CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2017-0005

UPDATED SITE CLEANUP REQUIREMENTS and
RESCISSION OF ORDER No. R2-2002-0103 and R2-2003-0070 for:

OEA AEROSPACE, INC.,
OEA, INC.,
UNIVERSAL PROPULSION COMPANY, INC.,
UNITED TECHNOLOGIES CORPORATION, and
UNITED STATES DEPARTMENT OF THE AIR FORCE

for the property located at:

3530 BRANSCOMBE ROAD
FAIRFIELD, SOLANO COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Regional Water Board), finds that:

A. FINDINGS

1. **Site Location:** The three subject properties (hereinafter the Site) are located at 3530 Branscombe Road (formerly E.T. Road) in Fairfield. The Site is located approximately 2.5 miles south of Travis Air Force Base and 3.5 miles southeast of the City of Fairfield. The Site currently has three different owners and comprises 664 acres:

   a. 532 acres are owned and operated by United Technologies Corporation (UTC). The legal property owner is Universal Propulsion Company, Inc. (UPC). UPC operates as UTC. The 532-acre property includes all the developed operations areas except the Launch Area and the East Launch Area (ELA);

   b. 25 acres are owned by the Department of Defense (DOD), administered by the U.S. Air Force (USAF), formerly leased to OEA Aerospace, Inc. (OEAA), and include the Launch Area and the ELA; and,

   c. 107 acres are owned by OEAA and include the Nurse Slough property located east and south of the 557 acres of UTC and DOD properties.

   The Site is shown on Figures 1 and 2. The adjacent properties are primarily undeveloped agricultural and rural residential developments (Figure 2 - Aerial View of Site).

2. **Site Description:** The Site is located in the Potrero Hills, with buildings and other improvements generally situated on topographic highs and grouped into three areas – the Main Area, the Launch Area/ELA, and the Upper Test Site. Much of the Site consists of undeveloped land that has been leased to local ranchers for livestock grazing. Most of stormwater runoff is captured in a common watershed that drains to the southeast and ultimately discharges to wetlands along Montezuma and Nurse sloughs. Runoff from the Main Area and the Upper Test Site, as well as springs and seeps, is captured on the facility in a small lake (E.T. Lake). Runoff from the Launch Area and ELA bypasses E.T. Lake, enters drainage ditches, and flows directly into the adjacent

offsite wetland areas. The offsite wetlands are part of the Suisun Marsh Protection District. The Site's potable water is provided by a 200-foot-deep water supply well located on Branscombe Road, 4700 feet south of Highway 12, outside the Site's main gate and the three developed areas.

Two of the three improved areas are located on the 532-acre property currently owned by UTC. UTC uses 25 acres of its 532 acres for development of cartridge actuated devices, propellant actuated devices, and linear explosive products. The 25-acre annex that includes the Launch Area and the ELA is owned by DOD, administered by USAF, formerly leased to OEAA, and is currently vacant. The 107-acre land owned by OEAA, known as the Nurse Slough property, is used for limited livestock grazing and includes one vacated residence.

3. **Adjacent Contaminated Sites**: There are no known contaminated sites located immediately adjacent to the Site. The Site's contamination in the ELA has migrated downgradient to the south and east onto the Nurse Slough property. Potrero Hills Landfill is the nearest potential source of contamination and is located approximately 1.5 miles northwest of the Site. However, there is no indication that the landfill has impacted soil or groundwater at the Site.

4. **Site Ownership:** The Site's facilities present on UTC's 532-acre property and the DOD's 25-acre property were built in 1956 by the U.S. Army (Army) and were operated by the Army as a NIKE missile battery (NIKE Battery 53) from 1956 until it was decommissioned in 1964. UTC has owned and operated the developed facilities on the 532 acres since 2012. The 25 acres that contains the ELA are no longer leased by OEAA from DOD. The USAF at Travis Air Force Base is the property administrator. The Nurse Slough property was purchased by OEAA in 2014.

The detailed Site ownership history is summarized below:

Site History

Date	Entity	Event	Activity/Operations
1956	Army/DOD	Acquired 378-acre parcel; built NIKE missile facility	Constructed and operated the Facility area, Launch area, and Integrated Fire Control area.
1962	USAF	Army provides 25-acre Annex to the USAF	Property transfer
1964	Army	Decommissioned the NIKE Missile facility acquired in 1956.	Launch area was used for storage of weapons, medical materials, and resources for the hospital at Travis Air Force Base.
1967	Explosive Technology, Inc.	Purchased 275 acres (not Launch area); leased 25-acre parcel from DOD; and purchased adjoining properties after 1967 bringing the total properties owned to 532 acres.	Explosive test sites were routinely used for research, development, and quality assurance testing of explosive devices.

1971	OEA, Inc. (OEA)	Purchased Explosive Technology, Inc.	
1989	Explosive Technology, Inc.	Became ET, Inc.	
1994	ET, Inc.	Became OEA Aerospace, Inc. (OEAA)	
December 2000	UPC/Goodrich Corp	Purchased certain assets of OEAA, including the 532-acre property. UPC/Goodrich owns manufacturing assets at the Site and the OEAA-owned real property, buildings, and improvements.	Explosive test sites were routinely used for research, development, and quality assurance testing of explosive devices.
2012	UTC Aerospace Systems (UTC)	UTC purchases Goodrich Corp and combines with Hamilton Sunstrand to form UTC Aerospace Systems. UPC operates as UTC.	Explosive test sites were routinely used for research, development, and quality assurance testing of explosive devices.
November 2014	OEAA	Purchased 107 acres of Nurse Slough property located south and east of the ELA	Grazing, one vacant residence.

5. **Named Dischargers:** The current owners, and previous owners of the properties, as well as property administrators for DOD-owned property, are named dischargers. Based on the history of chemical usage, including explosives, metals, and solvents, all of which are found in the soil and groundwater at the Site, the owner, previous owners, and past operators listed here caused or contributed to the contamination encountered on the Site as detailed below.

   Autoliv is the parent company to OEA and OEAA. OEA and OEAA are named as dischargers because they are the past owners of the Site property comprising 532 acres, current owners of the 107-acre property, and the former lessees of the 25-acre DOD property.

   UPC, the legal entity that owns UTC, is named as a discharger. UPC has owned the 532-acre portion of the facility since 2000 and has operated on the property as UTC from 2012 to the present. As current owner, UPC continues operations that have the potential to cause or contribute to the soil and groundwater contamination on the Site.

   USAF is named as a discharger because it is identified as the property administrator of the DOD-owned, 25-acre portion of Site. The United States, including the USAF, has waived sovereign immunity pursuant to CERCLA section 120 (42 U.S.C. 9620), RCRA section 6001 (42 U.S.C. 6961), and Clean Water Act section 313 (33 U.S.C. 1323).

   OEA, OEAA, UPC (operating as UTC), and USAF are, hereinafter, jointly referred to as “the Dischargers.” The Dischargers are jointly and severally responsible for meeting the requirements of this Order. Under the existing orders, OEAA has assumed primary responsibility for

investigation and/or previous remedial actions at the Site and adjacent offsite areas. If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered waters of the State, the Regional Water Board will consider adding those parties' names to this Order.

6. **Regulatory Status:** On September 15, 1999, the Regional Water Board adopted Site Cleanup Requirements Order No. 99-072. On October 16, 2002, the Regional Water Board adopted Order No. R2-2002-0103 and rescinded Order No. 99-072. On August 7, 2003, the Regional Water Board adopted Order No. R2-2003-0070, which amended Order No. R2-2002-0103. The actions implemented at the Site, as required by these orders, included investigation and characterization of constituents of potential concern (COPC) in soil and groundwater at seven areas of concern listed in Table 6.1 below. Of these seven areas, five have had soil excavation remedial actions and three have active ongoing monitoring and/or investigation requirements. The current work includes annual groundwater monitoring in the Main Area for volatile organic compounds (VOCs) and in the ELA and Eastern Downgradient Area for perchlorate and VOCs (Figures 3 and 4). The Main Area groundwater monitoring program has documented over 15 years of groundwater monitoring and recent results are indicative of potential closure in the near future. The ELA groundwater monitoring network has expanded in response to recent (2015) offsite investigation results, and additional soil and groundwater investigations are required to define the lateral and vertical extent of perchlorate within the ELA and downgradient to the southwest on the Nurse Slough property.

Table 6.1 - Closure and Regulatory Status

Location	COPC	Medium	Description	Closure and Regulatory Status
Launch Area (MAW/Braider building Area)	Lead, antimony, explosives	Soil	3,738 cy of lead-impacted soil excavated and disposed offsite.	No further action required for soil in MAW/Braider building Area of the Launch Area where impacted soil was removed.
ELA (Assembly building, Remote Saw Area, Mixer Shed)	Lead, explosives, perchlorate	Soil	62 cy of lead-impacted soil excavated to bedrock near the Remote Saw area.	No further action required for lead in soil in Remote Saw area. Soil and groundwater investigation for other COPCs near and beneath the Remote Saw excavation footprint required.
	Perchlorate VOCs	Groundwater	Groundwater monitoring and characteriza-tion required and cleanup may be required.	Groundwater monitoring and characterization required, and clean up may be required in the vicinity of and downgradient from the Remote Saw Area and Mixer Shed.

Upper Test Site Area	Lead, copper, explosives	Soil	639 cy of impacted soil excavated and disposed offsite.	No further action required for lead, copper, and explosives in soil in Upper Test Site Area.
Southern Downgradient Area (downslope/ undeveloped areas)	Lead	Stormwater	Source removal, erosion and sediment control.	Erosion control system installed in 1999 and lead source soil excavated to prevent runoff to this area. Continued stormwater monitoring of this downgradient area.
Eastern Marsh Area	Perchlorate	Groundwater, sediment, pore water, vegetation, surface water	Constituents of concern not detected.	No current action required. Monitoring may be required in the future due to upgradient sources.
Eastern Downgradient Area	Perchlorate	Groundwater	Groundwater monitoring and characteriza-tion required, and cleanup may be required.	Groundwater monitoring ongoing. Corrective Action Plan may be required by this Order.
Main Area (Building 7, former lead smelting area)	Lead	Soil	82 cy of lead-impacted soil excavated from two impacted areas and disposed off-site.	No further action required for soil in two areas northeast and southwest of Building 7 in the Main Area.
	VOCs	Groundwater	VOCs present in groundwater.	Groundwater monitoring ongoing. Corrective Action Plan may be required by this Order.

7. **CERCLA Status:** Despite OEAA's voluntary status as the primary discharger, this Site is included as part of the Travis Air Force Base Environmental Restoration Program cleanup program and will be closed under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) once OEAA receives Regional Water Board concurrence with No Further Action. Specifically, during the late 1980s, the U.S. Army Corps of Engineers (COE) conducted an environmental assessment of 338 acres of the NIKE facility as required by the Superfund Amendments and Reauthorization Act of 1986 (SARA). SARA gives DOD the authority to conduct certain cleanup activities at former DOD sites and using the Defense

Environmental Restoration Program (DERP) as the vehicle to accomplish these cleanups. The cleanup of Formerly Used Defense Sites (FUDS) is part of the program, subject to requirements of CERCLA. In October 1990, the COE determined that the former military activities on the 338 acres did not mandate any additional cleanup action. For the 25-acre DOD Annex, the CERCLA status is deferred until the Regional Water Board's order(s) are rescinded and the USAF can renegotiate with U.S. EPA Regional IX and the California Department of Toxic Substances Control.

8. **Purpose of Order:** The purpose of this Order is to require restoration of water quality, including addressing groundwater contamination caused by historic releases from the Site, to a level that is protective of human health, safety, and the environment and to ensure that the beneficial uses of water resources are maintained considering both current and reasonably forseeable future land and water uses. The Dischargers have discharged constituents of concern, including VOCs and perchlorate, to soil and groundwater underlying the Site, specifically at the Main Area, the ELA, and the Nurse Slough property. The VOCs and perchlorate have exceeded applicable drinking water standards, have impacted downgradient private water supply wells, and potentially threaten surface water quality in the adjacent Nurse Slough and wetlands if not controlled.

   This Order requires: 1) a Storm Water Pollution Prevention Plan (SWPPP), 2) a water supply well management plan, 3) a data gap investigation work plan, 4) a data gap investigation technical report, 5) a risk assessment work plan, 6) a risk assessment report, 7) a corrective action work plan, 8) a corrective action implementation report, 9) a corrective action status completion report, 10) the optimization of the groundwater monitoring well network, and 11) a self-monitoring program to provide ongoing assessment of groundwater and surface water conditions and impacts from releases at the Site.

9. **Geology:** The Site is situated at the eastern end of the Potrero Hills, which are formed by weather-resistant sandstone beds of the Eocene Markley Formation. The beds dip steeply in an arcing pattern away from the Site, reflecting an east-dipping anticline. The Site is underlain by subsurface soil comprised primarily of weathered bedrock sandstone and shale, with colluvium and landslide deposits.

   The ELA and a portion of the Nurse Slough property geology also include a fault-bound portion of the Tehama Formation, which overlies the Eocene Markley Formation. The Tehama Formation is composed of sandstone, siltstone conglomerate, and volcanic ash. In the ELA, the depth to bedrock is shallow (approximately 1 to 3 feet below ground surface) except in the drainage swales where colluvial deposits may be deeper.

10. **Hydrogeology:** The depth to first-encountered groundwater beneath the Site is highly variable and dependent upon topography and elevation. It ranges from 5 to 50 feet below ground surface, depending upon the location. The general flow of groundwater is controlled by topography. Usable aquifers are relatively deep, and shallow perched groundwater may be encountered across much of the Site. These shallow perched zones are recharged during the rainy season and sustain subsurface groundwater flow beneath the surface drainage swales during the dry summer months. Shallow groundwater has been observed to seep from the cut banks of drainage courses at lower elevations within the facility. Two springs are located within the limits of the Site, one about 1,350 feet east of the upper area and one approximately 600 feet east of the ELA on the

Nurse Slough property. Surface drainage is controlled by the sandstone beds and is generally radial, away from the center of the Site toward the north, east, and south. The Site is surrounded by sloughs and marshes, which are part of the San Francisco Bay estuary system.

11. Water Supply Wells:

a. UTC property Water Supply Well

Drinking water at the UTC property is obtained from a well drilled in 1975 that is more than 200 feet deep and is tested regularly in accordance with requirements of the Department of Health Services. To date no contaminants have been detected in this well.

b. Nurse Slough property Water Supply Wells

There are no water supply wells on the DOD property. Five water supply wells have been installed on the Nurse Slough property ("Replacement Well", cistern, OSW#1, OSW#2, and OSW#3). Of those, one has been destroyed (the "Replacement Well"), three remain but are not in use (OSW#1, OSW#2, OSW#3), and one is currently in use (cistern) at the Stolte Duck Club. Task 2 requires submittal of a management plan for groundwater that has potable uses (i.e., drinking water) and that may also contain perchlorate and/or VOCs.

i. Shallow Water Supply Wells:

On the Nurse Slough property, water in the shallow water-bearing zone has historically been used for limited human consumption during duck hunting season serviced by a shallow well (labeled "cistern") and for agricultural purposes serviced by a shallow standpipe accessing a gravel filled trench (OSW#3). The cistern is located approximately 600 feet northeast of the ELA, and OSW #3 is located about 2400 feet south of the ELA.

The cistern, a shallow (estimated within 10 feet of surface), approximately 3-foot standpipe well, is a current source of water for the Stolte Duck Club, located east of the Nurse Slough property. Stolte Duck Club owners state that water is used for plumbing in the kitchen, restroom, and showers but claim it is not ingested due to aesthetic reasons (high TDS). The cistern was sampled recently in 2012 and 2015. Perchlorate has been detected in the cistern in 2012 at 0.56 ug/L and was not detected in the sample collected in 2015. The California MCL for perchlorate is 6 ug/L.

OSW#3 is located south of the ELA on Nurse Slough property and is not currently in use. It was constructed as a 15 foot deep standpipe that accesses shallow groundwater from a gravel-filled trench 150 feet long, 20 feet wide, and 5 feet deep. In 2012, groundwater collected from this well contained perchlorate at 68 ug/L.

ii. Deeper Water Supply Wells:

Water from deeper groundwater zones was historically used for domestic purposes at a residence serviced by two domestic wells (OSW #1 and OSW #2). The wells are located approximately 600 feet east of the ELA. OSW#1 and OSW#2 are allegedly 120 and 180 feet deep, respectively, and are no longer in use (the residence is currently vacant). Historical monitoring at OSW#1 and OSW#2 included sample collection and perchlorate analysis for five consecutive quarters during 2000/2001. There were no perchlorate

detections during this monitoring program. Analytical results for OSW#1 and OSW#2 samples collected during 2015 were also non-detect for perchlorate.

A replacement well, labeled as "Replacement Well," was drilled in 2013 near the shallow water supply well OSW#3 (2400 feet south of the ELA) to replace OSW#3. The Replacement Well was installed to a depth of 160 ft and screened from 60 to 160 feet bgs. It was sampled in 2013 and contained perchlorate at 22 ug/L and VOCs (carbon tetrachloride, vinyl chloride, and 1,1-DCE) above MCLs. The Replacement Well was properly abandoned in 2015.

12. **Surface Water Hydrology**: The closest surface water body is Nurse Slough, which is east and south of the Nurse Slough property. (Figures 1 and 2).

13. **Stormwater Management**: Most of the stormwater on the UTC property is captured in a common watershed that drains to the southeast and ultimately discharges to wetlands north of Montezuma Slough and west of Nurse Slough (Figure 1). Runoff from the Main Area and the Upper Test Site, as well as springs and seeps, is captured on the facility in a small lake (E.T. Lake). Runoff from the Launch Area and ELA bypasses E.T. Lake, enters drainage ditches, and flows directly into the adjacent offsite wetland areas. The offsite wetlands are part of the Suisun Marsh Protection District. Stormwater sample locations are presented on Figure 5.

14. **Site History and Environmental Impacts:** The Site's manmade features present on the UTC 506-acre property and the 25 acre DOD property were built in 1956 by the Army and were operated by the Army as a NIKE missile battery (NIKE Battery 53) from 1956 until it was decommissioned in 1964. The primary activities during this period included the operation, maintenance, and fueling of NIKE missiles. These activities included the use of a launch area and integrated fire control area. The launch area has been used for storage of weapons, medical materials, and hospital resources for Travis Air Force Base. Chemicals used included nitric acid, fuming red nitric acid, hydrazine, JP fuel, octane, gasoline, 2-propanol, trichloroethylene (TCE), acetone, methyl ethyl ketone, tetrachloroethylene (PCE), polychlorinated biphenyls (PCBs), red phosphorous, waste oils, paints, and ethylene glycol. These chemicals may have been released to the soil and/or groundwater through various use and disposal practices.

    The ELA activities impacted the downgradient Nurse Slough property and resulted in perchlorate and VOC impacts to groundwater.

15. **Investigations:** Figure 2 depicts the locations of the seven areas that were identified for further assessment due to historic activities at the Site: 1) Launch Area (includes the former NIKE missile launch area where MAW/Braider Building test sites are located), 2) ELA (includes the Assembly building, Remote Saw Area, Mixer Shed), 3) Upper Test Site Area, 4) Southern Downgradient Area (includes southern downslope undeveloped areas, including E.T. Lake), 5) Marsh Area (includes the surrounding marshes), 6) Nurse Slough property (includes the eastern downslope undeveloped areas), and 7) Main Area (includes Building 7 Test Site and former lead smelting area). A risk-based approach was used for conducting the prior investigations and to evaluate risks associated with potential exposure of human and ecological receptors to contaminants at the Site. The characterization included analyses of surface and subsurface soil samples, sediment samples, and surface water and groundwater samples.

The following field work was performed: 1) soil and groundwater samples were collected from 23 investigation locations, and 17 of the 23 borings were converted to groundwater monitoring wells; 2) groundwater samples were collected from water supply wells, and 1 water supply well was properly abandoned; 3) vegetation samples were collected at 16 locations along 5 defined drainage pathways and analyzed for perchlorate; 4) the wetlands area was investigated for perchlorate in pore water, sediment, and vegetation at 9 locations; and 5) 4 surface water samples were collected in the wetlands for perchlorate analysis. The groundwater sample analytical results showed that perchlorate had migrated beyond the ELA onto the Nurse Slough property. Data gaps currently exist to the west and southwest of the Nurse Slough property.

a. Soil

Soil samples were analyzed for mercury, silver, chrome, nickel, antimony, copper, and lead. All samples for metals were extracted by U.S. EPA Method 3050A and analyzed using U.S. EPA Method 6010A series. The analytical results indicated elevated concentrations of metals in surface soils, as well as in shallow depths in the Launch Area, ELA, Upper Test Site Area, Southern Downgradient Area, and the Main Area. Concentrations generally decrease with depth. The highest concentrations of lead were detected at the MAW Test Site and the Braider Building (37,000 and 17,000 mg/kg, respectively). Building 7 also had elevated lead, with a maximum concentration of 17,000 mg/kg. The data indicated that lead is the only metal detected at the Site above Preliminary Remediation Goals (PRGs), primarily at the MAW Test Site. The maximum background concentration for lead at the Site is about 13 mg/kg as reported by OEAA.

Soil samples were also analyzed for explosives, including HMX (octahydro-1,3,5,7-tetranitro-1,3,5-tetrazocine) and RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine). Combined HMX and RDX concentrations were detected up to 920 mg/kg and were localized near the centers of lead-impacted areas. Higher concentrations of explosives were located near the soil surface. Previously completed remediation of the soil contamination is discussed below in Finding 16.

b. Groundwater

Groundwater monitoring is ongoing at three areas - the Main Area, which contains VOCs, and the ELA and Nurse Slough properties, which contain perchlorate and low levels of VOCs. A total of 28 monitoring wells are currently present at the Site, as well as monitoring data gathered from a cistern and three water supply wells (OSW#1 to OSW#3) located on the Nurse Slough property. Four monitoring wells are located in the Main Area, 7 are located in the ELA, and the remaining 17 are located downgradient, south and east, of the ELA on the Nurse Slough property. The 17 wells on the Nurse Slough property were installed to define the plume extent to the south, east, and southeast of the ELA. The extent of the plume is not delineated to the south and west of the Nurse Slough property.

Groundwater monitoring results over the past three years show monitoring wells in the Main Area contain 1,1-dichloroethene (1,1-DCE) at concentrations up to 7.3 ug/L and 1,1-DCA at concentrations up to 0.63 ug/L (both in monitoring well CDM-1). 1,1-DCA has been below the MCL since monitoring began in 2001 and is not considered a current constituent of concern. In the ELA and Nurse Slough properties, groundwater samples have contained 1,1-DCE at concentrations up to 47 ug/L and perchlorate at concentrations up to 1,400 ug/L. Further characterization is required in Task 3 to confirm the boundaries and stability of the

VOC and perchlorate plume in the ELA. The California primary maximum contaminant level (MCL) in drinking water for 1,1-DCE and 1,1-DCA is 6 ug/L and 5 ug/L, respectively, and for perchlorate, the California MCL is 6 ug/L. Additional VOCs have been sporadically detected in site groundwater below MCLs. Highest concentration summary tables are presented below:

Table 15.1 - Maximum Contaminant Concentrations in Groundwater Measured in ELA and Nurse Slough Property Wells (2013 through 2016)

Constituent	Contaminant Concentration (µg/l)	Well	Reference
Perchlorate	1,400	CDM-10	December 9, 2015, *Off-Site Perchlorate Investigation Report of Findings* issued by CDM Smith, Table 4-6
1,1-DCE	47	CDM-21	December 9, 2015, *Off-Site Perchlorate Investigation Report of Findings* issued by CDM Smith, Table 4-7

Table 15.2 - Maximum Contaminant Concentrations in Groundwater Measured in Main Area Wells (2013 through 2016)

Constituent	Contaminant Concentration (µg/l)	Well	Reference
1,1-DCE	7.3	CDM-1	October 31, 2013, *Annual Groundwater Monitoring Report* issued by CDM Smith, Table 2-2
1,1-DCA	0.63	CDM-1	October 31, 2013, *Annual Groundwater Monitoring Report* issued by CDM Smith, Table 2-2

16. Remedial Actions: Soil remedial actions were implemented in 2004. Shallow soil affected by metals and explosives was excavated in the Launch Area, ELA, Upper Test Site Area, Southern Downgradient Area, and the Main Area. Confirmation samples were collected, excavated soil was treated and sent for disposal, and the excavated areas were restored. No further action is required in these areas with respect to the constituents of concern for which the excavation was implemented.

Groundwater monitoring is still required in the Main Area, the ELA, and the Nurse Slough property, and this Order requires the restoration of water quality, including addressing groundwater contamination caused by historic releases from the Site, to a level that is protective of human health and the environment.

17. Basis for Interim Cleanup Levels:

a. **State Water Board Resolution No. 68-16**, entitled "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires preservation of the highest water quality consistent with the maximum benefit of the people.

b. **State Water Board Resolution No. 92-49**, entitled "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304," applies to this discharge. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

c. **Regional Water Board Resolution No. 89-39**, entitled "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region with limited exceptions for areas of high total dissolved solids, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site is designated MUN, which is municipal and domestic supply.

d. **Beneficial Uses**: The Basin Plan is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface water and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law, where required.

   The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

   i. Municipal and domestic supply;
   ii. Industrial service supply; and
   iii. Agricultural water supply.

   For surface water runoff discharges to wetlands adjacent to Suisun Marsh, the existing and potential beneficial uses of this surface water include:

   i. Freshwater replenishment;
   ii. Water contact recreation;
   iii. Non-contact water recreation;
   iv. Estuarine habitat;
   v. Wildlife habitat;
   vi. Preservation of rare and endangered species; and
   vii. Fish migration and spawning.

e. **Basis for Interim Groundwater Cleanup Levels**: The groundwater cleanup levels for the Site and downgradient properties are intended to protect beneficial uses of surface and groundwater and will result in acceptable residual risk to human health, safety, and the environment. The groundwater cleanup levels are based on applicable water quality objectives and are the more stringent of U.S. EPA and California primary MCLs. Restoration of water quality to this level will result in acceptable residual risk to human and ecological receptors.

f. **Basis for Interim Soil Cleanup Levels**: The soil cleanup levels are based on a residential land use exposure scenario for the Site. The soil cleanup levels are selected from the 2016

ESLs.[1] The soil cleanup levels for the Site are intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans.

18. **Future Changes to Cleanup Levels**: A goal of this Order is to restore water quality and the beneficial uses of surface water and groundwater underlying and adjacent to the Site and to protect human health, safety, and the environment. If new technical information indicates that cleanup levels can be surpassed, the Regional Water Board may determine that further cleanup actions shall be taken.

19. **Reuse or Disposal of Extracted Groundwater**: Regional Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

20. **Basis for 13304 Order**: California Water Code (CWC) section 13304 authorizes the Regional Water Board to issue orders requiring dischargers to cleanup and abate waste where the dischargers have caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

21. **Basis for 13267 Requirements:** To the extent the tasks in this Order are ordered pursuant to CWC section 13267, the burden, including costs, of conducting these activities bears a reasonable relationship to the need for the information and the benefits to be obtained from it. Specifically, the contamination at the Site poses a threat to human health and the environment, and compliance with this Order will identify and abate those threats.

22. **California Safe Drinking Water Policy:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to be remediated such that MCLs (designed to protect human health and ensure that water is safe for domestic use) are met in existing and future supply wells.

    Currently the Site's contamination is not migrating into the UTC property water supply well and is not above the MCLs in the cistern used at the Stolte Duck Club. A monitoring well network, which includes water supply wells no longer in use for domestic or irrigation use, has been put in place to monitor the migration of contaminants. Regional Water Board staff is working with the Solano County Environmental Health to monitor the drinking water at the Stolte Duck Club.

23. **California Environmental Quality Act (CEQA):** This Site has been previously subject to cleanup requirements under Order No. 99-072, then subsequently Order No. R2-2002-0103, and then Order No. R2-2003-0070, which amended Order No. R2-2002-0103. This Order only requires that the requirements first imposed by the previous order be continued and to gather additional information; improve the effectiveness of ongoing investigation, cleanup, and abatement actions; and further evaluate the Site's environmental conditions. These actions will not result in any potential significant impacts beyond the existing baseline. As such, the general

[1]February 2016 ESLs compiled by San Francisco Regional Water Quality Control Board staff, *Summary of Soil ESLs, Residential Shallow Soil Exposure*

rule that CEQA only applies to projects that have the potential for causing a significant effect on the environment (the "common sense" exemption) applies, and no environmental document needs to be prepared in connection with the adoption of this Order [Cal. Code Regs., title 14, §15061(b)(3)].

24. **Notification:** The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to update Order No. R2-2003-0070 and has provided them with an opportunity to submit their written views and recommendations.

25. **Public Process:** The proposed Order was made available on the Regional Water Board website for two weeks to provide the public with an opportunity to comment on the proposed Order.

IT IS HEREBY ORDERED, pursuant to CWC sections 13304 and 13267, that the Discharger (or its agents, successors or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup, which will cause significant adverse migration of wastes or hazardous substances, are prohibited.

B. CORRECTIVE ACTION PLAN AND CLEANUP LEVELS

1. **Implement Corrective Actions**: The Dischargers shall implement corrective actions as required in Section D and as necessary to comply with the requirements of this Order. At a minimum, implementation of any required remedial actions shall be demonstrated through compliance with the Self-Monitoring Program (SMP) attached to this Order. The SMP is designed to collect information necessary to evaluate the potential migration of chemicals of concern (COCs) associated with known releases at the Site and the effectiveness of any required remedial actions implemented to address those releases. The SMP may be revised at the discretion of the Executive Officer, as necessary, to better evaluate site conditions, discharges, and remedial action effectiveness. Should corrective actions trigger further CEQA analysis, the analysis will be completed as required by State law.

2. **Supplied Drinking Water:** The Dischargers shall ensure that the water supplied to the residences and Stolte Duck Club is safe for human consumption (does not contain perchlorate or VOCs above California MCLs), including providing an alternate drinking water source.

3. **Interim Cleanup Levels:** OEAA has acknowledged and agreed that it shall restrict the use of the Nurse Slough Property to preclude any residence for human habitation, any hospital, any schools for persons under 21 years of age, and any day care centers for children or day care centers for senior citizens. Moreover, OEA and any occupant of the Nurse Slough Property shall be prohibited from: (i) any excavation work on the property, unless permitted in writing by

Regional Water Board staff; and (ii) drilling, boring, or otherwise constructing any new well(s) on the Nurse Slough Property for the purpose of extracting water for any domestic or potable use, unless expressly permitted in writing by Regional Water Board staff. Until this happens and provides a change basis for the Interim Cleanup Levels, the Interim Soil and Interim Groundwater Cleanup Levels described below will be used:

a) **Interim Groundwater Cleanup Levels**: The interim groundwater cleanup levels for the Site and downgradient properties are intended to protect the beneficial uses of groundwater and will result in acceptable residual risk to human health, safety, and the environment. The interim groundwater cleanup levels are selected from the California primary maximum contaminant level (MCL) and are listed in below. Dischargers may propose site-specific groundwater cleanup levels for Executive Officer concurrence.

The Discharger shall use the following interim cleanup levels for the purpose of conducting remedial investigation and any required remedial actions. The following interim groundwater cleanup levels shall be met in all wells located on the Site:

Interim Groundwater Cleanup Levels

Constituent	Level (µg/l)	Basis
Perchlorate	6	California primary maximum contaminant level (MCL)
1,1-DCE	6	California MCL
1,1-DCA	5	California MCL

Note: The interim groundwater cleanup levels selected from the California primary MCLs.

b) **Interim Soil Cleanup Levels**: The interim soil cleanup levels for the Site and downgradient properties are intended to protect against human health risk (direct contact and outdoor air exposure) and migration of perchlorate and VOCs. The interim soil cleanup levels are selected from the Regional Water Board's 2016 ESLs. The Dischargers may propose site-specific soil cleanup levels for Executive Officer concurrence. The following interim soil cleanup levels shall be met in all Site and Nurse Slough Property soils:

Interim Soil Cleanup Levels

Constituent	Level (mg/kg)	Basis
Perchlorate	55	Regional Water Board 2016 ESLs
1,1-DCE	94	Regional Water Board 2016 ESLs

Note: The interim soil cleanup levels selected from the 2016 ESLs, *Summary of Soil ESLs, Residential Shallow Soil Exposure*

C. TASKS

1. **Stormwater Monitoring Plan:** The UTC property (525 acres) is currently enrolled in the State Water Board's General Permit for Storm Water Discharges Associated with Industrial Activities. The Dischargers must prepare a site-specific SWPPP for the ELA and Nurse Slough properties. The Dischargers shall reference the best management practices and requirements in the State

Water Board's General Storm Water Permits for Construction and Industrial Activities, as applicable. This task is needed to prevent potential migration of perchlorate in stormwater.

Contingent upon stormwater sampling analytical results, a Notice of Intent to comply with one of the State Water Board's General Storm Water Permits may be required, as communicated by Regional Water Board staff.

Compliance Date: **Within 30 days of receipt of final Order**

2. **Water Supply Well Management Plan:** The Dischargers shall submit a management plan, acceptable to the Executive Officer, that presents a plan for long-term management of the water supply to the residences, including the vacated residence and the Stolte Duck Club on and east of the Nurse Slough property. Currently potable water at the vacated residence and the Stolte Duck Club is supplied by water supply wells on the Nurse Slough property. The management plan shall include measures that will be undertaken to ensure that the water supplied to the residences and Stolte Duck Club is safe for human consumption (does not contain perchlorate or VOCs above California MCLs). The management plan shall include engineering and/or institutional controls, such as groundwater monitoring, and contingencies to be implemented if perchlorate or VOCs are detected, such as well-head protection, deed restrictions, or other alternatives that will ensure the protection of human health.

   Compliance Date: **Within 30 days of receipt of final Order**

3. **Data Gap Investigation Work Plan:** The Dischargers shall submit a technical work plan, acceptable to the Executive Officer, that presents a work plan for the ELA and Nurse Slough property that describes an investigation to collect information needed to fill data gaps identified in the 2015 Off-Site Perchlorate Investigation Report of Findings submitted December 9, 2015, and in the Regional Water Board's April 5, 2016, comments on this report. The work plan will detail soil and groundwater investigation activities proposed to delineate the lateral and vertical extent of COCs present in potential source area(s) on the ELA, downgradient on the Nurse Slough property, and beyond to the adjacent properties owned by Stolte Farms to the east and south or Tule Livestock Company to the southwest, as appropriate.

   Compliance Date: **May 1, 2017**

4. **Data Gap Investigation Technical Report:** The Dischargers shall submit a technical report, acceptable to the Executive Officer, that presents investigation findings for the Data Gap Investigation described in Task 3. The additional investigation shall be conducted in accordance with the above work plan approved by Regional Water Board staff. The report shall include a description of geologic conditions encountered, contaminant concentrations, and recommendations required to assess risk to receptors on the Site, including at the seasonal duck club, and to the adjacent wetlands.

   Compliance Date: **March 31, 2018**

5. **Risk Assessment Work Plan:** The Dischargers shall submit a work plan, acceptable to the Executive Officer, for the preparation of a site-specific risk assessment and site-specific cleanup levels for groundwater in the ELA and downgradient. The work plan shall include a conceptual site model (CSM) (i.e., identify pathways and receptors where the Site's contaminants pose a potential threat to human health, safety, or the environment).

Compliance Date: **April 30, 2018**

6. **Risk Assessment Report:** The Dischargers shall submit a technical report, acceptable to the Executive Officer, that contains an updated human and ecological health risk assessment for receptor pathways identified in Task 5 for the ELA and downgradient, a detailed discussion of updated CSM elements, and site-specific cleanup levels for groundwater, if the Dischargers wish to propose levels other than those required in this Order.

   Compliance Date: **October 26, 2018**

7. **Corrective Action Plan (CAP):** In the event the Executive Officer determines, following review of the Risk Assessment Report, that remedial action(s) will be required to achieve appropriate cleanup goals for the Site, the Discharger shall submit a technical report acceptable to the Executive Officer containing a feasibility study evaluating remedial options and the selection of proposed remedial action(s) for all impacted properties identified in tasks 3 and 4 including:

   i) Projections of cost, effectiveness, benefits, and impacts on public health, safety, and the environment for each remedial alternative;

   ii) A plan that ensures no additional contaminated groundwater migrates offsite to the wetlands;

   iii) Recommended final remedial actions; and

   iv) Proposed tasks and a time schedule for implementation.

   The feasibility study, item 7.i above, shall be consistent with the guidance provided by Subpart F of the National Oil and Hazardous Substances Pollution Contingency Plan (40 C.F.R. § 300), CERCLA guidance documents with respect to remedial investigations and feasibility studies, Health and Safety Code section 25356.1(c), and State Water Board Resolution No. 92-49 as amended ("Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304").

   Compliance Date: **March 30, 2019**

8. **Corrective Action Implementation Report:** The Dischargers shall submit a technical report, if deemed necessary pursuant to Section D.7 above, acceptable to the Executive Officer documenting completion of implementation of the final remedial action(s) selected in Task 7 - CAP. For ongoing actions, such as groundwater extraction, the report shall document system startup (as opposed to completion) and shall present initial system effectiveness results (e.g., capture zone or area of influence). Proposals for further system expansion or modification may be included in annual reports (see Self-Monitoring Program).

   Compliance Date: **September 30, 2019**

9. **Corrective Action Completion Status Reports:** The Dischargers shall submit a technical report, if deemed necessary pursuant to Section D.7 above, acceptable to the Executive Officer documenting the completion of necessary tasks identified in Task 7 - CAP. The reports shall present the completion of the remedial actions implemented to eliminate current and future potential exposure to concentrations above site specific cleanup levels required by Task 6. The reports shall demonstrate an understanding of the extent of any COCs remaining in groundwater. The reports shall provide a detailed discussion of any instances of implementation actions failing

to meet the Task 7 requirements, including an assessment of any potential human health or environmental effects resulting from these shortfalls. The report may be combined with a self-monitoring report, provided that the report title clearly indicates its scope. The report may propose changes to the CAP acceptable to the Executive Officer, as necessary, to better evaluate remedial action effectiveness.

Compliance Date: **December 31, annually**

10. **Optimization of Monitoring Well Network and Revised Self-Monitoring Program:** The Dischargers shall submit a technical report, acceptable to the Executive Officer, that evaluates and optimizes the location, condition, and effectiveness of all monitoring wells that comprise the Site groundwater monitoring network. The evaluation shall consider well location, total well depth, screen interval, as well as the total number and spatial distribution of wells in terms of providing adequate monitoring data for plume monitoring and remediation effectiveness evaluation. The report shall: 1) propose the destruction, repair, and/or replacement of any wells that are damaged, improperly screened, or poorly located; 2) propose the construction of any new wells necessary to provide sufficient monitoring data needed to adequately perform the tasks specified in this Order; and 3) present a revised, detailed Self-Monitoring Program for the Site.

Compliance Date: **May 29, 2020**

11. **Evaluation of New Technical Information:** When requested, the Dischargers shall submit a technical report acceptable to the Executive Officer evaluating new technical information that bears on the approved corrective action plan and cleanup levels for the Site. In the case of a new cleanup technology, the report shall evaluate the technology using the same criteria used in the feasibility study. Such technical reports will not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved CAP or cleanup levels.

Compliance Date: **90 days after requested by Executive Officer**

12. **Delayed Compliance**: If the Dischargers are delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the Dischargers shall promptly notify the Executive Officer.

D. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in CWC section 13050(m).

2. **Operations and Maintenance**: The Dischargers shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Construction Stormwater:** For any proposed grading or development project greater than one acre in size, the Dischargers shall submit a Notice of Intent to the State Water Board, submit a SWPPP acceptable to the Executive Officer, and implement best management practices for the control of stormwater in accordance with requirements specified in the State Water Board's General Permit for Storm Water Discharges Associated with Construction Activities Order No. 2009-0009-DWQ. The Dischargers will be deemed in compliance with this provision if another

party constructing improvements on property owned by the Dischargers, pursuant to an easement granted by the Dischargers, has obtained coverage under the General Permit.

4. **Cost Recovery**: The Dischargers are liable, pursuant to CWC section 13304, to the Regional Water Board for all reasonable costs incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that reimbursement program. Any disputes raised by the Dischargers over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

5. **Access to Site and Records**: The Dischargers shall permit the Regional Water Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order;
   b. Access to copy any records required to be kept under the requirements of this Order;
   c. Inspection of any monitoring or remediation facilities installed in response to this Order; and
   d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Dischargers.

6. **Contractor / Consultant Qualifications**: All technical documents shall be signed by and stamped with the seal of a California-registered geologist, a California-certified engineering geologist, or a California-registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved U.S. EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control records for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed onsite (e.g., temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the following agencies, and the Executive Officer may modify this list as needed:

   a) Regional Water Board
      Yemia Hashimoto
      1515 Clay Street, Suite 1400
      Oakland, CA 94612

   b) U.S. Environmental Protection Agency, Region IX
      Nadia Hollan Burke
      75 Hawthorne Street
      San Francisco, CA 94105-3972

   c) Department of Toxic Substances Control
      Ben Fries
      8800 Cal Center Drive
      Sacramento, CA 95826-3268

d) Department of the Air Force
Glenn Anderson
550 Hickam Avenue, Building 248
Travis AFB, CA 94535-2100

e) Solano County Department of Environmental Management
Matthew Geisert
601 Texas Street
Fairfield, CA 94533

9. **Electronic Reporting:** All reports submitted pursuant to this Order shall be submitted as paper copies and electronic files in PDF format. The Regional Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Regional Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures & tables.

   Upon request by Regional Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format. This format facilitates data computations and/or plotting that Regional Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review as long as a PDF version is included.

   All electronic files shall be submitted via the Regional Water Board's Geotracker website, email (only if the file size is less than 10 MB), or on CD. CD submittals may be included with a print report. Email notification shall be provided to Regional Water Board staff whenever a file is uploaded to Geotracker.

10. **Reporting of Changed Owner or Operator**: The Dischargers shall file a technical report on any changes in Site occupancy or ownership associated with the properties described in this Order. The Order will be amended upon change of Site ownership.

11. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Dischargers shall report such discharge to the Regional Water Board by calling (510) 622-2369. The Dischargers shall notify the caseworker, currently Yemia Hashimoto at (510) 622-2756, and the Office of Emergency Services (OES) at (916) 845-8510.

    A written report shall be filed with the Regional Water Board within five working days. The report shall describe the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified. This reporting is in addition to the reporting to OES required pursuant to the Health and Safety Code.

12. **Implementation of Self-Monitoring Program**: The Discharger shall implement the Self-Monitoring Program attached to this Order, which may be revised by the Executive Officer when

wells are no longer needed in the program (i.e., concentrations of COCs are below interim site cleanup objectives for a sufficient time frame) or when additional investigation and monitoring is warranted to adequately monitor the plume extent.

13. **Rescission of Existing Orders**: This Order supersedes and rescinds Order No. R2-2002-0103 and Order No. R2-2003-0070, except for enforcement purposes.

14. **Periodic SCR Review**: The Regional Water Board will review this Order periodically and may revise it when necessary.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on March 31, 2017.

Digitally signed by Bruce H. Wolfe
Date: 2017.03.31 16:00:35 -07'00'

Bruce H. Wolfe
Executive Officer

Attachments: Self-Monitoring Program
Figure 1: Site Location Map
Figure 2: Site Layout
Figure 3: East Launch Area and Nurse Slough Property Groundwater Monitoring Well and Water Supply Well Locations
Figure 4: Main Area Groundwater Monitoring Well Locations
Figure 5: Stormwater Sampling Locations

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for ORDER NO. R2-2017-0005 for:

OEA AEROSPACE, INC.,
OEA, INC.,
UNITED TECHNOLOGIES CORPORATION, and
UNITED STATES DEPARTMENT OF THE AIR FORCE

for the property located at:

3530 BRANSCOMBE ROAD
FAIRFIELD, SOLANO COUNTY

1. **Authority and Purpose**: The Regional Water Board requests the technical reports required in this Self-Monitoring Program (SMP) pursuant to CWC sections 13267 and 13304. This SMP is intended to document compliance with Order No. R2-2017-0005.

2. **Monitoring Requirements**: The Dischargers shall perform monitoring (water level measurement, observations, and analytical sampling) according to the following table (See Figures 3 and 4 for well locations):

Well #	Sampling Frequency	Analyses
Main area: CDM-1, CDM-2, CDM-5, CDM-6	SA	VOCs by 8260B
ELA, including the former Nurse Slough property: All wells, cistern, and any newly installed wells	SA	Perchlorate by 6850
ELA, including the former Nurse Slough property: CDM-10, CDM-11, CDM-16, CDM-18 through CDM-23, and any newly installed wells, as specified.	SA	VOCs by 8260B
ELA, including the former Nurse Slough property: downgradient water supply wells OSW#1, OSW#2, and OSW#3	A	Perchlorate by 6850 and VOCs by 8260B

Notes: SA = Semi-Annually (March & September) ; A = Annually (March)
6850 = U.S. EPA method 6850 or equivalent for perchlorate
8260B = U.S. EPA method 8260B or equivalent for VOCs

The Dischargers shall measure groundwater elevation semi-annually in all monitoring wells (May and November).

The Dischargers may propose changes in the above table; any proposed changes are subject to Executive Officer approval.

Stormwater Sampling: As required by Task 1 above, the Dischargers shall produce a SWPPP and monitoring plan to collect and analyze stormwater samples representative of all stormwater leaving the Site. UTC is currently enrolled and is, and shall continue to, collecting and analyzing stormwater

samples from sample points identified as SM-1, SM-2, SM-4, SM-5, and SM-6 as shown in Figure 5 and analyze for constituents listed in the Industrial Activity Order 2-14-0057-DWQ, listed as total suspended solids (TSS), pH, and oil and grease. UTC shall also include perchlorate analysis. The Dischargers shall provide a copy of the stormwater monitoring reports to Yemia Hashimoto or the current caseworker at the Regional Water Board.

3. **Reporting Requirements:** The Dischargers shall submit self-monitoring reports (SMRs) to Regional Water Board staff in accordance with the following schedule. Reports due at the same time may be combined into one report for convenience, after conferring with Regional Water Board staff, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

Reporting Frequency	Report Due Dates
Annual	October 31

At a minimum, each SMR shall include the following information:

a. **Transmittal Letter**: A cover letter transmitting the essential points shall be included with each SMR. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements and shall be signed by and stamped with the seal of a California-registered geologist, a California-certified engineering geologist, or a California-registered civil engineer. The letter shall be signed by the Dischargers' principal executive officer, or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. **Graphic Presentation**: The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:

(1) Plan-view maps showing all monitoring and sampling locations, surface water bodies, and the Site's boundaries;

(2) Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing calculated groundwater gradients and flow directions under/around the Site, based upon the present water level elevations and pertinent visual observations;

(3) Iso-concentration contour maps displaying analyte concentrations and sample locations for each constituent of concern, or an agreed-upon alternative graphical representation of the data considering the scale of the Site;

(4) Concentration vs. time graphs for key sampling parameters for select sampling locations; and

(5) Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this Order.

c. **Tabular Presentation**: The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:

(1) Well designations
(2) Well location coordinates (latitude and longitude)
(3) Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation)
(4) Groundwater depths
(5) Groundwater elevations
(6) Horizontal groundwater gradients
(7) Vertical groundwater gradients (including comparison wells from different zones) when appropriate
(8) Current analytical results (including analytical method and detection limits for each constituent)
(9) Historical analytical results (including all data, unless otherwise requested)
(10) Measurement dates
(11) Groundwater extraction, if applicable, including:
    (a) Average daily extraction rate
    (b) Total volume extracted for monitoring period
    (c) Cumulative total volume extracted since system inception
(12) Contaminant mass removal, if applicable, including:
    (a) Average daily removal rate
    (b) Total mass removed for monitoring period
    (c) Cumulative total mass removed since system inception

d. **Discussion**: Discussion of the following information, based on field and laboratory data results, shall be provided in each SMR:

(1) Data Interpretations
(2) Conclusions
(3) Recommendations
(4) Newly implemented or planned investigations & remedial measures
(5) Data anomalies
(6) Variations from protocols
(7) Condition of wells, if any problems identified during monitoring
(8) Explanation why monitoring could not be performed at any required location

e. **Appendices:** The following information shall be provided as appendices in electronic format (PDF format). Hard copies of the following information shall be submitted only if requested by Regional Water Board staff:

(1) New boring and well logs
(2) Method and time of water level measurements (field data sheets)
(3) Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity, calibration of the field equipment, pH, temperature, conductivity, and turbidity measurements, and method of disposing of the purge water
(4) Sampling procedures, field and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations

(5) Documentation of laboratory results, analytical methods, detection limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

4. **Violation Reports**: If the Dischargers violate requirements in Order No. R2-2017-0005, then the Dischargers shall notify the Regional Water Board office by telephone as soon as practicable once the Dischargers have knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Dischargers to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The Dischargers shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for Site investigation.

6. **Record Keeping and Maintenance of Written Records**: The Dischargers or their agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to Regional Water Board staff upon request. The Dischargers shall maintain written information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by Regional Water Board staff.

7. **SMP Revisions**: Revisions to this SMP may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Dischargers. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated SMRs relative to the benefits to be obtained from these reports.

8. **Electronic Reporting:** All SMRs submitted pursuant to this SMP shall be submitted as electronic files in PDF format. The Regional Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Regional Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures and tables.

   Upon request by Regional Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format. This format facilitates data computations and/or plotting that Regional Water Board staff may undertake during their review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review as long as a PDF version is included.

   All electronic files shall be submitted via the Regional Water Board's Geotracker website (http://geotracker.waterboards.ca.gov). Files may additionally be sent via email (only if the file size is less than 10 MB) or on CD. CD submittals may be included with a print report. Email notification shall be provided to Regional Water Board staff whenever a file is uploaded to Geotracker.

FIGURES