

5.8 Hazards and Hazardous Materials

HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Significance criteria established by CEQA Guidelines, Appendix G.

5.8.1 Setting

This section addresses issues related to environmental hazards and hazardous materials in the existing conditions. Environmental hazards include accidental spills of hazardous materials, the presence of existing subsurface contamination, the risk of wildfire, and aircraft safety. Hazardous materials include fuel, oil, and lubricants. If encountered, contaminated soil can pose a health and safety threat to workers or the public.

Existing and Past Land Use Activities

Existing and past land use activities are commonly used as indicators of sites or areas with potential for hazardous material storage and use or potential environmental contamination. For example, many industrial sites, historic and current, have soil or groundwater contamination by hazardous substances. Other hazardous materials sources include leaking underground tanks in commercial and rural areas, contaminated surface runoff from polluted sites, and contaminated groundwater plumes.

The proposed PG&E Embarcadero-Potrero 230 kV Transmission Project would be located in the City and County of San Francisco and the transmission line route would traverse highly urbanized areas of San

Francisco; the underwater section of the transmission line route would be located just offshore within the adjacent San Francisco Bay. Land use along the proposed northern segment is primarily light industrial, commercial, and high density residential and office space. The proposed southern segment along 23rd Street and the proposed switchyard site is in heavy industrial use. The offshore segment of the transmission line would be approximately 2.5 miles long and approximately 1,500 to 2,500 feet from the San Francisco shoreline, roughly paralleling the waterfront from Pier 30/32 to 23rd Street.

Hazardous Materials

Construction activities routinely involve use and storage of hazardous materials such as cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids. The use and storage of such materials must comply with federal and state regulations. Hazardous material use during operation and maintenance of the proposed switchyard and transmission line would be limited to lubricating and cooling oils at the switchyard and motor vehicles fluids associated with line inspection vehicles. No acutely hazardous materials would be associated with construction, maintenance, or operation of the project.

Environmental Contamination

The project area is located within the vicinity of commercial or industrial sites with known contamination and sites that store and use large quantities of hazardous materials where unknown contamination may be present.

Portions of the onshore segments of the project alignment are underlain by artificial fill that is mapped as being in areas covered under the San Francisco Maher Ordinance (SFDPH, 2013). The Maher Ordinance requires soil analysis for a specified list of inorganic and organic chemicals at construction sites where: (1) at least 50 cubic yards of soil are disturbed; (2) there is construction on the bayside of the 1906 high-tide line; or (3) there is reason to believe that hazardous waste may be present. In some cases, the fill material contains contaminants, including predominantly petroleum-based chemicals and heavy metals. The depth to groundwater in the project area near the shore is estimated to range from 6 to 15 feet (Black & Veatch, 2012).

PG&E's Proponent's Environmental Assessment (PEA) includes the results of an environmental information database search by Environmental Data Resources, Inc. (EDR) and the State Water Resources Control Board's (SWRCB) GeoTracker website for properties of potential environmental concern related to construction of the PG&E Embarcadero Potrero 230 kV Transmission Project. The EDR database included an environmental data search of federal, State and local directories listing sites with known releases of hazardous materials, facilities registered as hazardous waste generators, sites with registered underground storage tanks (USTs), and sites once considered likely to use or store hazardous substances. The EDR study identified all sites with active or closed environmental status within a 0.25-mile corridor either side of the onshore route segments (EDR, 2023). The database was reviewed for sites with the greatest potential for environmental impact to project components.

Three sites are listed in both the EDR database and the GeoTracker site with significant environmental contamination issues along the southern segment and at the proposed Potrero 230 kV Switchyard, as listed below and shown in Figure 5.8-1:

- ***Eastern Portion of 1201 Illinois Street, Former PG&E Potrero Power Plant, currently owned by GenOn Energy.*** The former PG&E Potrero Power Plant is part of the larger former Potrero Manufactured Gas Plant (MGP) Remediation Site. The Remediation Site was divided into seven work areas to facilitate the remediation process; four of these work areas encompass the former PG&E Potrero Power Plant,

now owned by GenOn Energy (PG&E, 2013). The primary impacts at this site are associated with MGP residues, but also include environmental impacts from the former operation of the Potrero Power Plant. Most investigation activities have been completed in the accessible areas. Other remediation activities, including conducting feasibility studies, health risk assessments, and remedial action plans, are in various stages of completion (PG&E, 2012a). Contaminants found at this site include naturally occurring asbestos, heavy metals, polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPH), and volatile organic compounds (VOCs) (SWRCB, 2013). The naturally occurring asbestos contaminants found at the site are known to be associated with fill material that includes serpentinite which is found in bedrock at the site and surrounding areas. As owner of the site when the contamination occurred, PG&E is in the process of investigation and remediation at this site, under oversight by the SWRCB (PG&E, 2012a). PG&E is in the process of developing a Site Management Plan (SMP) for the excavation of subsurface materials for the western portion (Station A area) of the GenOn Energy property (SWRCB, 2013). This SMP for the former Potrero Power Plant is likely to be similar to the SMP that has already been approved for Potrero Switchyard, described below (PG&E, 2012a).

- **Western Portion (Parcels 1 and 2) of 1201 Illinois Street, Potrero Switchyard, PG&E.** The primary impacts at the site are associated with MGP residues, but also include environmental impacts from historic operation of the switchyard, and are expected to be similar to those at the neighboring former power plant. A Covenant and Environmental Restriction on Property was filed by PG&E, approved by the RWQCB, and recorded by the City and County of San Francisco in January 2012 (SWRCB, 2013). The Environmental Restriction includes a SMP that applies to subsurface work within the specified property boundaries, requires that the RWQCB be notified of any excavation work involving more than 50 cubic yards of soil, and that any contaminated soil brought to the surface be managed in accordance with the SMP, in addition to applicable local, state, and federal laws (SWRCB, 2013).
- **435, 525, and 555 23rd Street, Trans Bay Cable Converter Station Site, Harrigan Weidenmuller Company.** This site is adjacent to the south of the former Potrero Power Plant. The site is impacted with heavy petroleum hydrocarbons, heavy metals, and PAHs in soil below a depth of 3 feet. A Covenant and Environmental Restriction on Property was filed by the owner, approved by RWQCB, and recorded by the City and County of San Francisco in January 2011 (RWQCB, 2013). This document requires adherence to a site specific Risk Management Plan (RMP) and SMP for all soil and groundwater disturbances (SWRCB, 2013). While the project does not include work within this site, contaminated groundwater may be encountered in project trenches near this site due to the shallow groundwater in the area, which could require that work in this area adhere to this site's RMP and SMP.

No sites with significant environmental contamination were identified along the northern onshore segment route in the EDR database or by GeoTracker, however numerous LUST and former and current UST sites were identified along this alignment (PG&E, 2012a). Most of the LUST sites are designated Case Closed (EDR, 2012; SWRCB, 2013). While the presence of these case closed LUSTs and UST sites along the alignment indicates a low potential for contamination along this portion of the transmission line, unknown contamination of the soil or shallow groundwater may have occurred.

The offshore segment of the transmission line passes near and through an area of known contaminated sediments in the vicinity of the former Potrero MGP. Known contaminants in the area include polynuclear aromatic hydrocarbons (PAHs), polybrominated diphenyl ethers (PBDEs), and polychlorinated biphenyls (PCBs). PG&E has conducted four phases of sediment investigations between 2009 and summer 2012. PG&E indicates that a Remedial Investigation (RI) Report, which will present the results of their recent investigations in the area, will be prepared this year, and a Remedial Action Plan, remedial design and permitting will be prepared in 2015 and 2016. Remediation of the area is anticipated in 2017 (PG&E, 2013). The estimated schedule for construction of the offshore segment of the transmission line

would be between June 2015 to November 2015 (PG&E, 2012a), which is before the anticipated PG&E remediation of the area, and thus contaminated sediment may be disturbed by the hydroplow during cable installation.

Schools

The proposed transmission line route would be adjacent to a private day care center, the Bright Horizons/Marin Day School at Hills Plaza on Spear Street. No public schools would be within 0.25 miles of the Proposed Project components. However, two other nearby day care pre-schools would be located near project activity downtown, and their approximate distances are listed below:

- Bright Horizons at 221 Main Street. Located approximately 300 feet northwest of north segment.
- Bright Horizons/Marin Day Schools at 220 Spear Street. Located approximately 400 feet northwest of north segment.

Airports and Airstrips

No public airports or private airstrips are within 2 miles of the Proposed Project.

Electric and Magnetic Fields

As described in Section 4.15, electric voltage and electric current from transmission lines create electromagnetic fields (EMF). Possible health effects associated with exposure to EMF have been the subject of scientific investigation since the 1970s, and there continues to be public concern about the health effects of EMF exposure. However, EMF is not addressed here as an environmental impact under CEQA. The CPUC has repeatedly recognized that EMF is not an environmental impact to be analyzed in the context of CEQA because (1) there is no agreement among scientists that EMF does create a potential health risk, and (2) there are no defined or adopted CEQA standards for defining health risks from EMF. Section 4.15 presents information about EMF, current magnetic fields in the project area, and PG&E's proposed measures to reduce magnetic fields in accordance with CPUC requirements.

Applicable Regulations

Hazardous substances are defined by federal and State regulations that aim to protect public health and the environment. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. Hazardous materials are defined in the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), the California Health and Safety Code, Division 20, Chapter 6.5, and the California Code of Regulations (CCR), Title 22, Div. 4.5, Chapter 11.

A hazardous material is defined by the California Code of Regulations as follows: any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

The CCR provides the following definition of hazardous waste.

A material may be defined as hazardous waste if it has one or more of the following characteristics:

(1) a waste that may (A) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (B) pose a substantial present or potential hazard to human health or the environment when it is improperly treated, stored, transported, disposed of or otherwise managed; and

(2) the characteristic can be: (A) measured by an available standardized test method which is reasonably within the capability of generators of waste or private sector laboratories that are certified by the Department pursuant to Chapter 44 of this division and available to serve generators of waste; or (B) reasonably detected by generators of waste through their knowledge of their waste.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered to be a hazardous waste if it exceeded criteria outlined in CCR Title 22, Div. 4.5, Chapter 11 or criteria identified by oversight agencies such as the DTSC or the local CUPA. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials occurs; it may also be required if certain other activities occur. Even if soils or groundwater at a contaminated site do not have the characteristics required to be defined as hazardous wastes, remediation of the site may be required by regulatory agencies subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal

The federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the “cradle to grave” system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

CERCLA, including the Superfund program, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

State

The California Environmental Protection Agency (Cal/EPA) was created in 1991, which unified California’s environmental authority in a single cabinet-level agency and brought the Air Resources Board (ARB), State Water Resources Control Board (SWRCB), Regional Water Quality Control Boards (RWQCBs), Integrated Waste Management Board (IWMB), DTSC, Office of Environmental Health Hazard Assessment (OEHHA), and Department of Pesticide Regulation (DPR) under one agency. These agencies were placed within the Cal/EPA “umbrella” for the protection of human health and the environment and to ensure

the coordinated deployment of State resources. Their mission is to restore, protect and enhance the environment, to ensure public health, environmental quality, and economic vitality.

The California Hazardous Waste Control Law (HWCL) is administered by Cal/EPA to regulate hazardous wastes. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Department of Toxic Substance Control (DTSC) is a department of Cal/EPA and is the primary agency in California that regulates hazardous waste, cleans-up existing contamination, and looks for ways to reduce the hazardous waste produced in California. DTSC regulates hazardous waste in California primarily under the authority of RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning.

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for worker safety in the handling and use of chemicals in the workplace. Cal/OSHA standards are generally more stringent than federal regulations. The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (8 CCR Sections 337-340.2). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.

In 1993 the State (Cal/EPA) was mandated by Senate Bill 1082 (Health and Safety Code Chapter 6.11) to establish a “unified hazardous waste and hazardous materials management” regulatory program (Unified Program). The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the following six environmental and emergency response programs:

- Hazardous Materials Release Response Plans and Inventories (Business Plans),
- California Accidental Release Prevention (CalARP) Program,
- Underground Storage Tank Program,
- Aboveground Petroleum Storage Act,
- Hazardous Waste Generator and Onsite Hazardous Waste Treatment (tiered permitting) Programs,
- California Uniform Fire Code: Hazardous Material Management Plans and Hazardous Material Inventory Statements.

The Unified Program is implemented at the local level by various local government agencies certified by the Secretary of Cal/EPA. These agencies, known as Certified Unified Program Agencies (CUPA), implement all of the Unified Program elements and serve as a local contact for area businesses. The San Francisco Department of Public Health (SFDPH), Environmental Health Section is certified by Cal/EPA as the CUPA for the City and County of San Francisco.

Local

While the project is not subject to local discretionary regulations, being under exclusive CPUC jurisdiction for the siting, design, and construction of the project, the following local City and County of San Francisco regulation is provided for informational purposes and to assist with CEQA review. Although PG&E is not subject to local discretionary permitting for this project, ministerial permits that could trigger the Maher Ordinance such as a building permit for Potrero Switchyard will be secured, as required.

The 1986 Maher Ordinance No.258-86 (San Francisco Public Health Code 22A), as amended, requires an investigation of hazardous materials in soil at certain construction sites as a prerequisite for any building permit (San Francisco Public Works Code). The Maher Area includes areas of San Francisco bayward of the pre-1906 earthquake high tide line (SFDPH, 2012). These areas of San Francisco are largely underlain by artificial fill in areas where past industrial land uses and debris fill from 1906 earthquake and Bay reclamation often left hazardous residue in local soils and groundwater. The Maher Ordinance was developed to protect workers and citizens from exposure to potential hazardous waste during project construction. The Maher Ordinance requires that, if more than 50 cubic yards of soil are to be disturbed and the project is on fill, or is at a location designated for investigation by the SFDPH, applicants for building permits must, among other things, analyze the site’s soil for hazardous materials.

Applicant Proposed Measures

PG&E proposes to implement measures during the design, construction, and operation of the Proposed Project to ensure it would occur with minimal environmental impacts in a manner consistent with applicable rules and regulations. Applicant Proposed Measures (APMs) are considered part of the Proposed Project in the evaluation of environmental impacts. CPUC approval would be based upon PG&E adhering to the Proposed Project as described in this document, including this project description and the APMs, as well as any adopted mitigation measures identified by this Initial Study (see Table 5.8-1).

Table 5.8-1. Applicant Proposed Measures (APMs) Related to Hazards and Hazardous Materials

APM Number	Issue Area
Hazards and Hazardous Materials	
APM HM-1	<p>Implementation of Hazardous Material and Emergency Response Procedures. PG&E will implement construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction. These construction practices include construction worker training appropriate to the site worker’s role (see APM HM-3), and containment and spill control practices in accordance with the Stormwater Pollution Prevention Plan (see APM WQ-1). If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable.</p> <p>Soil that is suspected of being contaminated (on the basis of existing analytical data or visual, olfactory, or other evidence) and is removed during trenching or excavation activities will be segregated, tested, and if contaminated above hazardous levels, will be contained and disposed of offsite at a licensed waste facility. The presence of known or suspected contaminated soil will require testing and investigation procedures to be supervised by a qualified person, as appropriate, to meet state and federal regulations.</p> <p>All hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. Practices during construction will include, but not be limited to, the following:</p> <ul style="list-style-type: none"> ▪ Proper disposal of potentially contaminated materials. ▪ Site-specific buffers for construction vehicles and equipment located near sensitive resources/receptors. ▪ Emergency response and reporting procedures to address any potential hazardous material spills as described in PEA Section 3.9, Hydrology and Water Quality. ▪ Stopping work at that location and contacting the CUPA (SFDPH Environmental Health Section; see PEA Section 3.8.2.1 above) immediately if unanticipated visual evidence of potential contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the CUPA or other entities as specified by the CUPA. <p>For the O&M phase of the project, existing operational hazardous substance control and emergency response plans will be updated as appropriate to incorporate necessary modifications resulting from this project.</p> <p><i>(Also see APM WQ-1 and APM WQ-3 in PEA Section 3.9.4.2)</i></p>

Table 5.8-1. Applicant Proposed Measures (APMs) Related to Hazards and Hazardous Materials

APM HM-2	<p>Development and Implementation of a Health and Safety Plan. PG&E will prepare a project-specific health and safety (H&S) plan prior to project construction. The purpose of the plan is to minimize potential safety hazards to site construction workers. The H&S plan will outline the project team H&S responsibilities; present job safety analyses, H&S procedures, and personal protective equipment requirements; establish worker training and monitoring requirements; and describe emergency response procedures relevant to project activities. Each contractor will be responsible for preparing and submitting to PG&E their own H&S Plan specific to their activities using the PG&E Plan for project-specific information.</p> <p>For the O&M phase of the project, existing H&S plans for Potrero Switchyard and Embarcadero Substation will be modified and adhered to as appropriate.</p>
APM HM-3	<p>Adherence to Applicable Site-specific RMPs and SMPs. In addition to following its own project-specific procedures during the construction phase, PG&E will adhere to any applicable site-specific plans such as the SMP for the former Potrero Power Plant (see PEA Section 3.8.3.1), as well as the Maher Ordinance (see PEA Section 3.8.2.1).</p>
APM HM-4	<p>Emergency Spill Supplies and Equipment. Oil-absorbent material, tarps, and storage drums will be available on the project site during construction and used to contain and control any minor releases of oil. In the event that excess water and liquid concrete escapes during pouring, it will be directed to lined and bermed areas adjacent to the borings, where the water will evaporate and the concrete will begin to set. Once the excess concrete has been allowed to set up, it will be removed and transported for disposal, according to applicable regulations.</p> <p><i>(Also see APM WQ-4.)</i></p>
APM HM-5	<p>Soil, Groundwater, and Underground Tank Characterization. In areas where existing data are not available, soil and groundwater sampling and potholing will be conducted in onshore project areas before construction begins. Appropriate handling, transportation, and disposal locations will be determined based on results of the analyses performed on soil and groundwater. In addition, results will be provided to contractor and construction crews to inform them about soil and groundwater conditions and potential hazards. The location, distribution, and/or frequency of the borings will give adequate representation of the conditions in the construction area.</p> <p>If suspected hazardous substances are unexpectedly encountered during trenching or other construction activities (using indicators such as sheen, odor, soil discoloration), work will be stopped until the material or tank is properly characterized and appropriate measures are taken to protect human health and the environment. Appropriate personal protective equipment will be used and waste management will be performed in accordance with applicable regulations. If excavation of hazardous materials is required, the materials will be disposed of in accordance with applicable regulations. If necessary, groundwater will be collected during construction, contained, and disposed of in accordance with all applicable regulations.</p> <p>If underground or aboveground storage tanks are found to be located along the project route and the route cannot be adjusted to avoid disturbance, the tanks will be removed prior to project construction. If it is determined that removal and disposal of tanks is necessary, a separate workplan describing the proper decommissioning and removal of the tanks and removal of any associated impacted soil will be prepared prior to removal.</p> <p><i>(Also see APM WQ-5.)</i></p>
APM HM-6	<p>Horizontal Directional Drilling (HDD) Drilling Fluid and Cuttings Monitoring and Management. HDD operations will include provisions for monitoring for loss of drilling fluids. Spill response measures shall include reducing fluid pressures and thickening the fluid mixture. Both the drilling technique and early detection and response shall be used to minimize release of fluids to the environment. A Frac-out Plan will be developed and prepared based on site specific conditions and specific contractor methods and equipment.</p> <p><i>(Also see APM WQ-6 and APM WQ-7.)</i></p>

Table 5.8-1. Applicant Proposed Measures (APMs) Related to Hazards and Hazardous Materials

APM HM-7	<p>Sediment Testing Program for Submarine Cable Installation. As discussed above, sediments along the submarine cable route are located near known contaminated sediment areas (SFEI, 2012), and a Sampling and Analysis Plan will be prepared in coordination with the Dredged Material Management Office (DMMO) of the U.S. Army Corps of Engineers. Sediment sampling shall be performed at the locations where the HDD emerges into the Bay, and the results would be considered and addressed prior to commencement of construction near these locations. Potential contaminants such as PAHs and heavy metals are generally insoluble or have low solubility in water. Conducting sediment analysis of samples before the installation of the submarine cable will establish baseline conditions along the project route. The sediment testing program will be used to develop appropriate construction control measures that may include controlling turbidity during construction through adjustment of hydroplow jet controls and flows, turbidity monitoring during construction in certain areas, and appropriate handling and disposal of any sediment that may be removed as part of the submarine transitions to HDD installation.</p> <p><i>(Also see APM WQ-8.)</i></p>
APM WQ-1	<p>Development and Implementation of a Stormwater Pollution Prevention Plan (SWPPP). Stormwater discharges associated with project construction activities are regulated under the General Construction Permit. Cases in which construction will disturb more than one acre of soil require submittal of a Notice of Intent, development of a SWPPP (both certified by the Legally Responsible Person (LRP)), periodic monitoring and inspections, retention of monitoring records, reporting of incidences of noncompliance, and submittal of annual compliance reports. PG&E will comply with all General Construction Permit requirements.</p> <p>Following project approval, PG&E will prepare and implement a SWPPP, which will address erosion and sediment control to minimize construction impacts on surface water quality. The SWPPP will be designed specifically for the hydrologic setting of the Proposed Project in proximity to the San Francisco Bay. Implementation of the SWPPP will help stabilize graded areas and reduce erosion and sedimentation. The SWPPP will designate BMPs that will be adhered to during construction activities. Erosion and sediment control BMPs, such as straw wattles, erosion control blankets, and/or silt fences, will be installed in compliance with the SWPPP and the General Construction Permit. Suitable soil stabilization BMPs will be used to protect exposed areas during construction activities, as specified in the SWPPP. During construction activities, BMPs will be in place to address construction materials and wastes.</p> <p>BMPs, where applicable, will be designed by using specific criteria from recognized BMP design guidance manuals. Erosion and sediment-minimizing efforts will include measures such as the following:</p> <ul style="list-style-type: none"> ▪ Defining ingress and egress within the project site to control track-out ▪ Implementing a dust control program during construction ▪ Properly containing stockpiled soil <p>Identified erosion and sediment control measures will be installed in an area before construction begins and inspected and improved as needed before any anticipated storm events. Temporary sediment control measures intended to minimize sediment transport from temporarily disturbed areas, such as silt fences or wattles, will remain in place until disturbed areas are stabilized. In areas where soil is to be temporarily stockpiled, soil will be placed in a controlled area and managed with similar erosion-control techniques. Where construction activities occur near a surface water body or drainage channel, the staging of construction materials and equipment and excavation spoil stockpiles will be placed at least 50 feet from the water body and properly contained, such as with berms and/or covers, to minimize risk of sediment transport to the drainage. Any surplus soil will be transported from the site and appropriately disposed of.</p> <p>A copy of the SWPPP will be provided to the CPUC for recordkeeping. The plan will be maintained and updated during construction as required by the SWRCB.</p>
APM WQ-3	<p>Implementation of Hazardous Material and Emergency Response Procedures. PG&E will implement construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction.</p> <p>These construction practices include construction worker training appropriate to the site worker's role (see APM HM-3), containment and spill control practices in accordance with the SWPPP (see APM WQ-1), and emergency response to ensure appropriate cleanup of accidental spills. If it is necessary to store chemicals, they will be managed in accordance with all applicable regulations. Material safety data sheets will be maintained and kept available on site, as applicable. The project SWPPP (APM WQ-1) will identify areas where refueling and vehicle-maintenance activities and storage of hazardous materials, if any, will be permitted.</p> <p><i>(Also see APM HM-1.)</i></p>

Table 5.8-1. Applicant Proposed Measures (APMs) Related to Hazards and Hazardous Materials

APM WQ-4	<p>Emergency Spill Supplies and Equipment. Materials will be available on the project site during construction to contain, collect and dispose of any minor spill (for example, absorbent material, tarps, and storage drums). In the event that excess water or liquid concrete escapes during pouring activities, it will be directed to lined and bermed areas adjacent to the borings, where the water will evaporate and the concrete will begin to set. Once the excess concrete has been allowed to set up, it will be removed and transported for disposal, according to applicable regulations.</p> <p><i>(Also see APM HM-4.)</i></p>
APM WQ-5	<p>Soil Sampling/Wastewater and Groundwater Characterization. Soil sampling and potholing will be conducted in onshore project areas before construction begins, and soil information will be provided to construction crews to inform them about soil conditions and potential hazards. If hazardous substances are unexpectedly encountered during trenching, work will be stopped until the material is properly characterized and appropriate measures are taken to protect human health and the environment. If excavation of hazardous materials is required, they will be handled in accordance with applicable regulations.</p> <p>Prior to initiating excavation activities along the underground transmission cable routes, soil borings will be advanced to identify areas where contaminated groundwater may be contacted. The location, distribution, and/or frequency of the borings will give adequate representation of the conditions in the construction area. If suspected contaminated groundwater is encountered at the depths of the proposed construction, samples will be collected and submitted for laboratory analysis of petroleum hydrocarbons, metals, volatile organic compounds, and semi-volatile organic compounds. If necessary, groundwater will be collected during construction, contained, and disposed of in accordance with all applicable regulations. Appropriate personal protective equipment will be used and waste management will be performed in accordance with applicable regulations. Non-contaminated groundwater will be released to one of the city's combined sanitary and stormwater drainage systems (with prior approval) or contained, tested, and disposed of in accordance with applicable regulations.</p> <p><i>(Also see APM HM-5.)</i></p>
APM WQ-6	<p>Horizontal Directional Drilling (HDD) Monitoring and Management. HDD operations will include best management practices for monitoring for loss of drilling fluids, spill containment and response measures. Monitoring and response measures specific to the site subsurface conditions and construction equipment will be included in a Frac-out Plan. The objectives of this monitoring program are to quickly identify any unplanned release of drilling fluids during drilling; determine the size, extent, and location of the release; and evaluate and implement appropriate containment and cleanup measures after a release has occurred. Routine monitoring will be conducted at regular intervals during all drilling activities. More intensive monitoring will be implemented if drilling fluid circulation to the HDD endpoints is lost or an unplanned release is detected.</p> <p>In general, both the drilling technique and early detection and response shall be used to minimize release of fluids to the environment. Techniques to minimize potential loss of drilling fluids include termination of the pilot hole short of the exit into the bay, monitoring of fluid pressures, and adjustments to the drilling fluid mix (see PEA Section 2.6.4, Submarine Cable Installation.) To minimize any potential impacts to water quality, drilling muds (which are heavier than water) shall consist of naturally occurring materials such as water and bentonite clay, plus inert, non-toxic polymers. Monitoring measures that will be included in the Frac-out Plan include use of dyes in the fluid, use of a fluorometer to determine dye concentrations in the water column, and monitoring by divers or side scan sonar in the event of loss of circulation of the fluid; potential responses to a release include measures such as reductions in drilling pressure, thickening of the fluid mixture, and in the event of an emergency, cessation or substantial reduction of drilling and fluid circulation. On land, measures would include installation of spill control berms and pits. For a release in the water column, divers and side scan sonar will be used to track the extent and location of the release. Appropriate containment and clean-up measures will be employed depending on the amount and location of the release, including disposal of material. Waste drilling fluids will be collected in a manner that is in accordance with all local, state and federal regulations.</p> <p><i>(Also see APM HM-6 and APM WQ-7.)</i></p>
APM WQ-7	<p>Prevention of Contaminant Migration along HDD Route. The project will be designed to prevent contaminants along the HDD route from leaching to the shoreline or bay via the boreholes of the HDD. In areas of contamination (as determined by soil and sediment sampling) the HDD conduit can be sealed to effectively plug voids that might permit movement of contaminants down the HDD drill path after the HDD initial drill is established and the HDD conduit is being pulled into position. In the event that contaminants are found during pre-construction sampling, in areas where contaminants are found and where there are potential voids between the conduit and surrounding soil the voids will be filled with grout or similar material to prevent any potential preferential pathway for the passage of contaminants, as described below.</p>

Table 5.8-1. Applicant Proposed Measures (APMs) Related to Hazards and Hazardous Materials

APM WQ-8	<p>Sediment Testing Program and Sediment Controls for Submarine Cable and Offshore HDD Intercept. Sediments along the submarine cable route are located near known contaminated sediment areas (SFEI, 2012), and may be contaminated with PAHs, metals, and/or pesticides. These compounds are generally insoluble or have low solubility in water. Sediments will be temporarily disturbed during hydroplow operations and during excavation of the HDD exit pits. In coordination with the DMMO, PG&E will prepare a Sampling and Analysis Plan for the sampling and analysis of sediment along the submarine cable route and where the HDD exits into the Bay. As part of preparation and implementation of the Sampling and Analysis Plan, surveys will be conducted to examine water depths, slopes, sediment types, potential contaminants, and any other activities or obstacles. Sensitive habitats, cultural resources, existing and abandoned pipelines, old cables, and material discarded on the bottom of the Bay will be located to ensure the new cable will be installed so as to avoid these conflicts or obstacles. In cases where a cable must cross a pipeline or existing cable, arrangements will be made with the owner of the existing installation to establish necessary separations between each installation (ICPC, 2009).</p> <p>The HDD offshore exits were selected far enough into the Bay to minimize the potential for encountering near-shore contaminated sediments. At an HDD exit location, it is a common practice to deploy divers to excavate a collection pit approximately 100 to 400 square feet and 6 feet deep at the exit point depending on final design. The results of the sediment sampling will be used to plan the appropriate handling of sediment resulting from the excavation of the HDD pit as determined in consultation with the DMMO. As the HDD is installed, drilling muds, which are heavier than water, will collect in this excavated collection pit. A barge on the surface is used during HDD installation to pump these drilling muds into a containment tank on the barge/ship for appropriate disposal. Hydroplow installation causes temporary disturbance of sediments. Most of the fluidized material falls back behind the hydroflow jets and increases in turbidity along the narrow path of the jets are minimized. Turbidity is limited by controlling the pressure of the jets and the rate of hydroplow advancement. The hydroplow is instrumented to enable measurement and control of pressure and tow tension.</p> <p><i>(Also see APM HM-7.)</i></p>
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5.8.2 Environmental Impacts and Mitigation Measures

a. *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

LESS THAN SIGNIFICANT – CONSTRUCTION. No acutely hazardous materials would be associated with construction, maintenance, or operation of the project. During construction, hazardous materials would be limited to substances associated with construction vehicles and equipment, such as cleaning solvents, paints, adhesives, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids. Any chemicals used and stored at construction yards or onsite for the project would be managed in accordance with all applicable regulations, and all hazardous materials and hazardous wastes will be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials (PG&E, 2012a). PG&E would implement the following hazardous material control measures as part of APMs HM-1 through HM-4: construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction; any chemicals stored onsite for the project would be managed in accordance with all applicable regulations; all hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials; Material Safety Data Sheets (MSDS) would be maintained and kept available on site, as applicable; and emergency spill supplies and equipment will be available during construction and used in the event of minor releases of oil or other construction-related fluids. Additionally, as specified under APM WQ-1, PG&E would prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) that would include erosion control and pollution prevention measures during construction activities.

Implementation of APMs HM-1 (Implementation of Hazardous Material and Emergency Response Procedures), HM-2 (Development and Implementation of a Health and Safety Plan), HM-4 (Emergency Supplies and Equipment), and WQ-1 (Development and Implementation of a Stormwater Pollution Prevention Plan) for all portions of the project would ensure that any hazardous materials used and stored as part of project construction are handled, stored, and disposed of in accordance with all applicable regulations, thus limiting the potential for exposure of the public or environment to hazardous materials.

Construction of the offshore portion of the transmission line could potentially expose the bay environment to contamination from drilling fluids, and while most drilling fluids are not considered hazardous substances, they could cause contamination of the sediment and water in the bay that is harmful to the native flora and fauna. Implementation of APMs HM-6 (Horizontal Directional Drilling [HDD] Drilling Fluid and Cuttings Monitoring and Management, see also WQ-6) for the offshore portions of the project would reduce the potential for drilling fluid to cause offshore contamination, thus impacts would be less than significant.

Components of the Proposed Project where ground disturbance would occur would be susceptible to encountering existing known and unknown environmental contamination. The likelihood of encountering contamination would be high in the vicinity of commercial or industrial sites with known contamination or adjacent to sites that store and use large quantities of hazardous materials where unknown contamination may be present. The proposed ground disturbing activities would be as follows:

- Trenching and excavation for the duct banks, vaults, and underground transmission line sections connecting to the Potrero Switchyard and Embarcadero Substation. Materials removed during trench excavation would be placed directly into trucks and removed from the area and disposed of off-site. The estimated total amount of excavated materials to be disposed of would be 6,000 cubic yards (cy) for duct bank and vaults.
- Horizontal directional drilling at the two HDD transitions from land to the submarine environment, with each transition location involving three HDD borings approximately 1,000 feet in length, excavation for HDD entry pits, splice vaults, and offshore dredging for the exit pit to collect drilling mud. The estimated total amount of excavated materials to be disposed of for the onshore HDD entry pits would be 300 cy.
- Grading and excavation for construction of the new Potrero 230 kV Switchyard near the existing Potrero 115 kV Switchyard. Soil contamination is known to exist at the proposed switchyard site and up to 8,000 cy of contaminated soil removal would be required.
- Installation of the offshore transmission line at generally a minimum depth of 6 feet under the surface of the San Francisco Bay sediments by using a hydroplow pulled along the seabed behind a barge. The majority of the fluidized sediments behind the blade would fall back into the trench, effectively burying the cable and avoiding the need to dredge excavated materials along the submarine transmission line route.

Contaminated soil that would be encountered during onshore construction along the southern segment, and potentially along the northern segment, and that could be classified as hazardous material would be excavated and transported to disposal sites. In areas of known or potential environmental contamination, APM HM-5 (Soil, Groundwater, and Underground Tank Characterization) would be implemented prior to project construction to verify the presence or absence of environmental contamination and develop and implement appropriate handling and disposal practices for contaminated soil or groundwater. In the event previously unknown suspected soil or groundwater contamination is encountered during construction, as part of APM HM-5, work would be stopped until the material is characterized by

laboratory testing and appropriate handling and disposal methods have been emplaced. Additionally implementation of APM HM-1 (Implementation of Hazardous Material and Emergency Response Procedures), APM HM-2 (Development and Implementation of a Health and Safety Plan), APM HM-3 (Adherence to Applicable Site-specific RMPs and SMPs), and APM HM-4 (Emergency Supplies and Equipment), which require adherence to hazardous material and emergency response procedures, a project-specific SWPPP, and project-specific health and safety plans, would ensure that impacts from excavation of contaminated soil or groundwater would be less than significant.

As part of APM HM-7 (Sediment Testing Program for Submarine Cable Installation) (see also APM WQ-8), bay sediment excavated for the HDD exit pits would be sampled and handled according to a Sampling and Analysis Plan in coordination with the DMMO. As part of the APM the flow rate of the pressure jets and the rate of hydroplow advancement would be adjusted in areas of contamination to limit turbidity and potential migration of contaminated sediments within the offshore portions of the transmission line. APM HM-7 (WQ-8) would be implemented prior to construction of the offshore segment of the transmission line to ensure impacts from underwater excavation of contaminated soil would be less than significant.

LESS THAN SIGNIFICANT – OPERATION AND MAINTENANCE. Hazardous materials such as lubricating and cooling oils at the switchyard and motor vehicles fluids associated with line inspection vehicles would be used during operation and maintenance of the proposed switchyard at Potrero, at Embarcadero Substation, and along the transmission line. PG&E's existing hazardous substance control and emergency response plans to be used during the operation and maintenance phases of the project would be updated as appropriate to incorporate necessary modifications resulting from this project. The health and safety plans for Potrero Switchyard and Embarcadero Substation would be modified and adhered to as appropriate, as specified in APM HM-1 (Implementation of Hazardous Material and Emergency Response Procedures) and APM HM-2 (Development and Implementation of a Health and Safety Plan). Implementation of these measures would result in a less than significant impact during operation and maintenance of the project.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

LESS THAN SIGNIFICANT. Leaks or spills of cleaning solvents, paints, adhesives, lubricants, vehicle fuels, oil, hydraulic fluid, and other vehicle and equipment maintenance fluids could occur during project construction or operation and maintenance activities, and could result in soil or groundwater contamination. PG&E would implement the following hazardous material control measures as part of APMs HM-1 through HM-4: construction controls, training and communication to minimize the potential exposure of the public and site workers to potential hazardous materials during all phases of project construction; any chemicals stored onsite for the project would be managed in accordance with all applicable regulations; all hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations by personnel qualified to handle hazardous materials; Material Safety Data Sheets (MSDS) would be maintained and kept available on site, as applicable; and emergency spill supplies and equipment will be available during construction and used in the event of minor releases of oil or other construction-related fluids (PG&E, 2012a). Additionally, as specified in APM WQ-1, PG&E would prepare and implement a SWPPP that would include pollution prevention measures during construction.

Also, as discussed in Item (a) above, contaminated soil that could be excavated and classified as hazardous material would be transported to disposal sites during the onshore construction process, potentially exposing the public to hazardous materials.

To address long-term operation and maintenance of the project, PG&E's existing facilities include operational hazardous substance control and emergency response plans that would be updated and adhered to as required by APM HM-2. The Potrero Switchyard and Embarcadero Substation Health and Safety Plans would incorporate necessary modifications resulting from project construction at these facilities (APM HM-2) (PG&E, 2012a).

Implementation of the required SWPPP, personnel training for construction and operation of the Proposed Project, and APMs HM-1 through HM-6 for spill prevention and hazardous substance control and disposal would reduce the potential impact from upset or accidental spills of hazardous materials to a less than significant level.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

LESS THAN SIGNIFICANT. Hazardous materials to be used during the construction and operation of the Proposed Project would consist of low toxicity materials including gasoline, diesel fuel, oil, and lubricants associated with construction and switchyard equipment and vehicles. While there are two identified schools located within 0.25 miles of the northern segment of the proposed 230 kV transmission line, the low toxicity of the materials associated with the project, proper handling, storage, and disposal practices of all hazardous materials in accordance with applicable regulations, and implementation of APMs HM-1 and HM-2 would reduce impacts to area schools to a less than significant level.

d. Would the project be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

LESS THAN SIGNIFICANT. The southern segment of the proposed 230 kV transmission line and the proposed 230 kV switchyard would be located on and adjacent to several sites that are or have been listed as hazardous material sites. These include the GenOn property on the eastern portion of 1201 Illinois Street (former PG&E Potrero Power Plant and former Potrero MGP), the existing Potrero 115 kV Switchyard on the western portion of 1201 Illinois Street, and the Trans Bay Cable Converter Station on the southern side of 23rd Street. Both the existing PG&E switchyard and the Trans Bay Cable sites are now designated Case Closed by the RWQCB and have deed restrictions and Site Management Plans which have specific requirements for projects at the sites that include restrictions regarding disturbance of the subsurface soil and extraction of groundwater from the subject properties. The GenOn site of the proposed 230 kV switchyard is still under active regulatory oversight by the Regional Water Quality Control Board, San Francisco Bay Region. PG&E is in the process of preparing a Site Management Plan (SMP) to protect site users from exposure to residual contaminants under current site conditions and to ensure that any soil or contaminated groundwater underneath the cap that becomes exposed during routine construction operations is handled and disposed of in an appropriate manner, and appropriate worker protection is used during excavation to protect them from exposure to known contaminants. Implementation of APMs HM-3 and HM-5 would ensure that construction activities at known hazardous materials sites will have less than significant impacts. Generally operations and maintenance activities for the project would not include ground disturbance, however, in the event disturbance of soil and/or groundwater becomes necessary at the listed hazardous materials sites for maintenance activities, PG&E would be required to

follow the soil management plans and other policies in place as directed by the RWQCB or other regulatory agency, resulting in a less than significant impact.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. The project would not be within an airport land use plan nor within two miles of an airport. As such, no impact would occur.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

NO IMPACT. There are no private airstrips in the vicinity of the project. As such, no impact would occur related to safety of people residing or working in the project area.

g. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

LESS THAN SIGNIFICANT. Construction-related temporary travel lane closures or disruptions that would be necessary during construction or operation and maintenance would be coordinated as specified in Transportation and Traffic APM TR-1 (Traffic Management Implementation). Additionally, any road closures would follow applicable regulations and would not impede emergency response. The project would not impair the implementation of or physically interfere with an adopted emergency response or evacuation plan; therefore, the impact that would occur related to emergency response during construction would be less than significant. Operation and maintenance of the Proposed Project would not increase demands on existing emergency response services and would therefore have no impact on adopted emergency response plans or emergency evacuation plans.

h. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

NO IMPACT. There are no wildlands within the project area, and the San Francisco area is not included on the CAL FIRE wildland fire hazard maps (CAL FIRE, 2013); therefore, the project would have no impact related to wildland fires.

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Data Sources: PG&E, 2013 and SWRCB, 2013.

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