

2018 Consumer Confidence Report

Water System Name: **Lockheed Martin Space Systems Co. #4400801** Report Date: **23 JUN 19**

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 to December 31, 2018 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse Lockheed Martin Santa Cruz Water System, 16020 Empire Grade Road, Santa Cruz, California or (831)426-9005 para asistirlo en español.

Type of water source(s) in use: **Surface Water Collection: Lake/Reservoir**

Name & general location of source(s): **Mill Creek Reservoir**

Located on Lockheed Martin property at 16020 Empire Grade Road, Santa Cruz, California

Drinking Water Source Assessment information: The LMS-SCF water system is maintained and monitored solely for the constituents associated with the operations and functions of the site and is considered "Non Vulnerable". A certified Sanitary Survey was completed in 1995 for the last major modification to the SCF water treatment center.

Time and place of regularly scheduled board meetings for public participation: No scheduled meetings – customer communications provided via ad hoc all hand meetings (typically quarterly) and informational updates delivered via email as needed

For more information, contact: **Tim McNulty**

Phone: **(831) 425-6009**

TERMS USED IN THIS REPORT

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (U.S. EPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Variances and Exemptions: Permissions from the State Water Resources Control Board (State Board) to exceed an MCL or not comply with a treatment technique under certain conditions.

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

ND: not detectable at testing limit

MFL: million fibers per liter

NTU: Nephelometric Turbidity Units

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. EPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1, 2, 3, 4, 5, and 6 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old. Any violation of an AL, MCL, MRDL, or TT is highlighted. Additional information regarding the violation is provided later in this report.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of Months in Violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria (state Total Coliform Rule)	0	0	1 positive monthly sample	<1.0	Naturally present in the environment
Fecal Coliform or <i>E. coli</i> (state Total Coliform Rule)	0	0	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or <i>E. coli</i> positive	<1.0	Human and animal fecal waste
<i>E. coli</i> (federal Revised Total Coliform Rule)	0	0	(a)	<1.0	Human and animal fecal waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	Sample Date	No. of Samples Collected	90 th Percentile Level Detected	No. Sites Exceeding AL	AL	PHG	No. of Schools Requesting Lead Sampling	Typical Source of Contaminant
Lead (ppb)	8 OCT 18	5	ND	0	15	0.2		Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	8 OCT 18	5	ND	0	1.3	0.3	Not applicable	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	10/09/2017	9.9 mg/L (source water)	9.9-12	None	None	Salt present in the water and is generally naturally occurring
Hardness (ppm)	10/09/2017	52 mg/L (source water)	43-52	None	None	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring

*The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
GROSS ALPHA PARTICLE ACTIVITY (pCi/L)	2017	0.835	0.098-0.835	15	0	Erosion of natural deposits
TOTAL RADIUM (pCi/L)	2017	0.322	0-0.322	5	N/A	Erosion of natural deposits
ALUMINUM (mg/L)	2018	0.025	0.025	1	0.6	Erosion of natural deposits; residue from some surface water treatment processes
ANTIMONY (ug/L)	2018	0.5	0.5	6	1	Discharge from petroleum refineries; fire retardants; ceramics; electronics solder
ARSENIC (ug/L)	2018	0.6	0.6	10	0.004	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes
ASBESTOS (MFL)	2017	0	0	7	7	Decay of asbestos cement in water mains; erosion of natural deposits
BARIUM (mg/L)	2018	0.036	0.036	2	1	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
BERYLLIUM (ug/L)	2018	1	1	4	1	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
CADMIUM (ug/L)	2018	0.4	0.4	5	0.04	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
CHROMIUM (TOTAL) (ug/L)	2018	0.4	0.4	50	100	Discharge from steel and pulp mills; erosion of natural deposits
CYANIDE (ug/L)	2018	50	50	150	150	Discharge from steel/metal factories; discharge from plastics and fertilizer factories
FLUORIDE (F) (NATURAL-SOURCE) (mg/L)	2018	0.14	0.14	2	1	Erosion of natural deposits; discharge from fertilizer and aluminum factories
MERCURY (ug/L)	2018	0.05	0.05	2	1.2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and croplands
NICKEL (ug/L)	2018	5	5	100	12	Erosion of natural deposits; discharge from metal factories
NITRATE (MEASURED AS NITROGEN) (mg/L)	2018	0.1	0.1	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits

NITRITE (MEASURED AS NITROGEN) (mg/L)	2018	0.1	0.1	1	1	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
PERCHLORATE (ug/L)	2018	0	0	6	1	Used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries; discharge from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts.
SELENIUM (ug/L)	2018	0.5	0.5	50	30	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
THALLIUM (ug/L)	2018	0.4	0.4	2	0.1	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
1,2,3-TRICHLOROPROPANE (1,2,3-TCP) (ug/L)	Quarterly 2018	ND	ND	0.005	0.0007	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.
CARBOFURAN (ug/L)	2013	5	5	18	0.7	Leaching from soil fumigant used on rice and alfalfa, and grape vineyards
HALOACETIC ACIDS (5) (HAA5) (ug/L)	2018	46	4.8-46	60	N/A	Byproduct of drinking water disinfection
TOTAL TRIHALOMETHANES (ug/L)	15 AUG 18 and 14 NOV 18	130	52-130	80	N/A	Byproduct of drinking water disinfection

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TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	SMCL	PHG (MCLG)	Typical Source of Contaminant
ALUMINUM (ug/L)	2018	25	25	200	N/A	Erosion of natural deposits; residue from some surface water treatment processes
CHLORIDE (mg/L)	2017	13	13	500	N/A	Runoff/leaching from natural deposits; seawater influence
COLOR (units)	2017	4	4	15	N/A	Naturally occurring organic materials
FOAMING AGENTS (MBAS) (ug/L)	2018	0.025	0.025	500	N/A	Municipal and industrial waste discharges
IRON (ug/L)	2017	71	71	300	N/A	Leaching from natural deposits; industrial wastes
MANGANESE (ug/L)	2017	24	24	50	N/A	Leaching from natural deposits
ODOR THRESHOLD @ 60 C (units)	2017	1	1	3	N/A	Naturally occurring organic materials
SILVER (ug/L)	2018	0.2	0.2	100	N/A	Industrial discharges
SPECIFIC CONDUCTANCE (uS/cm)	2018	130	130	1600	N/A	Substances that form ions when in water; seawater influence
SULFATE (mg/L)	2017	7	7	500	N/A	Runoff/leaching from natural deposits; industrial wastes
TOTAL DISSOLVED SOLIDS (mg/L)	2017	95	95	1000	N/A	Runoff/leaching from natural deposits

TURBIDITY, LABORATORY (NTU)	2018	4.5	0.3-4.5	5	N/A	Soil Runoff
ZINC (mg/L)	2018	0.033	0.033	5	N/A	Runoff leaching from natural deposits; industrial wastes

*The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
BORON (mg/L)	2018	0.02	0.02	1.0	Boron exposures resulted in decreased fetal weight (developmental effects) in newborn rats.

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Lead-Specific Language: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Lockheed Martin Water System #4400801 is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. [**OPTIONAL:** If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.] If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/lead>.

Unregulated Contaminants: Boron is a non-metallic, naturally-occurring, element found in rocks, soil, and water. Boron compounds are used primarily in the production of glass and ceramics, pesticides, fire retardants, plus insulation-grade- and textile-grade-glass fibers. Boron can be present in commercial plant foods and fertilizers and are often found in household laundry and cleaning products. Boron contamination in water can come directly from industrial waste water and municipal sewage, as well as indirectly from air deposition and soil runoff. The federal government does not regulate boron in drinking water, but the state of California requires public drinking water systems to monitor for the contaminant and notify consumers if the contaminant exceeds the notification level (NL).

For Systems Providing Surface Water as a Source of Drinking Water

TABLE 8 - SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES

Treatment Technique ^(a) (Type of approved filtration technology used)	Direct Media Filtration
Turbidity Performance Standards ^(b) (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to 0.20 NTU in 95% of measurements in a month.

	2 – Not exceed 0.20 NTU for more than eight consecutive hours. 3 – Not exceed 0.20 NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	All samples met TPS No. 1; 100% is the lowest monthly percentage of operating sample test results
Highest single turbidity measurement during the year	0.189 NTU on 2 JUN 18
Number of violations of any surface water treatment requirements	2 (total trihalomethane concentrations exceeded the MCL at one location). Operation Evaluation (OE) has been completed which demonstrates the successful reduction in trihalomethane concentrations through a combination of pipeline flushing and reduction in chlorine concentration at the treatment plant. Sampling frequency for trihalomethane has been increased to quarterly to more closely monitor compliance with the trihalomethane MCL.

- (a) A required process intended to reduce the level of a contaminant in drinking water.
- (b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

Trihalomethanes (THMs) are a group of organic chemicals that often occur in drinking water as a result of chlorine treatment for disinfectant purposes and, therefore, are also known as "disinfection byproducts" or DBPs. THMs are formed when chlorine reacts with naturally occurring organic material found in water such as decaying vegetation. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.

Summary Information for Violation of a Surface Water TT

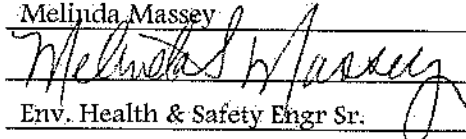
VIOLATION OF A SURFACE WATER TT				
TT Violation	Explanation	Duration	Actions Taken to Correct the Violation	Health Effects Language
Compliance Order No. 02-05-17R-004	Inadequate pre-treatment (Flocculation) for direct filter water treatment system	Compliance Order issued 8/3/2017 – ECD for completion of modifications is 12/31/2019	Submitted draft copy of notifications to SWRCB and delivered customer notifications; contracted with design engineer for modifications; delivered Corrective Action Plan to SWRCB; Capital Expense project initiated to perform design and build action items.	No adverse health effects due to this Compliance Order of pre-treatment requirements.

Summary Information for Operating Under a Variance or Exemption

Surface water treatment lacks appropriate flocculation process for direct filtration system. Compliance order issued requires LMS-SCF to distribute quarterly compliance updates to the customer base. Schedule is on track and active for notifications. LMS-SCF contracted with consultant for a treatment design plan to be delivered to the CA SWRCB; plan has been approved. A Capital Expense project is approved and LMS awarded the prime design/build contract to Bay Area Builders for implementation of the new treatment center. SWRCB requires new system to be completed prior to 12/31/2019. Contractor on track for a 12/15/19 completion. **Water quality sampling and lab analyses for bacteriological presence demonstrate that the water treatment plant is producing water quality that meets State criteria for drinking water for human consumption for bacteriological testing.**

**Consumer Confidence Report
Certification Form***(To be submitted with a copy of the CCR)*Water System Name: Lockheed Martin Space Systems Co.Water System Number: #4400801

The water system named above hereby certifies that its Consumer Confidence Report was distributed on July 1, 2019 to customers (and appropriate notices of availability have been given). Further, the system certifies that the information contained in the report is correct and consistent with the compliance monitoring data previously submitted to the State Water Resources Control Board, Division of Drinking Water (DDW).

Certified by: Name: Melinda Massey
Signature: 
Title: Env. Health & Safety Engr Sr.
Phone Number: (408) 742-5552 Date: 7/1/19

To summarize report delivery used and good-faith efforts taken, please complete this page by checking all items that apply and fill-in where appropriate:

- ☐ CCR was distributed by mail or other direct delivery methods (attach description of other direct delivery methods used).
- ☒ CCR was distributed using electronic delivery methods described in the Guidance for Electronic Delivery of the Consumer Confidence Report (water systems utilizing electronic delivery methods must complete the second page).
- ☒ "Good faith" efforts were used to reach non-bill paying consumers. Those efforts included the following methods:
- ☒ Posting the CCR at the following URL: (intranet location)
<https://space-internalus.p.external.linco.com/sites/sscesh/Pages/Home.aspx>
 - ☐ Mailing the CCR to postal patrons within the service area (attach zip codes used)
 - ☐ Advertising the availability of the CCR in news media (attach copy of press release)
 - ☐ Publication of the CCR in a local newspaper of general circulation (attach a copy of the published notice, including name of newspaper and date published)
 - ☒ Posted the CCR in public places (attach a list of locations) Bldg. notification boards and/or break rooms
 - ☐ Delivery of multiple copies of CCR to single-billed addresses serving several persons, such as apartments, businesses, and schools
 - ☐ Delivery to community organizations (attach a list of organizations)
 - ☐ Publication of the CCR in the electronic city newsletter or electronic community newsletter or listserv (attach a copy of the article or notice)
 - ☐ Electronic announcement of CCR availability via social media outlets (attach list of social media outlets utilized)
 - ☒ Other (attach a list of other methods used) Intranet - Santa Cruz Sharepoint website
- ☐ For systems serving at least 100,000 persons: Posted CCR on a publicly-accessible internet site at the following URL: www.
- ☐ For privately-owned utilities: Delivered the CCR to the California Public Utilities Commission

Water systems utilizing electronic distribution methods for CCR delivery must complete this page by checking all items that apply and fill-in where appropriate.

- Provide a brief description of the water system's electronic delivery procedures and include how the water system ensures delivery to customers unable to receive electronic delivery.

[illegible]