Department of Toxic Substances Control

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APPROVAL OF CORRECTIVE MEASURES FOR AEROJET CHINO HILLS, END OF WOODVIEW ROAD, CHINO HILLS, CALIFORNIA (EPA ID NO. CAD981457302)

Dear Interested Party:

The Department of Toxic Substances Control (DTSC) is announcing the approval of the Corrective Measures at Aerojet Ordnance - Chino Hills Facility, subject to the Conditions of Approval. The approval allows Aerojet to implement the Corrective Measures that were public noticed during the April-June 1999 public comment period. DTSC's decision comes after a thorough evaluation of public comments which were received during the public comment period. The Conditions of Approval stipulate conditions that must be met during the cleanup, and include requirements for additional air monitoring and for trucks carrying contaminated soil from the facility. The community will receive advance notification via an advertisement in the local newspaper (Chino Hills Champion and/or Daily Bulletin) regarding the time frame for truck travel and for detonation of ordnance. In response to public comments, DTSC is also requiring Aerojet to perform additional work. The description of the Corrective Measures, the Conditions of Approval and the requirements for additional work are described in more detail in the attachment to this letter, and in Section II of the Response to Comments. Everyone who submitted comments to DTSC during the public comment period will receive a copy of the Response to Comments, and a copy has also been placed in the Chino Hills Public Library. DTSC will also hold a public workshop in November 2000 to answer any questions regarding the decision and the Response to Comments.

Aerojet will start Implementing of the Corrective Measures following our approval decision, and will provide DTSC with a schedule of activities within 30 days.

Prior to termination of Corrective Action at the Facility, a future public comment period will be held once the additional work is completed and the Corrective Measures have been implemented. This comment period provides the community with an opportunity to review and comment on future documents, including the Corrective Measures Completion Report, which documents the implementation of the Corrective Measures.

As explained in prior communications, depleted uranium is present in the soil at the Aerojet Ordnance - Chino Hills. Based on a reevaluation of the toxicity of uranium by the U. S. Environmental Protection Agency in April 2000, DTSC has become aware that toxicity to the kidney, not radioactivity, is the most sensitive health endpoint for depleted

ATTACHMENT

The Corrective Measures (also referred to as the Remedy or cleanup measures) proposed in May and June of 1999 consist of several field operations being performed at 10 areas of the site as described in the fourth paragraph below. DTSC has added a number of conditions of approval to the Corrective Measures, and these conditions are included as part of this Attachment. Several of the conditions are described in the project description below.

This project consists of Corrective Measures to clean up contamination found in soil and water at the Aerojet Chino Hills facility. The contamination arose as a result of the facility's operations over the years, which consisted primarily of assembly and testing of various munitions and fuzes.

Laboratory analysis of soil, surface water and groundwater during the site investigation from 1995 through 1999 revealed contamination above human health based cleanup levels at ten locations throughout the Facility. The cleanup levels are established based on human health risks for the individual contaminant as well as a cumulative risk for all contaminants found at the Facility. Soil at five locations (SWMU #7, SWMU #8, AOCs #5, #7 and #9) is contaminated with the explosive chemical RDX. One of these locations (SWMU #7, former Redwater Pond) also contains 1,3,5-trinitrobenzene above cleanup levels. Elemental lead above cleanup levels was found in one sampling location in the former Landfill (SWMU #2) and dioxin above cleanup levels was found in one sample at one location (SWMU #1, Former Burn Area A). CS (tear gas) containing material has been found at two locations (SWMU #2 (Landfill) and SWMU #9 (Former Burn Area 18)). Soil at SWMU #1, SWMU #15, and AOC #6 contains ordnance, and needs to be excavated and transported to Area 1C for screening.

The Corrective Measures are being implemented to clean up the contamination at the Aerojet Chino Hills Facility and, when once completed, will reduce risks to human health and the environment on the facility to acceptable levels. The Corrective Measures consist of the following activities: 1) excavation and removal of below-ground concrete culverts from AOC #5 and AOC #9, 2) Excavation and mechanical screening of soil to remove unexploded ordnance (UXO) and ordnance fragments. This activity includes detonation of live ordnance items (if any are found) to render them safe for off site transport, 3) Excavation and off site transport (by truck) of soil containing explosive chemicals (RDX and 1,3,5-trinitrobenzene), lead and dioxin, 4) Excavation and off site transport of CS (tear gas) containing materials, 5) grading of soil at the former Landfill and Area 1C. Removal actions of culverts, contaminated soil and UXO will reduce the risk to human health and the environment from these contaminants. The cleanup levels for chemical contamination are based on the most conservative health risk scenario - residential land use.

Several administrative and engineering controls are being implemented as part of the Corrective Measures to prevent adverse significant impacts to human health and sensitive plants and wildlife. These provisions include using water to minimize dust generation during excavation activities, and air monitoring and shut down of activities if dust levels exceed 10 mg/m^3. Air monitoring will be required for project activities involving excavation of contaminated soil and CS (tear gas) containing material, and screening of soil for ordnance. Since toxic substances including explosive chemicals, CS (tear gas) and uranium adhere to the dust, air monitoring for dust and ceasing work if dust levels become excessive will provide adequate protection for worker's health as well as health of the off site community health. To minimize risk of fire from detonations, Aerojet will conduct detonations in accordance with standard Explosive Ordnance Disposal (EOD) practices while adhering to requirements established by the Chino Valley Fire District. These requirements minimize fire risk and include restricting detonations so that they

DTSC's proposed cleanup goal for ordnance contamination is future residential land use, and we are in the process of developing residential performance standards for cleanup of UXO. We will have these standards in place prior to termination of Corrective Action, and will evaluate the cleanup of UXO at Aerojet in light of these standards. If the results our evaluation reveal that the ordnance detection and removal activities do not meet our standards for future residential land use, Aerojet will have the option of performing additional ordnance removal activities or considering an alternate land use. The public will have an opportunity to provide input to DTSC on our final land use decision based on the standards along with the results of the continuing ordnance sweep activities prior to termination of Corrective Action.

Based on information provided by USEPA, DTSC has become aware that the cleanup level for uranium set by DHS based on radioactivity is not adequately protective of human health based on toxicity to the kidney. Therefore, DTSC will evaluate existing site data for uranium at the facility to determine if the residential scenario is still appropriate. Our cleanup goal for uranium is to future residential land use standards. However, if the results of our evaluation of the uranium data at the facility indicate that current levels of uranium at the site do not meet residential cleanup standards, DTSC will either require additional cleanup or require Aerojet to consider an industrial land use scenario if they do not wish to implement further cleanup. Please see the response to General Comment 4 for further information.

DTSC is requiring an evaluation of the pumpability of the contaminated groundwater at the location of the former Redwater Pond (58 foot zone) and at Upper A-12 Test Area. Based on the results of this testing, DTSC may consider a modification to the Remedy requiring the facility to pump the groundwater. However, preliminary groundwater sampling data collected to date at both the Redwater Pond and the Upper A-12 Test Area indicate that the water may not be pumpable, due to the small amount of water present, and the amount of time it takes to collect sufficient water for a sample (3 hours in one instance).

DTSC is also requiring additional testing of groundwater at the Upper A-12 Test Area, to verify that perchlorate is not migrating from this location, and testing of groundwater, if present, below the former Landfill (SWMU #2) for perchlorate.

Because present day ordnance detection methods cannot guarantee that all ordnance items have been removed from an area, DTSC is requiring Aerojet to submit a Long Term Operation and Maintenance Plan to ensure ongoing protection of human health and the environment with respect to ordnance. If, at the time of termination of Corrective Action, groundwater above health based cleanup levels remains at the Facility, DTSC will include provisions in this plan for groundwater monitoring over seasonal cycles to address migration issues, and provisions to prevent future users of the site from being exposed to the water. The public will have an opportunity to provide input to DTSC on the provisions of this plan prior to termination of Corrective Action.

The results from the additional work required may not require additional Corrective Measures. Once the field work has been completed, the results documented, and DTSC has completed its review of the results, the public will have an opportunity to provide input to DTSC on the results prior to termination of Corrective Action at the facility. If additional Corrective Measures are needed, additional CEQA documentation will be prepared, and the public will have an opportunity to provide input to DTSC on these additional measures.

5. Aerojet shall be required to notify the California Department of Parks and Recreation (CDPR) office, Los Lagos District, in the event of a brush fire on the property. The phone number is (909) 657-0676. This requirement is being added in response to comments made by CDPR.

6. Once the Corrective Measures have been implemented, surface water both on site and off site shall be resampled for explosive chemicals (via EPA method 8330) and perchlorate. This sampling shall be conducted at a time when surface water is present at the facility.

7. Aerojet shall be required to submit a community education plan at the time the Corrective Measures Completion Report is submitted. The purpose of this plan shall be to establish a dialogue with the community to develop information that the community wishes to know about ordnance in order for them to feel comfortable and be safe using the site in the future. This plan will include setting up a committee consisting of interested community members to discuss the needs of the community regarding ordnance.

8. Long term Operation and Maintenance Requirements

As a requirement for termination of Corrective Action, Aerojet shall be required to submit a Long Term Operation and Maintenance Plan (O&M Plan) to ensure ongoing protection of human health and the environment with respect to ordnance. If, at the time of termination of Corrective Action, groundwater exists at the facility above health based levels, the long term operation and maintenance requirements will include groundwater monitoring over seasonal cycles to address migration issues and provisions to prevent future users of the site from being exposed to the water.

For ordnance, these requirements will include construction support (requirements regarding grading including the placing of 10 feet of fill over ordnance impact areas, and the requirement for the availability of an Explosive Ordnance Disposal (EOD) Specialist during grading), deed notification (informing future property owners regarding ordnance) and the community ordnance education program mentioned above.

These Long Term Operation and Maintenance Requirements will be described in more detail by Aerojet at the termination of Corrective Action at the facility and the O&M Plan will be reviewed and approved by DTSC.

9. Aerojet shall conduct a periodic (at least every 5 years) review of the effectiveness and reliability of the technology used to detect the presence of unexploded ordnance and evaluate the effectiveness of the Community Education Plan, and determine whether modifications to the Remedy and/or Community Education Plan are necessary.

6. Aerojet shall conduct soil and groundwater sampling in the area beneath the Former Landfill (SWMU #2) to determine whether or not perchlorate has impacted the subsurface This investigation should be conducted upon completion of the Corrective Measures excavation of the landfill material. This work shall be conducted at a time when shallow subsurface water is likely to be present on the facility. This requirement is being added in response to evidence that the Former Landfill is the source of perchlorate detected in surface water samples from Soquel Canyon Creek and to address community concerns regarding contaminated groundwater and surface water at the facility

7. Aerojet shall conduct confirmation sampling for Title 22 metals, semivolatile organic compounds, explosive chemicals and perchlorate at Area 5 mentioned in the 1991 Jaykim report titled "Excerpts from Draft Property Assessment of Aerojet Ordnance Chino Facility" This requirement is being added to confirm that levels of these chemicals are below levels of concern as stated in the ordnance sweep report documenting the results of ordnance sweeps for the former test areas at the site.

8 Aerojet shall submit copies of the report documenting the building decommissioning activities for DTSC's review. This requirement is being added to ensure that soil sampling data collected during these activities show no contamination above levels of concern.

9. Aerojet shall conduct an inspection for ordnance at the area along Soquel Canyon Creek, extending 1/4 to 1/2 mile beyond the gate at the southwest exit of the facility (Area of Concern) This requirement is being added to address community concerns.

10. Aerojet shall be required to drill a boring below the excavation of the former underground storage tank to determine if shallow subsurface water is present. This boring shall be drilled 40-60 feet deep, below all unconsolidated material and into bedrock. If shallow subsurface water is encountered, it shall be tested for contaminants of concern from the tank, i.e. BTEX (benzene, toluene, ethylbenzene, xylene) and MTBE. This boring shall be drilled at a time when shallow groundwater is likely to be present at the facility

11. Aerojet shall be required to submit data documenting the existing levels of uranium at the facility, and to conduct sampling of surface water and groundwater at the Facility for uranium. This requirement is being added to ensure that existing levels of uranium are protective of human health and the environment for a future residential land use scenario