September 21, 2020. However, as we report on page 13, the most recent data we reviewed showed that as of mid-August 2020, the department was only cleaning an average of 16 properties per week. Further, on page 13 we note that from March 2019 through February 2020, DTSC's average cleanup pace

④

was only 20 properties cleaned per week. Therefore, it appears that at best, DTSC may have achieved a cleanup pace of 24 properties a week for about one month. Even then, this pace is less than DTSC's estimated pace of 25 to 35 properties per week in its original plan as we note on page 13. For DTSC to demonstrate that it has corrected the issues we found with its slower than expected cleanup pace and it is on track to clean all 3,200 of the most contaminated properties by its targeted completion date of June 2021, it will need to sustain a cleanup pace well above its historic averages.

- ⑤ We acknowledge that variations in certain factors that affect cleanups may be unpredictable. However, we would expect that, as the State's lead agency for toxic cleanup activities, DTSC would possess the experience and professional qualifications necessary to account for these factors and the variations it would likely encounter, such as the layout of the properties, weather, and scheduling cleanup activities, when it developed the estimate of how quickly DTSC could clean properties. Although we agree that DTSC could not have had precise knowledge of the extent to which variability in these factors would affect its cleanup pace, it should have known that these factors could slow its rate of progress. Therefore, when DTSC offered these as explanations for why it had not achieved its anticipated pace of cleanup, we found them to be inadequate. DTSC should have accounted for the effect of variations in these predictable factors when it developed its expected pace of cleanup, rather than using variations in these factors later to try to justify why it has cleaned properties at a slower than expected pace.
- ⑥ Our conclusion that DTSC is behind schedule is correct and supported by the evidence we present in this report. As we state on page 13, DTSC is unlikely to meet its targeted end date for cleaning the 3,200 most contaminated properties primarily because it has not cleaned properties at the pace it expected. Further, on page 16 we note that DTSC has ordered one of its contractors to stop working and this contractor has historically cleaned an average of 14 properties per week. Therefore, DTSC faces a significant challenge in achieving its targeted completion date.
- ⑦ DTSC's response discounts the importance of project planning for an estimated 4,600 properties that will remain contaminated after it completes the cleanup of the 3,200 most contaminated properties. DTSC suggests that its lack of funding to clean the 4,600 properties is a reason not to create a plan and timeline to clean those properties. However, creating a plan and timeline is critical to informing stakeholders. As we describe on page 18 of our report, without such a plan, the Legislature and the public lack the information necessary to easily understand the full scope of the cleanup effort. We look forward to reviewing the timeline and cost estimate that DTSC states it will create in response to our recommendation.