

# **OLYMPIC WELL FIELD DRINKING WATER SOURCE PROTECTION PLAN**

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# Contents

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List of Figures..... ii  
 List of Acronyms and Abbreviations..... iii

	<b>Page</b>
<b>Section 1 Purpose and Need .....</b>	<b>1-1</b>
<b>Section 2 Background.....</b>	<b>2-1</b>
2.1    Olympic Well Field .....	2-1
2.2    Historical Land Use .....	2-1
2.3    Overview of Source Water Contamination Assessment.....	2-2
2.4    Principal Contaminant Sources .....	2-2
<b>Section 3 Protection Plan Elements .....</b>	<b>3-1</b>
3.1    Dedicated Enforcement Staff.....	3-1
3.2    Designated Aquifer Protection Zone .....	3-1
3.3    Existing Monitoring Well Network.....	3-2
3.4    Long-Term Quarterly Groundwater Monitoring.....	3-3
3.5    Adaptive Well Field Management .....	3-3
3.5.1    Groundwater Flow and Transport Model .....	3-3
3.5.2    Observation and Response Actions .....	3-4
3.6    Industrial Use Discharge Permitting .....	3-4
3.6.1    Industrial Use Program .....	3-5
3.6.2    Outreach and Education .....	3-6
3.7    Zoning and Land Use.....	3-7
<b>Section 4 Conclusion .....</b>	<b>4-1</b>
<b>Section 5 References Cited .....</b>	<b>5-1</b>

# Figures

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<b>Figure</b>		<b>Follows Page</b>
1	Olympic Subbasin Location Map .....	2-2
2	Site Location Map .....	2-2
3	Former Manufacturing Facilities.....	3-2
4	Aquifer Protection Zone .....	3-2
5	Land Use and Estimated Pumping Radius of Influence .....	3-8

## Acronyms and Abbreviations

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APZ	aquifer protection zone
Boeing	Boeing Company
CAO	cleanup and abatement order
City	City of Santa Monica
DDW	Division of Drinking Water
Douglas	Douglas Aircraft
Gillette	Gillette Company
IWP	industrial wastewater permit
LA-RWQCB	Los Angeles – Regional Water Quality Control Board
OSE	Office of Sustainability and Environment
PCE	perchloroethene
SIU	significant industrial user
TCE	trichloroethene
VOC	volatile organic compound

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# Section 1

## Purpose and Need

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ICF has prepared this Drinking Water Source Protection Plan for the Olympic Well Field on behalf of the City of Santa Monica (the City). This plan is intended to address Step 3 in the Division of Drinking Water (DDW) updated 97-005 permitting process. Planned modifications to the City's Arcadia Water Treatment Plant and the installation of new groundwater production wells in the Olympic Well Field has triggered the need for the 97-005 permit.

The City has submitted a Drinking Water Source and Contamination Report to meet Step 1 of the updated 97-005 (ICF 2020) policy. Step 2 of the 97-005 process, Full Raw Water Quality Characterization, will be submitted under separate cover.

Drinking water source protection is an integral consideration of ensuring that high quality water is delivered to the residents of Santa Monica. The City has a long history of responsible stewardship in the management of water resources in the Charnock, Arcadia, and Olympic subbasins, all of which contribute water to its overall water portfolio.

This plan specifically discusses the drinking water source protection measures in place within the Olympic Well Field. This plan includes the following:

- Section 2: Background
- Section 3: Protection Plan Elements
- Section 4: Conclusion

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This section provides a background on the Olympic Well Field area, including a description of the well field, past and current land use, a summary of contamination and contaminant sources. Details on the source and contamination assessment was provided under separate cover (ICF 2020).

### 2.1 Olympic Well Field

The Olympic Well Field lies within the Olympic subbasin of the Santa Monica Basin. The Santa Monica Basin consists of the five subbasins: Olympic, Coastal, Charnock, Arcadia, and Crestal (Figure 1). The Olympic Well Field consists of three groundwater production wells: SM-8, SM-4, and SM-9 (Figure 2). Production wells SM-8 and SM-9 are new wells which are subject to the 97-005 process and will not be brought into production until receipt of the DDW 97-005 permit. SM-4 is a permitted production well and is presently in operation. SM-3 is also a permitted active production well, which will be replaced by SM-9 once approved.

The estimated pumping radius of influence of the well field when SM-3 and SM-4 were pumping at their maximum combined capacity of approximately 1,600 gallons per minute is shown on Figure 2. The pumping radius of influence extends into the adjacent Coastal subbasin, which is located south of the Olympic subbasin (Figure 1). Currently, the City does not produce groundwater from the Coastal subbasin.

### 2.2 Historical Land Use

The Olympic Well Field lies within a former industrial corridor that burgeoned post World War II. Most of the industrial businesses were located north and south of Olympic Boulevard between 26<sup>th</sup> Street to the west and Bundy to the east (Figure 3). These businesses included companies that manufactured aircraft components, household equipment (e.g., refrigerators), and writing utensils (pens). Since many of these companies operated prior to the establishment of hazardous waste use and disposal regulations, unauthorized releases of contaminants occurred to the soil and groundwater.

Since the early 2000s there has been a dramatic shift in land use in the Olympic Well Field area. Former manufacturing facilities, such as Gillette/Papermate, Boeing, and American Appliance have been closed and sold to commercial development companies who are either building new space for offices or re-purposing existing warehouses, etc., into office space. Current land use and zoning plans are discussed in Section 3.7.

## 2.3 Overview of Source Water Contamination Assessment

A drinking water source and contamination assessment report was prepared for DDW (ICF 2020). This report provided a detailed account of historical releases of the industrial contaminants and their effect on groundwater resources in the Olympic Well Field. Unlike some areas that do not have an extensive program of monitoring releases, the City has proactively tracked, assessed, and pursued entities that have released contaminants in the Olympic Well Field. This focus has enabled the City to recover expenses associated with monitoring and treating Olympic Well Field groundwater from large corporations that contaminated the well field.

## 2.4 Principal Contaminant Sources

Beginning in the early 2000s, the City commenced a rigorous process of identifying contaminant sources in the Olympic Well Field. This process became an important component of the City's Office of Sustainability and Environment (OSE) and the City's Fire Division, which is a certified unified program agency under Los Angeles-Regional Water Quality Control Board (LA-RWQCB). The City also engaged the Santa Monica City Attorney's Office to engage with consultants for the purpose of identifying contaminant sources and assessing damages to the Olympic Well Field.

The culmination of over a decade of the identification and assessment of contaminant releases led the City to enter into settlement agreements with two major corporations: the Gillette Company (Gillette) and the Boeing Company (Boeing). It should be noted that these two companies attempted to identify other potential contributors to the Olympic Well Field contamination, which principally consists of perchloroethene (PCE) and trichloroethene (TCE), as a means to reduce their financial exposure. After exhaustive work to identify other key contributors, none were found.

The principal sources of the Olympic Well Field contamination are related to former Gillette and Boeing operations. Gillette, under its Paper Mate business, manufactured writing pens at a facility located at 1621 26<sup>th</sup> Street. Gillette used the industrial solvents PCE and TCE in the manufacturing of metal tips or nose cones used in pens. The solvents were used in vapor degreasers to remove cutting oils from the tips after they were formed. Spent solvents were released from vapor degreasers and storage areas and eventually worked their way through the underlying soil column into groundwater. The *Olympic Well Field Drinking Water Source Assessment and Contamination Assessment Report* (ICF 2020) provided details on the all of the assessment work conducted, estimates of contaminant mass, and details on the remediation conducted at the former Gillette site. Operations terminated at the Gillette site in 2006. Between 2010 and 2015 soil remediation and shallow groundwater remediation occurred at the site to remove PCE and TCE. LA-RWQCB subsequently concluded that remedial activities had cleaned-up or abated contamination to assure protection of groundwater beneath the site and vicinity for its beneficial uses (LA-RWQCB, 2016) This site is now used for commercial office space and other non-industrial purposes.

Douglas Aircraft (Douglas) operated an aerospace components company (Plant A7) located at 2902 Exposition Boulevard and used the eastern and central portions of what is now known as the Bergamot Arts Center for warehousing. Douglas later merged with McDonnell Aircraft and became Douglas/McDonnell. Later, the Boeing Company acquired the assets of Douglas/McDonnell. Aircraft parts manufacturing commenced at the Plant A7 site in the mid-1940s and ceased in the early-



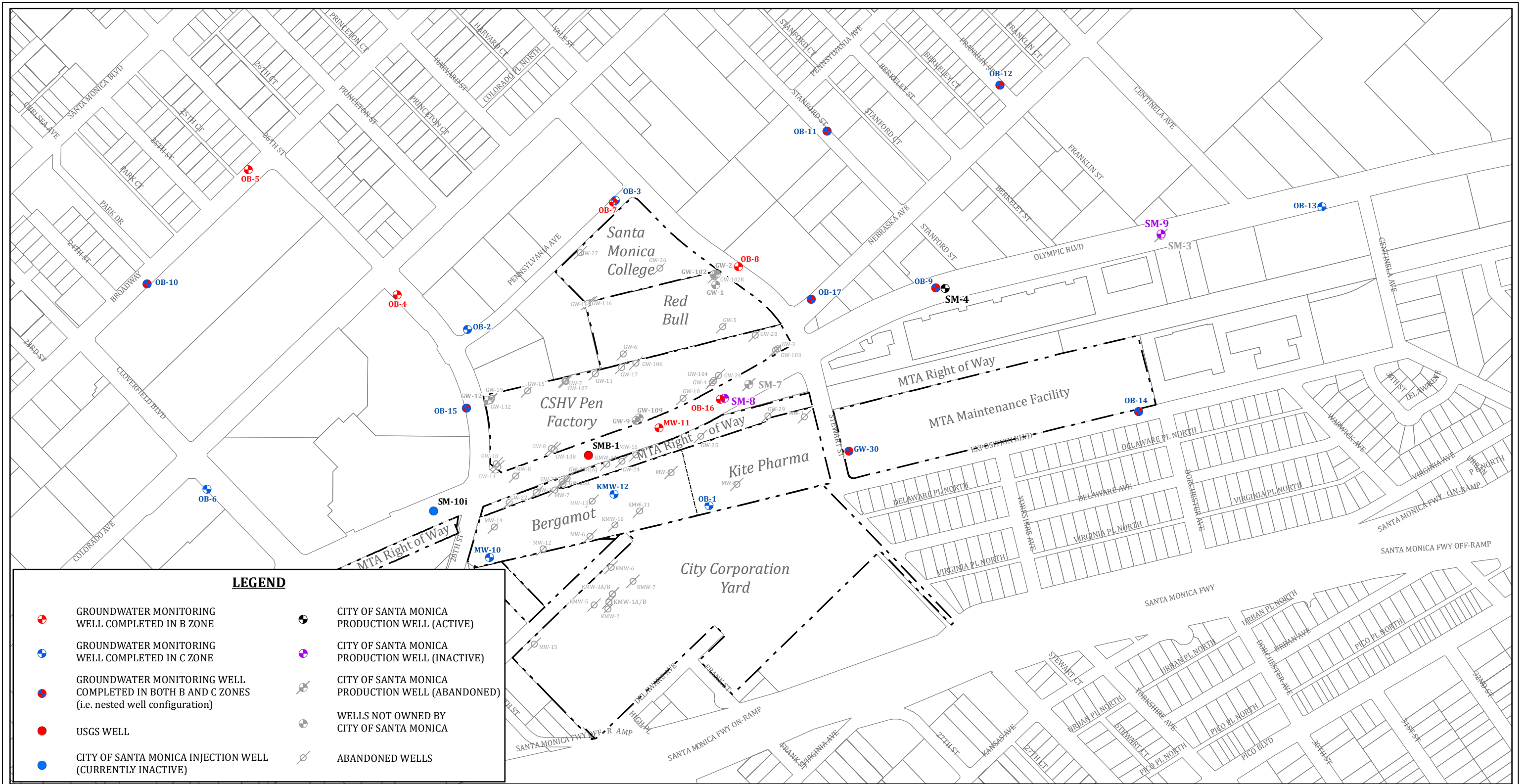
**LEGEND**

- Subbasins
- Santa Monica Basin
- Surrounding Basins

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

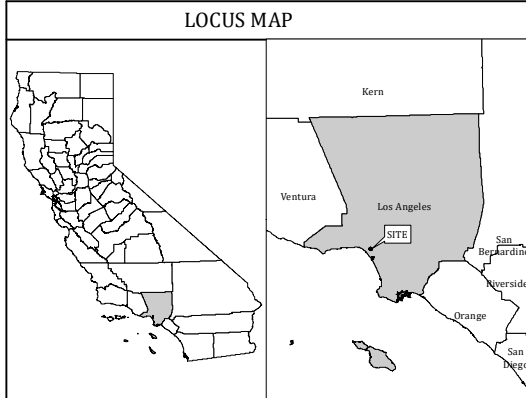
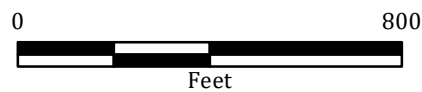
	<p style="text-align: center;">LOCUS MAP</p>	REVISIONS					TITLE		
		REV #	DATE	BY	DESCRIPTION		APPROVALS	DATE	<b>OLYMPIC SUBBASIN LOCATION MAP</b>
						G. Clendenin		PREPARED FOR <b>CITY OF SANTA MONICA</b> <b>OLYMPIC WELL FIELD</b> SANTA MONICA, CALIFORNIA	SCALE
								DATE 09/2020	PRJ. NO. 308038-07119
								SOURCE All locations approximate.	FIGURE <u>1</u> OF <u>5</u>





**LEGEND**

- GROUNDWATER MONITORING WELL COMPLETED IN B ZONE
- GROUNDWATER MONITORING WELL COMPLETED IN C ZONE
- GROUNDWATER MONITORING WELL COMPLETED IN BOTH B AND C ZONES (i.e. nested well configuration)
- USGS WELL
- CITY OF SANTA MONICA INJECTION WELL (CURRENTLY INACTIVE)
- CITY OF SANTA MONICA PRODUCTION WELL (ACTIVE)
- CITY OF SANTA MONICA PRODUCTION WELL (INACTIVE)
- CITY OF SANTA MONICA PRODUCTION WELL (ABANDONED)
- WELLS NOT OWNED BY CITY OF SANTA MONICA
- ABANDONED WELLS



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REV #	DATE	BY	DESCRIPTION



APPROVALS      DATE

TITLE	
<b>SITE LOCATION MAP</b>	
PREPARED FOR	CITY OF SANTA MONICA OLYMPIC WELL FIELD SANTA MONICA, CALIFORNIA
DATE	09/2020
SOURCE	Los Angeles County GIS web server. City of Santa Monica GIS. Portion of base map provided by AMEC and ICF. All locations approximate.
SCALE	1 inch = 400 feet
PRJ. NO.	308038-07119
FIGURE	<u>2</u> OF <u>5</u>



1970s. Douglas utilized industrial solvents in their manufacturing process. GTE acquired the property from Boeing in the early-1970s and operated a fleet refueling and maintenance facility until they sold the property to Verizon. Verizon utilized the former Plant A7 property for warehousing, vehicle maintenance, and fleet washing. Releases of fuel hydrocarbons occurred to the soil and shallow groundwater during Verizon's occupancy of the Plant A7 site. No fuel related compounds have been detected in the City's Olympic Well Field production wells. Remedial activities were conducted to remediate the fuel hydrocarbon releases. Notably, Boeing has retained obligations to address shallow groundwater VOC contamination at this site, which includes monitored natural attenuation. Boeing has not conducted a deep water-bearing zone assessment. The City, under a settlement agreement with Boeing, has assumed responsibility for monitoring potential releases in deeper water-bearing zones beneath the Plant A7 site. Much of the former Plant A7 site is now occupied by a Los Angeles County Metropolitan Transportation Authority (Metro) maintenance facility. The rest of the former Plant A7 site is now office space.

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## Section 3

# Protection Plan Elements

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This section provides the City's drinking water source protection framework for the Olympic Well Field. The individual source protection components have been in place for several years and are integrated to ensure that a robust and effective system is in place to protect Olympic Well Field groundwater quality.

### 3.1 Dedicated Enforcement Staff

The City has an integrated team of environmental and hazardous waste professionals on its staff that are dedicated to protecting groundwater quality at City's well fields (Olympic, Charnock, and Arcadia). Lisette Gold, D.Env. is the City's Environmental Remediation Coordinator. She has served in this role for 18 years and works in the City's Water Resources Division. Dr. Gold worked closely with the City's attorney's and outside consultants to develop the technical foundations of the settlement agreements with Gillette and Boeing. In her day-to-day role Dr. Gold serves as the City's point-of-contact when other City departments are notified of situations where contamination is released or threatened to be released. Dr. Gold also acts as the liaison with regulatory agencies, including LA-RWQCB and Department of Toxic Substances Control (DTSC), regarding remediation activities, and monitors progress of remediation projects within the City.

Dr. Gold also is notified by LA-RWQCB when contaminated sites that lie within or proximal to the City's well fields are directed to conduct site closure activities. This provides the City with an opportunity to review site investigation histories and determine whether a potential threat exists to City well fields. Dr. Gold is also leading the Santa Monica Groundwater Basin (SMGB) Sustainable Groundwater Management Act (SGMA) effort. Under SGMA, a groundwater sustainability plan (GSP) must be developed for the SMGB. The City is the lead agency responsible for SGMA compliance and in the development of the GSP. The City of Beverly Hills, Culver City, the County of Los Angeles, and Los Angeles Department of Water and Power (LADWP) along with the City have formed a groundwater sustainability agency (GSA) and are working together under the City's leadership to meet the SGMA regulatory requirements. Dr. Gold's involvement in the SGMA process gives her timely insight into conditions that could potentially impact water quality (and availability) not only in the Olympic sub-basin, but the other four sub-basins in the SMGB.

### 3.2 Designated Aquifer Protection Zone

The City designated an aquifer protection zone (APZ) within the Olympic Well Field (Figure 4). The APZ was developed because groundwater in the Olympic Well Field is vulnerable to surface releases of hazardous materials and a method was needed to review and control the types of activities conducted within the APZ. The APZ was initially described in the City's Contaminated Soils Management Plan (ICF 2012). The Contaminated Soils Management Plan was developed to provide administrative, procedural and analytical guidance tools to expedite and clarify the City's decisions and actions when contaminated soils are encountered on any City-owned site through Phase I or II site assessments and/or through discovery during project construction.

Additionally, under provisions set forth in cleanup and abatement orders (CAOs) and settlement and release agreements (SRAs) between the City and Gillette and the City and Boeing, the City is responsible for controlling the distribution of the dissolved-phase chemical plumes in the Olympic Well Field, groundwater monitoring, and treating any groundwater withdrawn for public use. Therefore, it is in the City's best interest to have a thorough understanding of all projects contemplated within the APZ.

Most private projects require City building permits and excavation permits. When these permits are determined to lie within the APZ and are thought by plan checkers to potentially impact groundwater, the City's Water Resources Division is notified and Dr. Gold or designated City staff then conducts a review of the project and determines if special provisions are needed to mitigate potential risks to groundwater. City-owned projects within the APZ go through a similar review process.

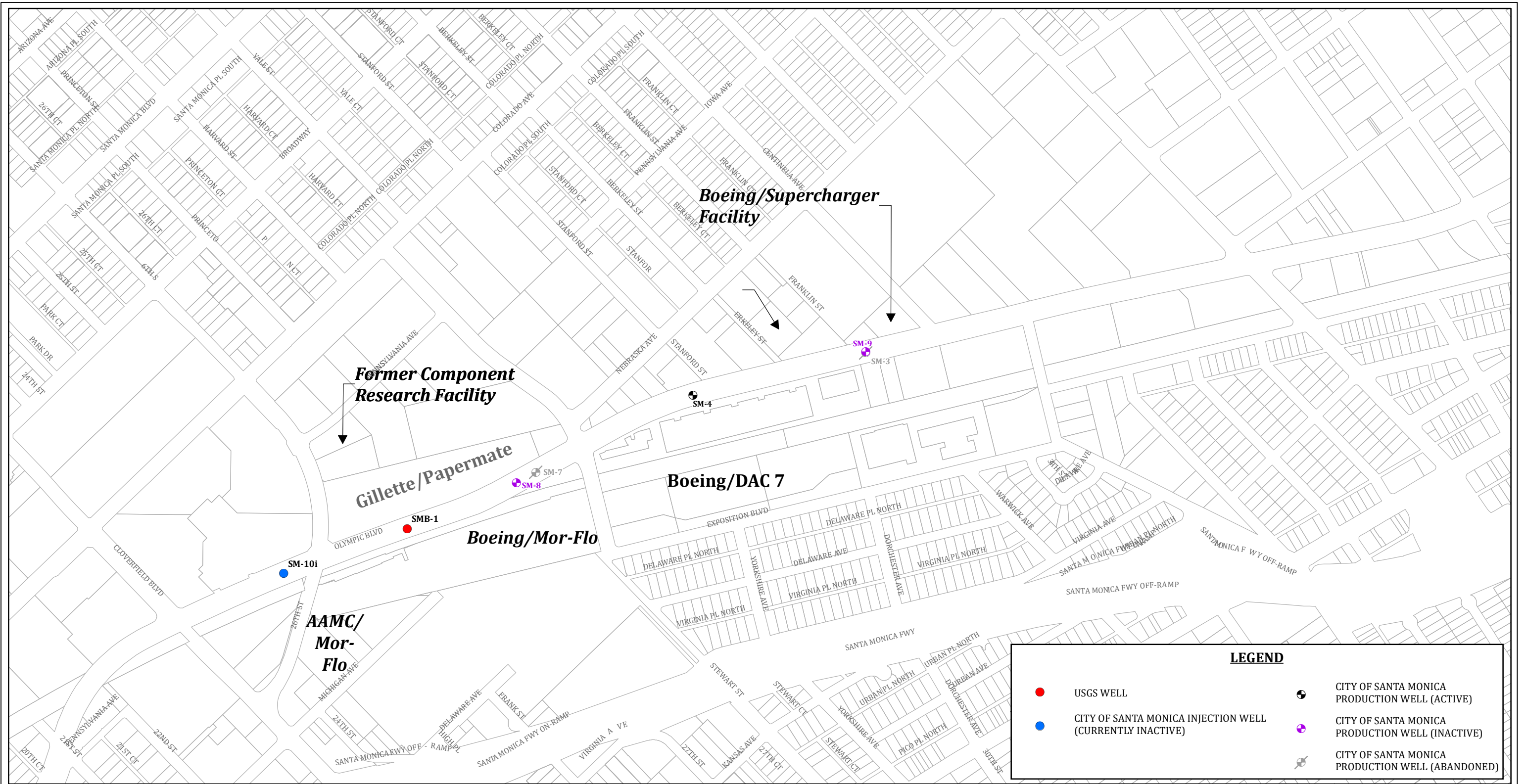
### 3.3 Existing Monitoring Well Network

Environmental site investigations have been conducted in the Olympic Well Field for three decades. Hundreds of soil borings and monitoring wells have been drilled. Thousands of soil samples and groundwater samples have been collected over this time frame. Early on this work was conducted in a somewhat piecemeal fashion; much of the work was performed under the oversight of LA-RWQCB. Monitoring wells were installed primarily to define the lateral and vertical extent of site contamination. Over time and after the review of dozens of site investigation reports it became clear to the City and LA-RWQCB that there were two major contributors of the chlorinated solvents PCE and TCE that were present in City Olympic Well Field production wells. Other sites that were under investigation were received no further action (NFA) status by LA-RWQCB. As mentioned earlier, in 2011 the City assumed responsibility of long-term groundwater monitoring and contaminated plume control per the CAO and settlement agreements with Gillette and later with Boeing.

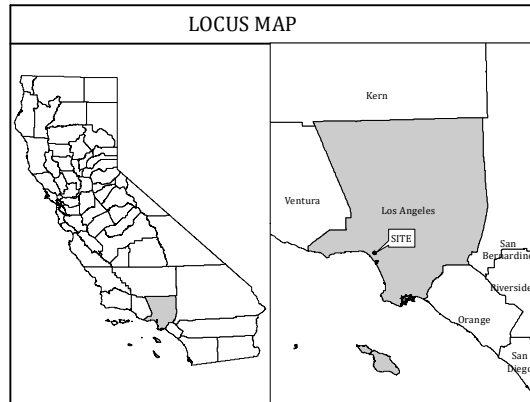
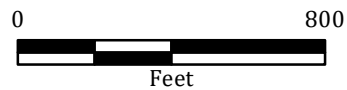
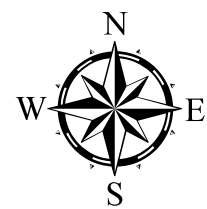
The City worked with LA-RWQCB to develop a robust monitoring well network as it took over responsibility of monitoring water quality and demonstrating plume capture in the Olympic Well Field. As the City built-out its monitoring well network it used a prefix "OB" (short for Olympic Basin) followed by a well number to identify its monitoring wells, e.g., OB-1, OB-2. Most of the wells that had been installed for the purpose of site investigation were destroyed as new wells were installed. All the City-owned wells are in public rights-of-way. The current monitoring well network is shown on Figure 2.

The monitoring wells are generally considered to be either "near-field" or "sentry" wells. Most of the near-field wells were installed by the City. All the sentry wells were installed by the City with input from LA-RWQCB to define the lateral extents of the contaminant plume. Since the sentry wells are now located on the perimeter of the plume they are used as "early warning" indicators of potential new or increasing concentrations of contaminants.

Four water-bearing zones have been encountered in the Olympic Well Field. From shallow to deep these zones include: B-Zone, C-Zone, D-Zone, and Sunnyside Aquifer. These units and aquifer properties were described in the *Olympic Well Field Drinking Water Source Assessment and Contamination Assessment Report* (ICF, 2020). The monitoring wells described above are screened in either the B- or C-Zone. Recently the United States Geological Survey (USGS) installed a deep monitoring well, SMB1, in the Olympic Well Field as part of a broader study to gain further



LEGEND	
<span style="color: red;">●</span>	USGS WELL
<span style="color: blue;">●</span>	CITY OF SANTA MONICA INJECTION WELL (CURRENTLY INACTIVE)
<span style="color: black;">●</span>	CITY OF SANTA MONICA PRODUCTION WELL (ACTIVE)
<span style="color: purple;">●</span>	CITY OF SANTA MONICA PRODUCTION WELL (INACTIVE)
<span style="color: grey;">●</span>	CITY OF SANTA MONICA PRODUCTION WELL (ABANDONED)

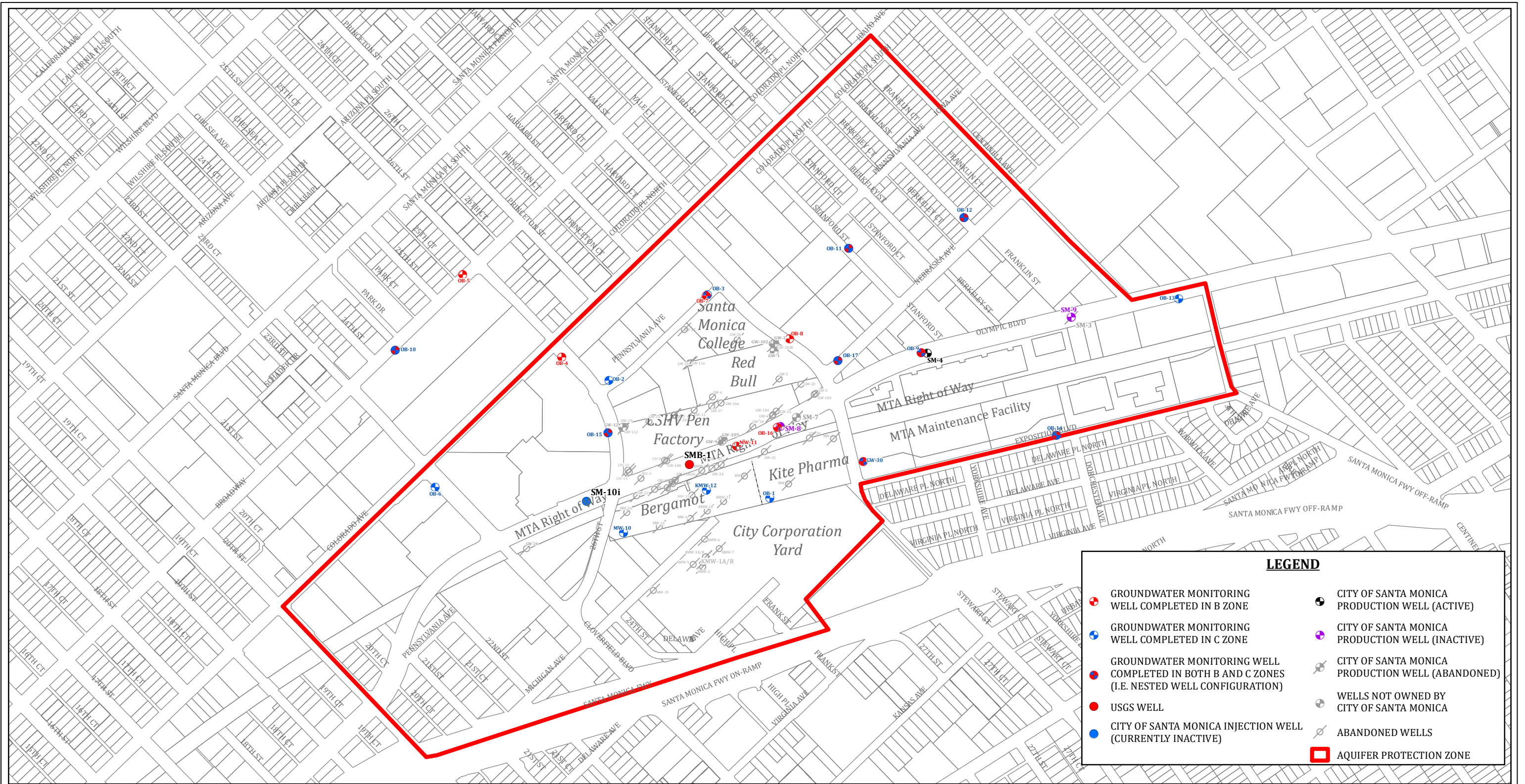


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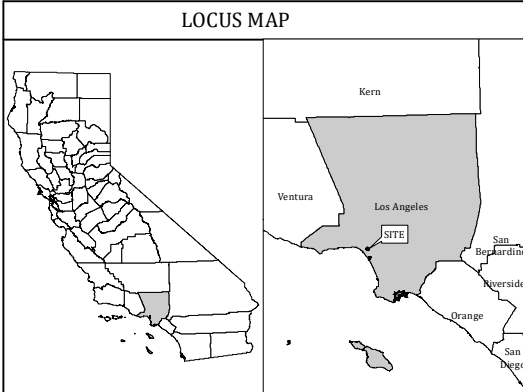
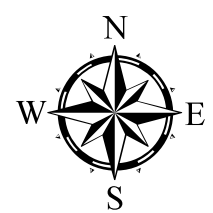
APPROVALS	DATE

FORMER MANUFACTURING FACILITIES OLYMPIC WELL FIELD		
PREPARED FOR	CITY OF SANTA MONICA OLYMPIC WELL FIELD SANTA MONICA, CALIFORNIA	SCALE 1 inch = 500 feet
DATE	09/2020	PRJ. NO. 308038-07119
SOURCE	Los Angeles County GIS web server. City of Santa Monica GIS. Portion of base map provided by AMEC and ICF. All locations approximate.	FIGURE <u>3</u> OF <u>5</u>



**LEGEND**

- GROUNDWATER MONITORING WELL COMPLETED IN B ZONE
- GROUNDWATER MONITORING WELL COMPLETED IN C ZONE
- GROUNDWATER MONITORING WELL COMPLETED IN BOTH B AND C ZONES (I.E. NESTED WELL CONFIGURATION)
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- CITY OF SANTA MONICA PRODUCTION WELL (ABANDONED)
- WELLS NOT OWNED BY CITY OF SANTA MONICA
- ABANDONED WELLS
- AQUIFER PROTECTION ZONE



REVISIONS				
REV #	DATE	BY	DESCRIPTION	

APPROVALS	DATE

<b>AQUIFER PROTECTION ZONE</b>			
PREPARED FOR	CITY OF SANTA MONICA OLYMPIC WELL FIELD SANTA MONICA, CALIFORNIA	SCALE	1 inch = 600 feet
DATE	09/2020	PRJ. NO.	308038-07119
SOURCE	Los Angeles County GIS web server. City of Santa Monica GIS. Portion of base map provided by AMEC and ICF. All locations approximate.	FIGURE	4 OF 5

information on the hydrology of the Los Angeles Coastal Plain. SMB-1 is a co-located well complex consisting of single well (SMB1-B#1) and a nested well. The nested well includes four wells, including SMB1-#4 which is screened in the Sunnyside Aquifer. SMB1-B#1 is screened in the in the D-Zone. SMB1 is also screened in deeper zones. The City plans to sample SMB1-B#1 and SMB1-#4 periodically to gain a better understanding of water quality.

## 3.4 Long-Term Quarterly Groundwater Monitoring

The City assumed responsibility for long-term monitoring in the Olympic Well Field beginning in the third quarter of 2011. Thus, the City has now conducted nearly 9 years of quarterly sampling (approximately 36 quarterly reports). The quarterly reports include groundwater level monitoring data and analytical results for volatile organic compounds (VOCs), including 1,4-dioxane and 1,2,3-trichloropropane. The reports also include monthly data on well field pumping volumes.

Quarterly monitoring provides the City with analytical data to assess levels of contamination in groundwater within the Olympic Well Field. These quarterly reports are submitted to the LA-RWQCB's GeoTracker site. Under provisions included in the clean-up and abatement order the City will continue to monitor water quality until groundwater in the B- and C-Zones beneath the site are cleaned-up and the City receives a NFA status from LA-RWQCB.

Long-term monitoring gives the City empirical data which can be used to adaptively manage well field production if a "slug" of contaminated groundwater is detected within the capture zone of one of the production wells. Adaptive management is discussed below in more detail.

## 3.5 Adaptive Well Field Management

Adaptive well field management is a procedure where the City can adjust production rates at individual production wells in the event an unexpected event occurs like the occurrence of a slug of contaminated groundwater in a sentry well or the temporary shutdown of a well to perform pump maintenance or address other mechanical issues. In these instances, the City can decrease or even temporarily cease production in a certain production well if it is determined that a slug of contaminated groundwater is moving toward that well. Given the relatively slow groundwater travel times, the City can proactively determine what rate of flow, if any, can be sustained. If one production well is temporarily shut-down, production could be increased in one (or both) of the other two production wells to achieve desired total production from the well field. The existence of a calibrated groundwater flow model is integral to adaptive well field management. An overview of the groundwater flow model is summarized below.

### 3.5.1 Groundwater Flow and Transport Model

A numerical groundwater flow and solute transport model was developed for the Olympic Well Field for the City's Water Resources Division (ICF, 2017). The groundwater model was developed to support implementation of the *Olympic Well Field Management Plan* (ICF 2012). The primary purpose of the groundwater model was to assess and confirm capture of VOCs present in groundwater in the vicinity of the Olympic Well Field, evaluate the threats posed by other hazardous waste releases near the City's wells, help guide the siting of future monitoring and production wells,

for adaptive management of existing wells, and as a tool for estimating the sustainable yield of the groundwater subbasin.

The calibrated groundwater flow model was used to evaluate capture of dissolved-phase VOCs in the B-Zone and C-Zone in the Olympic Well Field area. To assess VOC capture from SM-3 and SM-4 in the model, reverse particle tracking was employed. A circle of particles (generally ranging from 6 to 12) was placed around wells SM-3 and SM-4 in the B- and C-Zones in the calibrated flow model. The particle tracks were run in reverse (backward tracking) to determine the zone of capture from each well over the transient calibration period. The City is in the process of updating VOC capture from the using future groundwater production values from SM-8, SM-4, and SM-9 (replacement for SM-3). New zones of capture will be calculated for each production well which will provide the City with a tool for adaptively managing the well field.

### 3.5.2 Observation and Response Actions

As mentioned above the City conducts, and will conduct for the next few decades, quarterly Olympic Well Field groundwater monitoring. The monitoring well network consists of near-field wells and sentry wells. The sentry wells are an early-warning system that informs the City of the groundwater quality within the capture zones of the production wells. Given the relatively slow movement of dissolved-phase chemicals in groundwater, the distance between the production wells and sentry wells is great enough that the City can evaluate options for ensuring that a contaminated slug of groundwater does not get captured by a production well.

Response actions can vary from the temporary shut-down of a production well to a reduced pumping rate. The precise action can be determined by model runs to estimate dissolved-phase contaminant travel time under various pumping scenarios.

## 3.6 Industrial Use Discharge Permitting

Preventing the unauthorized release of chemicals that could potentially impact groundwater quality is a goal of the City. While unauthorized releases cannot be eliminated, the City has employed a rigorous industrial discharge permitting process to help minimize the frequency and magnitude of chemical releases.

Pursuant to existing regulations, the City updates its *Sustainable City Plan*, as needed. The Sustainable City Plan takes a citywide and regional approach in protecting and preserving the environment. As part of this plan, the City has implemented a proactive strategy toward pollution prevention by collaborating with nonprofit organizations, businesses, and residents, and by sponsoring local events and funding projects that make a positive impact to the local environment, e.g., strategies for reducing the use of household chemicals and toxic products and reducing trash, sewage, energy and water. The City continues to develop its pollution prevention outreach material related to its various programs and sustainability objectives (see Section 3.6.2). In conjunction with these efforts, all commercial businesses that require monitoring by Federal, State, or local regulations are issued a wastewater permit.

The City has updated its *Sanitary Sewer Management Plan*, as required by the Statewide General Waste Discharge Requirements, and the most recent update was dated June of 2017. The City is enrolled in the State Water Resources Control Board Waste Discharge Requirements and has

implemented routine electronic reporting of sanitary sewer overflows. All electronic reporting is further supplemented by telephonic and e-mail reporting to appropriate agencies.

### 3.6.1 Industrial Use Program

The City employs a proactive strategy in minimizing unauthorized industrial use discharges. Any business that discharges process wastewater is an industrial user (IU) and is required to comply with the industrial use program requirements. Currently, approximately 900 businesses are IUs. Based on a screening process some IUs are required to obtain an industrial wastewater permit. The strategies and practices employed to regulate discharges include:

#### 1. Industrial Use Inventory Updates

- a. Business License Referrals. City business license staff send business license permit application lists in an excel spreadsheet for review by pretreatment program staff.
- b. Field Reconnaissance. Pretreatment staff routinely survey commercial sectors for new permittees.
- c. Field Inspections: Routine inspection by pretreatment program staff of existing permitted businesses.
- d. Inter-Department Referrals. Referrals from other City departments such as the Fire Department, Water Division, City Business License, Wastewater Division, Building and Safety, Environmental Programs, Santa Monica Sustainable City, and the public.

#### 2. Permitting

- a. Completion of Standardized Facility Survey. Business license applicant completes facility survey which identifies any new businesses that may need an industrial wastewater permit (IWP) and pretreatment device.
- b. Self-Certification. Based on facility survey those applicants likely requiring an IWP are further screened by the completion of a self-certification questionnaire.
- c. Field Inspection. A field inspection is conducted to verify the information on the facility survey and self-certification questionnaire. Necessary as-needed adjustments to the permit classification are made and related fees are entered by the inspector into a database system.

#### 3. Identification of Significant Industrial Users

- a. An industrial user that among other things discharges an average of 25,000 gallons or more of process water and has the potential to adversely affect a publicly owned treatment works operation.
- b. The City currently has no significant industrial users (SIUs) that fit the full regulatory definition.

#### 4. Regular Industrial Users

- a. Non-SIUs are issued streamline permits that outline discharge general provisions.
- b. Discharge prohibitions and specific pollutant limitations are outlined.
- c. Pollution Prevention and Best Management Practices guidelines are provided for each type of business.

- d. Urban Runoff Spill Prevention, Control and Cleanup protocols are provided as well as a reference list of agency contracts and phone numbers.

#### **5. Routine Surveillance, Inspection, and Sampling**

- a. The City conducts random inspection, sampling, and surveillance of permitted IUs to ensure adherence to permit requirements.
- b. Permit violations identified via random inspections or through public complaints are documented for follow-up and clearance.
- c. As-needed joint inspections are conducted in conjunction with other agencies such as: Los Angeles County Fire Department, Health and Hazardous Materials Division; Los Angeles County Health Department; City of Los Angeles Department of Public Works; Bureau of Sanitation; and Federal Bureau of Investigation.
- d. The City conducts sampling on an established basis depending on the type of business. The frequency ranges for monthly to semi-annual (including quarterly) depending on the type of business and discharge volumes. In addition to the sampling conducted by the City some businesses are required to conduct and report self-monitoring activities. Enforcement actions are taken when self-monitoring reports indicate a permit violation.

The City's pretreatment program staff is certified through the California Water Environment Association's Environmental Compliance Inspector Certification Program, which requires staff to meet educational requirements and pass a certification exam. Four full-time staff currently work in this program. Staff also attend professional conferences, partake in continuing education classes, and take 8-hour HAZWOPER refresher courses.

### **3.6.2 Outreach and Education**

The City actively promotes outreach and engagement opportunities for both the business community and public. Some of the more prominent outreach and education programs are listed below.

#### **1. Clean Bay Restaurant Certification Program**

The City, in partnership with the Santa Monica Bay Restoration Commission, has operated the Clean Bay Restaurant Certification Program for over 10 years. The program recognizes local restaurants that put forth extra effort to keep Santa Monica's ocean and beaches clean.

#### **2. City of Santa Monica Office of Sustainability and the Environment (OSE)**

The OSE develops and distributes information to the public regarding economical alternatives to environmentally unfriendly or toxic consumer products. The OSE has implemented a consumer product labeling program to help educate the public on the hazards of consumer products. This program is called "Make a Smart Choice about Toxics." A fact sheet is distributed to various stores throughout the City.

The OSE has also trained public educators at local schools on proper environmental practices. Teachers are trained on how to present various environmental curriculum materials for specific grade levels.

#### **3. Sustainable City Program/Green Team Project**



Santa Monica's City Council adopted the Sustainable City Program in 1994. This program was developed by the City's Task Force on the Environment to create the foundation for a more sustainable way of life, one that safeguards natural resources and prevents and protects human health and the environment.

The Green Team Project is designed as community outreach program, which educates the public and businesses of Santa Monica on the importance of improving the environment. This program brings together neighbors and community groups with the intent of reducing energy, water, sewage, trash, air pollution, and household toxics. The program also educates residents on household hazardous wastes and how to handle and dispose them in an environmentally sound manner.

### 3.7 Zoning and Land Use

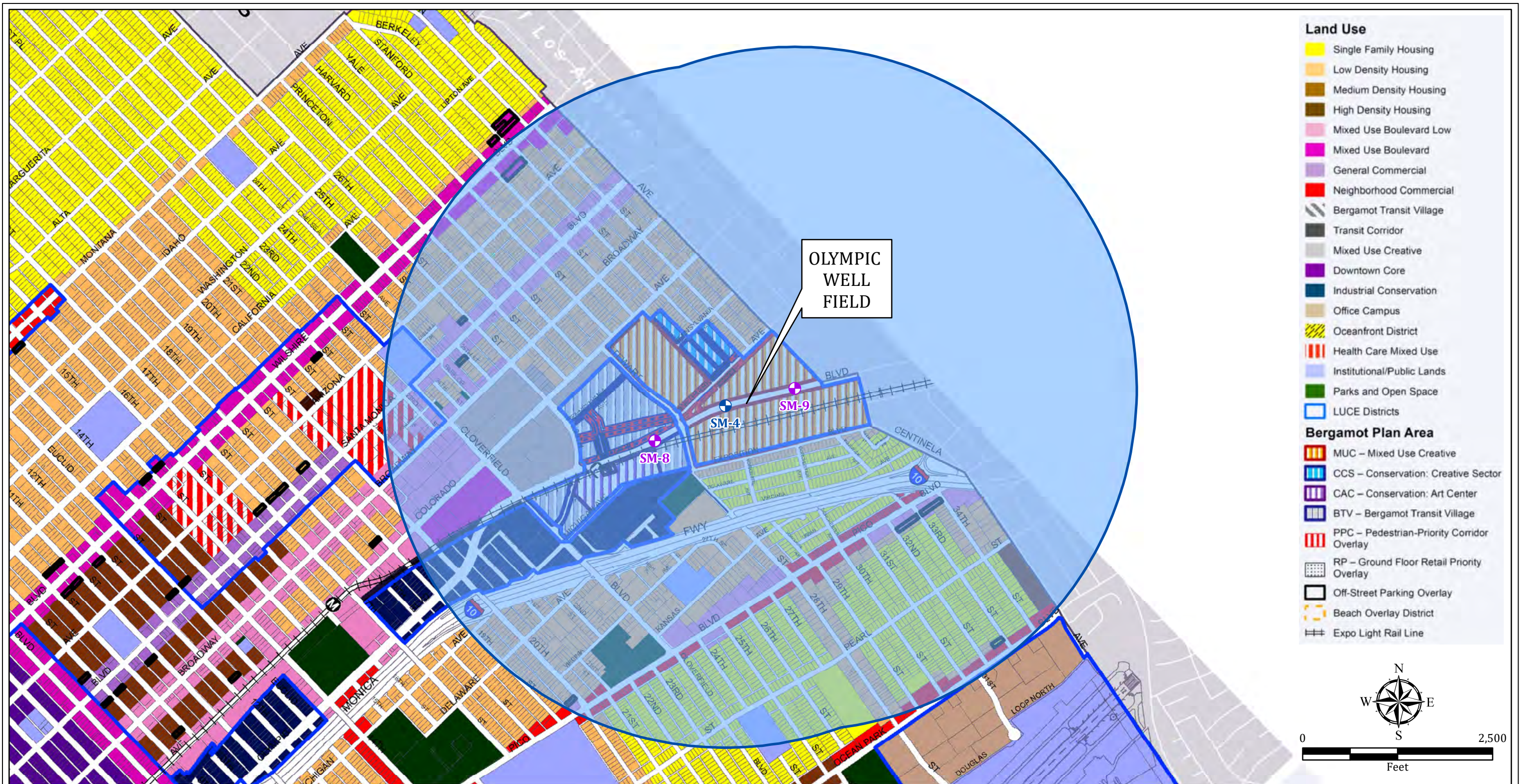
The City's zoning map for the Olympic Well Field area is shown on Figure 5. This map was developed under the authority of Division 1 through Division 5 of Article 9 of the Santa Monica Municipal Code, which are collectively known as the *City of Santa Monica Comprehensive Zoning Ordinance*.

A review of current zoning and land use maps in the Olympic Well Field area would be markedly different than land use maps of the 1940s or 1950s when much of the land use in the area was industrial when industrial businesses like the aforementioned Gillette and Boeing and conducted manufacturing operations. Over the past several decades zoning districts and associated land uses in and around the Olympic Well Field have created an area less prone to releases of toxic chemicals that could potentially impact groundwater.

Although the Olympic Well Field draws water from roughly a one-mile radius of SM-3/SM-9, the heart of the well field is bounded by Broadway Avenue to the west, Centinela Avenue to the north, Interstate 10 to the east, and 26<sup>th</sup> Street to south. Within this area, and even extending beyond these bounds, only one area is zoned as Industrial Conservation. The Industrial Conservation zone allows for small-scale industrial and manufacturing businesses and is bound by Stewart Street to the north, Olympic Boulevard to the west, 17<sup>th</sup> Street to the south, and Interstate 10 to the east. A review of the California Environmental Protection Agency (Cal EPA), State Water Resources Control Board's facility at-a-glance database indicates that there is only one waste discharge requirement (WDR) permit (issued to City of Santa Monica for an injection test well) and no national pollutant discharge elimination system (NPDES) permits issued for the businesses located in the Industrial Conservation Zone. Any potential future industry that may be located in the Industrial Conservation zone would need to obtain a Industrial Discharge Permit with the City as described above in Section 3.6.

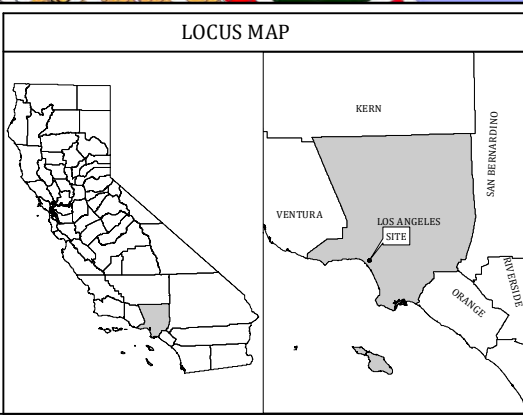
Much of the former Olympic Well Field area either lies within the Bergamot Plan Area, which includes multi-use creative (MUC), conservation: creative sector (CCS), conservation: art center (CAC) and Bergamot Transit Village (BVT). Transit Village zone, The remaining areas are zoned either as office complex (OC), single-unit residential (R1), or low density residential (R2). Given the zoning and associated land use restrictions there is a low probability of new contaminant sources being sited in the Olympic Well Field.

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**LEGEND**

- CITY OF SANTA MONICA PRODUCTION WELL (ACTIVE)
- CITY OF SANTA MONICA PRODUCTION WELL (INACTIVE)
- ESTIMATED RADIUS OF DRAWDOWN (4,500 ft radius around SM-3 and SM-4)



REVISIONS				
REV #	DATE	BY	DESCRIPTION	

APPROVALS	DATE
S. Botha	9/8/2020

<b>LAND USE AND RADIUS OF INFLUENCE</b>			
PREPARED FOR	CITY OF SANTA MONICA OLYMPIC WELL FIELD SANTA MONICA, CALIFORNIA	SCALE	1 inch = 1,250 feet
DATE	09/2020	PRJ. NO.	308038-07119
SOURCE	Los Angeles County GIS web server; City of Santa Monica GIS; City of Santa Monica Land Use Designations. All locations approximate.	FIGURE	5 OF 5



## Section 4 Conclusion

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This drinking water source protection plan has been prepared as Step 3 in the 97-005 DDW permitting process. In this plan the City has outlined the methods used to ensure protection of drinking water in the Olympic Well Field. As has been described above and discussed in detail in the Step 1 Drinking Water Source Contamination and Assessment report, the Olympic Well Field has been studied extensively for over 30 years. Major contamination sources have been identified and many sites have been remediated. Contaminant plumes are defined and well-controlled.

The City has developed a robust monitoring well network in the Olympic Well Field. The monitoring wells in the existing network are screened in the most contaminated zones beneath the Olympic Well Field, the B- and C-Zones. The monitoring well network includes near-field wells (wells closer to production wells) and sentry wells. The groundwater flow travel time between the sentry wells and production wells vary from several months to several years. The sentry wells serve as early warning points that enable the City to proactively and adaptively manage pumping to prevent the flow of a slug of contaminants from entering a production well.

The City conducts quarterly groundwater monitoring and reporting in the Olympic Well Field as part of an LA-RWQCB CAO. This monitoring will continue until the groundwater in the B-Zone is declared “clean” by LA-RWQCB. Modeling simulations estimate the clean-up time to be several decades. Therefore, the existing monitoring well network will stay intact and be monitored and reported on for several decades.

The City has established an excellent relationship with the LA-RWQCB site investigation unit and is notified of major investigations and site closure requests. This gives City staff the opportunity to review files and decide if a release has the potential to impact water quality in the Olympic Well Field or if remedial activities are sufficient. Since the nature of land use within in the Olympic Well Field area has shifted from an industrial to mostly non-industrial, the potential for new releases to occur is small. Older releases have been identified and mostly remediated.

The City’s release prevention program is the number one mechanism to ensure source protection. As described above, the City has a robust and comprehensive IWP process that is closely linked to business license applications. Businesses having industrial use discharges are highly regulated, inspected and sampled. Education and public outreach are actively promoted at all levels in the City. The City’s Sustainable Program serves to guide both businesses and the public in responsible stewardship of natural resources.

The City believes when taken collectively, all the methods and procedures described above will ensure that the source of drinking water in the Olympic Well Field is protected against future potential degradation. In fact, it is the objective and goal of the City to restore the drinking water quality in the Olympic Well Field to its pre-contamination state.

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## Section 5 References Cited

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ICF International (ICF). 2012. Olympic Well Field Management Plan. City of Santa Monica, California. Prepared for the City of Santa Monica, CA, June.

ICF. 2017. Olympic Well Field Groundwater Model. City of Sant Monica, California. Prepared for the City of Santa Monica, CA, September.CF. 2020. Olympic Well Field Drinking Water Source Assessment and Contamination Assessment Report. May.

Los Angeles-Regional Water Quality Control Board. 2016. No Further Action for Soil Only: Southern Portion of Former Gillette/Papermate Facility, 1681 26<sup>th</sup> Street, Santa Monica, CA (SCP No. 0130E, Site ID No. 2043COO, Modified CAO No. R4-2008-0034). October.

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