

# OAK GROVE SCHOOL DISTRICT

## UNDERGROUND STORAGE SAFETY PLAN

### **Policy**

The Oak Grove School District shall operate and maintain all underground storage tanks in accordance with regulations promulgated by the Environmental Protection Agency (EPA) to prevent the release of a regulated substance.

### **Definition and Applicability**

The EPA defines an underground storage tank (UST) as any tank, including the underground piping associated with the tank that has at least ten percent of its volume underground. UST regulations apply to tanks storing petroleum or certain hazardous chemicals except as noted below:

- Any UST system holding hazardous waste listed or identified under the Solid Waste Disposal Act or a mixture of such hazardous waste and any other regulated substances;
- Any wastewater treatment tank system that is part of a wastewater treatment facility;
- Equipment or machinery that contains regulated substances for operational purposes such as hydraulic lift tanks and electrical equipment tanks;
- Any UST system whose capacity is 110 gallons or less;
- Any UST system that contains a *de minimus* concentration of regulated substances; or
- Any emergency spill or overflow containment UST system that is expeditiously emptied after used.

### **Authority and Responsibility**

*Chief Facilities Officer and Managers* are responsible for:

1. Conducting tank closures and removals in conjunction with appropriate regulatory agencies;
2. Providing guidance to departments installing new underground storage tanks;
3. Notifying regulatory agencies when there is a release of a regulated substance;
4. Investigating and confirming all suspected releases of regulated substances;
5. Supervising a certified or licensed contractor to measure the presence of a released regulated substance when one exists;

- 6. Coordinating an annual “line test” with the departments responsible for functional underground storage tanks; and,
- 7. Facilitating and documenting departmental operator training compliance.

**M&O CONTACTS**

Chief Facilities Officer	Neil Rauschhuber
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<b>Supervisor</b>	<b>Department</b>	<b>Contact Number</b>
Fred Dickey	Maintenance and Operations	408-227-8300ext100343
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***Departments are responsible for:***

- 1. Providing calibration and routine maintenance to release detection systems via a certified or licensed contractor;
- 2. Maintaining records of calibration and maintenance reports;
- 3. Maintaining monthly printed receipts of the fuel monitoring system;
- 4. Providing copies of fuel monitoring system receipts to the M&O Manager on a monthly basis;
- 5. Monitoring underground storage tanks at least once every 30 days for release of a regulated substance;
- 6. Completing the required Quarterly Equipment Inspection Checklists;
- 7. Contacting the Chief Facilities Officer prior to installation of a new underground storage tank;
- 8. Contacting the Safety Committee prior to closure or removal of any underground storage tank;
- 9. Financing the removal of underground storage tanks; and,
- 10. Ensuring that affected employees participate in required UST operator training.

**Operator Training**

Requirements

The M&O Manager shall be responsible for facilitating required training to employees who have been designated by their departments as a Class A, B, or C UST Operator. The published definitions for Class A, B, C Operators can be found at [41 IAC Part 176.620](#) and the training requirements can be located at [41 IAC Part 176.620](#). The purpose of this training is to provide the employee with an understanding, knowledge, and skills necessary for the safe operation of a UST facility. The training requirements also detail proper UST / equipment inspection procedures as well as emergency response procedures.

### **Frequency**

The M&O Manager shall ensure that employees designated as Class A and B operators are properly trained within 30 days of assuming duties. Class C operators shall be properly trained before assuming duties at a UST facility. Continuing education, training, and a general examination regarding operator-specific subject matter shall take place once every two years. The Department shall be responsible for maintaining training records for each active UST Operator for the duration of their employment.

### **Tank Installation**

Contact the Chief Facilities Officer prior to installation of a new underground storage tank. He/she will provide guidance based on regulations set by the EPA, OSFM, and City of San Jose Department of Public Health.

### **Release Detection**

Release detection, also referred to as “monthly monitoring”, shall be provided on all tank systems. Release detection shall be capable of detecting a release from any portion of a tank and piping that routinely contains product.

#### **The release detective system shall be:**

- Routinely calibrated, operated and maintained in accordance with the manufacturer’s instructions;
- The responsibility of the department;
- Calibrated and maintained by a certified or licensed contractor; and
- Records of all calibrations and maintenance shall be kept with the department and readily available for review.

Tanks and tank systems shall be monitored at least every 30 days for releases. Monitoring of the systems shall be conducted by a certified or licensed contractor with the exception of monthly

inventory control, manual tank gauging, and automatic tank gauging. Monitoring can consist of the following “monthly monitoring” methods of detection.

### ***Internal Methods***

#### **Monthly Inventory Control**

Product inventory control shall be conducted at least once every 30 days to detect a release of at least one percent of flow-through volume plus 130 gallons on product in the following manner:

- Inventory volume measurements for regulated substance inputs, withdrawals, and the amount still remaining in the tank are recorded each operating day;
- The equipment used is capable of measuring the level of product over the full range of the tank’s height to the nearest one-eighth of an inch;
- The regulated substance inputs are reconciled with delivery receipts by measurement of the tank inventory volume before and after delivery;
- Deliveries are made through a drop tube that extends to within one foot of the tank bottom;
- Product dispensing is metered and recorded within the local standards for meter calibration or an accuracy of six cubic inches for every five gallons of product withdrawn;
- The measurement of any water level in the bottom of the tank is made to the nearest one-eighth of an inch at least once a month;
- The previous three years of inventory control records shall be kept onsite;
- Tanks installed on or before April 11, 2016 may use this method for ten years after the date the tank was installed or upgraded with corrosion protection. After ten years another form of release detection shall be used;
- Tanks installed or replaced after April 11, 2016 shall not use inventory control combined with periodic tank tightness testing as the primary method of release detection. as a form of release detection; and
- Monthly inventory control shall not be used as a form of release detection on tanks systems with blending pumps or siphon tanks or on tanks that passed only a non-invasive tank integrity assessment which have been upgraded using cathodic protection.

Monthly inventory control must be used in conjunction with periodic tank tightness test to meet regulatory requirements.

#### **Manual Tank Gauging**

Manual tank gauging may be utilized as the sole method of leak detection for the life of the tank only for tanks up to 1,000 gallons. Tanks between 1,001 and 2,000 gallons can use this method

only in combination with tank tightness testing. This combined method can only be used during the first 10 years following tank installation. The features of manual tank gauging are:

- Four measurements of the tank's content must be taken weekly, two at the beginning and two at the end of at least a 36-hour period during which nothing is added or removed from the tank;
- Liquid levels measurements must be taken with a gauge stick that is marked to measure the liquid to the nearest one-eighth of an inch;
- The average of the two consecutive ending measurement are subtracted from the average of the two beginning measurements to indicate the change in product volume; and
- Every week, the calculated change in tank volume is compared to the *Table of Test Standard for Manual Tank Gauging* below.

If the calculated change exceeds the weekly standard, the UST may be leaking. Monthly average of the four weekly test results must be compared to the monthly standard in the same way.

Manual tank gauging may be used for tanks that are 551 to 2,000 gallons for a period of ten years after the cathodic protection was installed on the tank and at the end of ten years, another form of leak detection is required. All tanks between 551 and 2,000 gallons shall receive a precision tank test once every year. All records for manual tank gauging shall be kept onsite for three years. Manual tank gauging shall not be used as a method of release detection for tanks over 2,000 gallons, or, for tanks that after passing only a non-invasive tank integrity assessment are upgraded using cathodic protection. Manual tank gauging shall not be used on tanks installed after May 1, 2003. If a tank is suspected of leaking and the variation between the beginning and ending measurements exceeds the weekly or monthly standards in Table B, the tank is subject to the requirement of OSFM for reporting. The criterion for suspecting a leak using Manual Tank Gauging is:

**Table of Test Standard for Manual Tank Gauging**

<b>Normal Tank Capacity</b>	<b>Weekly Standard (one test)</b>	<b>Monthly Standard (average of four tests)</b>	<b>Minimum Duration of Test</b>
up to 550 gallons	10 gallons	5 gallons	36 hours
551-1,000 gallons (when tank diameter is 64")	9 gallons	4 gallons	44 hours

551-1,000 gallons (when tank diameter is 48")	12 gallons	6 gallons	58 hours
551-1,000 gallons (also requires periodic tank tightness testing)	13 gallons	7 gallons	36 hours
1,001-2,000 gallons (also requires periodic tank tightness testing)	26 gallons	13 gallons	36 hours

### **Precision Tank Tightness Testing**

Tank tightness testing shall be capable of detecting a 0.1 gallon per hour leak rate from any portion of the tank that routinely contains product while accounting for the effects of thermal expansion or contraction of the product, vapor pockets, tank deformation, evaporation or condensation, and the location of the water table. Tracer elements shall not be used when a leak is suspected. There are four types of precision testing:

- 100 percent volumetric overfill;
- Volumetric under fill with an approved ullage test of negative pressure or inert gas as approved by the OSFM;
- A negative pressure; or
- Other methods approved by the OSFM.

Tightness test must be performed periodically and UST systems installed on or before April 11, 2016 must have tank tightness test performed every five years for ten years following installation. After the applicable time period, you must have a monitoring method that can be performed at least once every 30 days.

Beginning on October 13, 2018, you must test your release detection equipment annually to make sure it is working properly.

### **Automatic Tank Gauging**

Automatic tank gauging may be used with an accuracy of 0.2 gallons per hour together with monthly inventory control. Automatic tank gauging shall not be used if a release is suspected. If automatic tank gauging equipment is going to be used to test for loss of product and conduct inventory control it shall meet the following requirements:

- The automatic product level monitor can detect a 0.2 gallon per hour rate leak from any portion of the tank that routinely contains product;
- The automatic tank gauging must be evaluated by a third party and be listed in the National Work Group on Leak Detection Evaluation (NWGLDE) publication List of Leak Detection Evaluations for Underground Storage Tank Systems. When the gauging is installed it must be in compliance with the third party protocol in the evaluation;
- The automatic tank gauging monitors shall be new or replacement monitors, shall be mounted no more than six feet from the floor, and shall be unobstructed as well as accessible; and
- All newly installed automatic tank gauging systems shall be equipped with a printer. All existing tank gauges shall have a printer added by May 1, 2004 and if retrofitting of the system is necessary, a permit will be required. A system with a remote printer is acceptable.

### **Statistical Inventory Reconciliation**

- If statistical inventory reconciliation is utilized, the District shall provide the OSFM a written affirmation that their data collection staff is trained in the data gathering process and that only trained staff will be collecting data. Each tank monitored by this method shall be identified to the OSFM in writing within 30 days of the commencement of such monitoring, specifying tank size, product stored, facility location and any other pertinent identification information necessary;
- Statistical inventory reconciliation may only be used in conjunction with precision tank tightness testing conducted annually;
- A precision tank tightness test, as approved by the Office of the State Fire Marshall (OSFM), shall be mandatory, if any data analysis indicates a possible release or is inconclusive or indeterminate, or for any test result other than a pass;
- The measurement of any water level in the bottom of the tank is made to the nearest 1/8 inch at least once a month; Note: The practices described in API Recommended Practice 1621 may be used, where applicable, as guidance in meeting the requirements;
- Records for statistical inventory reconciliation shall be kept onsite for three years;
- Statistical inventory reconciliation shall not be used on tank systems installed after May 1, 2003. If statistical inventory reconciliation is discontinued at a site it will not allowed again in the future; and
- Statistical inventory reconciliation shall not be used after January 1, 2006 on tank systems with blending pumps or siphon tanks.

## *External Methods*

### **Vapor Monitoring**

Testing or monitoring for vapors within the soil of the excavation zone shall meet the following requirements:

- The materials used as backfill are sufficiently porous (e.g., gravel, sand, crushed rock) to readily allow diffusion of vapors from releases into the excavation area;
- The stored regulated substance or a tracer compound placed in the tank system is sufficiently volatile (e.g., gasoline) to result in a vapor level that is detectable by the monitoring devices located in the excavation zone in the event of a release from the tank;
- The measurement of vapors by the monitoring device is not rendered inoperative by the ground water, rainfall, or soil moisture or other known interferences so that a release could go undetected for more than 30 days;
- The level of background contamination in the excavation zone will not interfere with the method used to detect releases from the tank;
- The vapor monitors are designed and operated to detect any significant increase in concentration above background of the regulated substance stored in the tank system, a component or components of that substance, or a tracer compound placed in the tank system. Vapor monitors shall be permanently installed in vapor monitoring wells; a monthly inspection of the vapor monitoring system must be made and a log maintained showing the date of inspection, results, and initials of the party doing the inspection;
- In the UST excavation zone, the site is assessed to ensure compliance with the regulatory requirements 1 through 4 above, and to establish the number and positioning of monitoring wells that will detect releases within the excavation zone from any portion of the tank that routinely contains product;
- Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;
- Vapor monitoring wells shall be of sufficient design to allow vapors to be detected from any portion of the tank being monitored and shall be a minimum of four inches in diameter or as approved by the OSFM on the applicable permit; and
- An adequate number of vapor monitoring wells shall be provided to ensure that a release can be detected from any portion of the tank. Adequacy of such wells is subject to approval by the OSFM on the applicable permit.



## **Groundwater Monitoring**

Testing or monitoring for liquids in the groundwater shall meet the following requirements:

- The regulated substance stored is immiscible in water and has a specific gravity of less than one;
- Groundwater is never more than 20 feet from the ground surface and the hydraulic conductivity of the soil(s) between the UST system and the monitoring wells or devices is not less than 0.01 cm/sec (e.g., the soil should consist of gravels, coarse to medium sands, coarse silts, or other permeable materials), and groundwater shall be present in the groundwater monitoring wells at all times;
- The slotted portion of the monitoring well casing shall be designed to prevent migration of natural soils or filter pack into the well and to allow entry of regulated substance on the water table into the well under both high and low ground-water conditions;
- Monitoring wells shall be sealed from the ground surface to the top of the filter pack;
- Monitoring wells or other devices intercept the excavation zone or are as close to it as is technically feasible;
- The continuous monitoring devices or manual methods used can detect the presence of at least one-eighth of an inch of free product on top of the ground water in the monitoring wells. The continuous monitoring devices shall consist of fixed sensors mounted permanently inside the well or samples shall be taken by a mechanical bailer capable of detecting the presence of at least 1/8-inch of free product on top of the groundwater in the monitoring wells. Groundwater monitoring shall be done monthly and a log of the inspection made showing the date of the inspection, initials of the person conducting the inspection, and results of the well sampling. This log shall be completed every 30 days and kept on site for a minimum of three years;
- Within and immediately below the UST system excavation zone, the site is assessed to ensure compliance with the regulatory requirements and to establish the number and positioning of monitoring wells or devices that will detect releases from any portion of the tank that routinely contains product;
- Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering;
- The minimum diameter of groundwater monitoring wells shall be 8 inches or as approved by the OSFM on the applicable permit; and

- An adequate number of groundwater monitoring wells shall be provided to ensure that a release can be detected from any portion of the tank. Adequacy of such wells is subject to approval of the OSFM on the applicable permit. On new installations, there shall be two eight-inch diameter monitoring wells for the first tanks and one additional well for each additional tank installed. The wells will be of manufactured slotted or perforated type. They shall be at opposite ends and corners, one foot below the invert elevations of the lowest UST.

### **Interstitial Monitoring**

Interstitial monitoring between the UST system and a secondary barrier immediately around or beneath it may be used, but only if the system is designed, constructed, and installed to detect a leak from any portion of the tank that routinely contains product and also meets one of the following requirements:

- For double-walled UST systems, the sampling or testing method can detect a release through the inner wall in any portion of the tank that routinely contains product; Note: The provisions outlined in the Steel Tank Institute's "Standard for Dual Wall Underground Steel Storage Tanks", may be used as guidance for aspects of the design and construction of underground steel double-walled tanks;
- For UST systems with a secondary barrier within the excavation zone, the sampling or testing method used can detect a release between the UST system and the secondary barrier:
  - The secondary barrier around or beneath the UST system consists of artificially constructed material that is sufficiently thick and impermeable (not in excess of 0.000001 cm/sec for the regulated substance stored) to direct a release to the monitoring point and permit its detection;
  - The barrier is compatible with the regulated substance stored so that a release from the UST system will not cause a deterioration of the barrier allowing the release to pass through undetected;
  - For cathodically protected tanks, the secondary barrier must be installed so that it does not interfere with the proper operation of the cathodic protection system;
  - The ground water, soil moisture, or rainfall will not render the testing or sampling method used inoperative so that a release could go undetected for more than 30 days;
  - The site is assessed to ensure that the secondary barrier is always above the ground water and not in a 25-year flood plain, unless the barrier and monitoring designs are for use under such conditions;
- Monitoring wells are clearly marked and secured to avoid unauthorized access and tampering; and

- An adequate number of monitoring wells shall be provided to ensure that a release can be detected from any portion of the tank. Adequacy of the number of such wells is subject to the approval of the OSFM.
- For tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.
- The interstitial monitoring system must be tested every three years to verify its operation and records from the previous test must be kept on-site. Testing of the system sensors shall be done in such a way as to verify their function but not damage the sensors; and
- Recordkeeping requirements for interstitial monitoring of tanks and lines requires an inspection once every 30 days and records for the previous three years must be kept on-site. The records can be from an ATG system showing the interstitial monitors' status (pass/normal/other) on a print out tape or by maintaining a log showing date of inspection, initials of inspector, and status of system (pass/normal/other).

## **Release Notification and Investigation**

### **Notification**

The M&O Manager shall notify regulating agencies within 24 hours for any of the following conditions:

- The discovery of a released regulated substance at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, and nearby surface water);
- Unusual operating conditions observed by owners and operators (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST system, or an unexplained presence of water in the tank), unless system equipment is found to be defective but not leaking, and is immediately repaired or replaced; and
- Monitoring results from a release detection method that indicate a release may have occurred unless the monitoring device is found to be defective, and is immediately repaired, recalibrated or replaced, and additional monitoring does not confirm the initial result or in the case of inventory control, a second month of data does not confirm the initial result.

### **Investigation**

The M&O Manager shall immediately investigate and confirm all suspected releases of regulated substances requiring reporting within seven days using either of the following steps:

- Conduct a system test to determine whether a leak exists in that portion of the tank that routinely contains product, or the attached delivery piping, or both.
  - The UST system shall be repaired, replaced or upgraded and corrective action shall be in accordance with **40 CFR 280.60, Subpart F**, if the test results for the system, tank, or delivery piping indicate that a leak exists.
  - Further investigation is not required if the test results for the system, tank, and delivery piping do not indicate that a leak exists and if environmental contamination is not the basis for suspecting a release.
- A certified or licensed contractor, under the supervision of the M&O Manager, shall conduct a site check if the test results for the system, tank, and delivery piping do not indicate that a leak exists but environmental contamination is the basis for suspecting a release.
  - Site check – A certified or licensed contractor shall measure for the presence of a release where contamination is most likely to be present at the UST site. In selecting sample types, sample locations, and measurement methods, owners and operators must consider the nature of the stored substance, the type of initial alarm or cause for suspicion, the type of backfill, the depth of ground water, and other factors appropriate for identifying the presence and source of the release. If the test results for the excavation zone or the UST site indicate that a release has occurred, owners and operators shall begin corrective action in accordance with **Subpart F**. If the test results for the excavation zone or the UST site do not indicate that a release has occurred, further investigation is not required.

### **Closure of Underground Storage Tanks**

Contact the Chief Facilities Officer prior to closure or removal of any underground storage tank. He/she shall conduct tank closures and removals in conjunction with appropriate regulatory agencies.

### **California State Fire Department Regulations**

In order to be subject to the APSA program, a “tank in an underground area” must meet all of the following:

- The storage tank must be located on or above the surface of the floor in a structure at least 10 percent below the ground surface, including, but not limited to, a basement, cellar, shaft, pit, or

vault. • The structure in which the storage tank is located must provide for secondary containment of the contents of the tank , piping, and ancillary equipment, until cleanup occurs.

• The structure in which the storage tank is located must allow for direct viewingb of the exterior of the tank except for the part of the tank in contact with the surface of the floor.a,c

• The storage tank meets one or more of the following conditions specified in the table below.

New and Future Regulations: Effective Date

### **Types of Tanks - HSC 25270.2(o)(1)(C) Piping Specifics**

**1/1/2016** (i) contains petroleum to be used or previously used as lubricant or coolant in motor engines, transmissions, or oil-filled operational or manufacturing equipment

Comply with APSA per HSC 25270.3 and 25270.4.5 and federal SPCC rule (40CFR 112) to prevent and control releases

**Estimated 1/1/2018** (Pending OSFM regulations on piping for tanks in underground areas) (ii) contains petroleum that is considered a hazardous waste and complies with the hazardous waste tank standards in the California Code of Regulations, Title 22 (22CCR) e

- Comply with APSA per HSC 25270.3 and 25270.4.5 and federal SPCC rule (40CFR 112) to prevent and control releases Comply with 22CCR e If there is connected piping that is in direct contact with soil or backfill, must comply with OSFM piping regulations (iii) contains petroleum to be used for emergency systems, solely in connection with a fire pump or an emergency system, legally required standby system, or optional standby system as defined in the CA Electrical Code Comply with APSA per HSC 25270.3 and 25270.4.5 and federal SPCC rule (40CFR 112) to prevent and control releases (iv) does not fit into (i), (ii) or (iii) and contains petroleum This subsection covers all other types of tanks at facilities subject to APSA – gasoline, diesel, petroleum solvent, etc.
- Comply with APSA per HSC 25270.3 and 25270.4.5 and federal SPCC rule (40CFR 112) to prevent and control releases
- All connected piping, including any portion of a vent line, vapor recovery line, or fill pipe that is beneath the surface of the ground, and all ancillary equipment, can either be visually inspected by direct viewing or has both secondary containment and leak

detection that meet the requirements of the OSFM piping regulations to be adopted pursuant to HSC 25270.4.1 a.

- For a shop-fabricated double-walled storage tank, a mechanical or electronic device used to detect leaks in the interstitial space meets the requirement for secondary containment of the

## **Resources**

Office of the State Fire Marshall <http://osfm.fire.ca.gov/>

Office of the State Fire Marshal Aboveground Petroleum Storage Act Guide to Understanding Tanks in Underground Areas per SB 612 (Health & Safety Code [HSC], Division 20, Chapter 6.67, Section 25270.2(o))

OSHA <https://www.osha.gov>

Occupational Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response (29 CFR 1910.120).

*The plan was approved by the Safety Committee on July 26, 2016. The plan was reviewed and updated on August 2017.*