

## ***12 HAZARDOUS MATERIALS***

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## **12 HAZARDOUS MATERIALS**

This chapter describes the existing conditions in the project area with respect to hazardous materials and the applicable laws and regulations, identifies the potential hazardous material used at the Montezuma II Wind Energy Project, evaluates the significance of potential accidental releases, and proposes mitigation for impacts found to be significant.

Most of the analysis in this chapter is based on a Phase I Environmental Site Assessment conducted for the Applicant by Wallace Kuhl & Associates Inc. (WKA 2010). The objective of the study was to determine whether the properties within the project area were subject to the presence or likely presence of hazardous materials or wastes, including petroleum products, or if conditions indicated an existing release, past release, or material threat of a release into the ground, groundwater, or surface water. A release of hazardous materials could adversely affect other resources such as biological resources, water quality, or public safety.

Point Impact considered the Montezuma I Hazardous Materials Business Plan (HMBP) as a basis for the evaluation of potential hazardous materials stored on site during construction and operation of the Montezuma II Wind Energy Project. The construction contractor will prepare a HMBP prior to construction of Montezuma II.

Chapter 18, Safety, considers the potential hazards from wind development projects, including blade throw and potential impacts on transmission and collector lines.

### **12.1 HAZARDOUS MATERIALS SETTING**

The Phase I Environmental Site Assessment investigated the proposed project area to describe its environmental setting and to evaluate the potential presence of hazardous waste or materials. The proposed project area has historically been used for grazing and dry-land farming. Investigations within the “unconstrained” projects area revealed the presence of groundwater wells, abandoned natural gas wells, a natural gas pipeline, and transmission lines. The “unconstrained” areas are areas within the project boundaries not located within specified setbacks for existing residences, roads, power lines, or special biological concerns. The Phase I Environmental Site Assessment found no evidence of existing or past release of hazardous substances or petroleum products in this area.

The following provides summary definitions of hazardous materials and hazardous waste:

- **Hazardous Material:** Hazardous materials include a broad range of materials, such as explosives, flammable and combustible substances, poisons, radioactive materials, pesticides, and petroleum products. These materials are most often released as a result of motor vehicle or equipment accidents or because of chemical accidents during industrial use. These materials have the potential to leach into soils, surface water, and groundwater due to spills if not properly contained (FEMA 2010).
- **Hazardous Waste:** A waste may be considered hazardous if it exhibits certain hazardous properties (“characteristics”) or if it is included on a specific list of wastes that the U.S. Environmental Protection Agency (EPA) has determined are hazardous (“listing” a waste as hazardous). EPA's regulations in the Code of Federal Regulations (40 CFR) define four

hazardous waste characteristic properties: ignitability, corrosivity, reactivity, or toxicity (40 CFR 261.21-261.24) (EPA 2010).

Exposure to hazardous materials or wastes can occur during normal use, handling, storage, transportation, and disposal. Exposure may also occur due to the presence of hazardous compounds in the environment such as fuels in underground storage tanks, pipelines, or areas where chemicals have leaked into the soil or groundwater.

### **12.1.1 Current and Historical Uses**

Historical uses of the project area were determined by interviewing property owners or site managers, comparing historical aerial photographs from 1937 to 2005 and historical topographic maps to the current conditions of the site. Records at the Solano County Department of Resource Management and the California Department of Conservation's Division of Gas, Oil, and Geothermal Resources (DOGGR) were also reviewed to determine the locations of petroleum and natural gas extraction infrastructure. In addition, a search of the available federal and State of California environmental regulatory agency records database was conducted to identify any listed sites within the Project area (WKA 2010).

In addition to the desktop study, geologists conducted on-site inspections to examine at close range the areas of interest that were identified during the review of the aerial photographs and database searches. These site visits included interviews of long-time residents and site managers who provided an oral history of past land uses. While on site, the geologists also attempted to identify any other environmental conditions that may have affected the project area since the last aerial photographic survey was completed in 2005 (WKA 2010).

#### ***Dry Land Farming***

The project area has been used for dry-land farming and livestock grazing since the 1860s or 1870s. These agricultural uses do not typically involve the use of persistent pesticides, and no records of such use were discovered.

Activities associated with dry-land farming and animal grazing that have the greatest potential for releasing hazardous materials or wastes into the soil or groundwater include repair, storage, and refueling of trucks and equipment; storage and disposal of equipment, fuel, lubricants, solvents, and batteries; and mixing and storage of herbicides and pesticides. These activities are almost always restricted to the immediate vicinity of permanent structures or roads because they require the use of a water supply, shelter from the elements, or vehicle access. Refuse dumps, although often located some distance from residences in agricultural areas, are usually situated in low hollows and ephemeral watercourses between hills, where they do not impede earth-tilling equipment. The Phase I study shows that since 1908 (topo map) all properties and roads have maintained their current positions. None of these properties would be modified as part of the Project. Because most Project features are located away from permanent facilities and watercourses, the potential for encountering hazardous materials or wastes during excavation is low.

### *Oil and Gas Wells*

Besides wind energy generation, the only significant non-agricultural use of the surrounding area is natural gas exploration and extraction, which has occurred in the area since the 1930s. The Project is not within a designated natural gas field. According to DOGGR there are two abandoned wells within the Project boundaries (DOGGR 2001).

The Phase I Environmental Site Assessment identified two wells within the Project area (Table 12.1-1). During the reconnaissance, WKA noted that neither of the two locations showed any visible remnants of the former drilling operations.

**Table 12.1-1**  
**WELLS WITHIN THE MONTEZUMA II WIND ENERGY PROJECT AREA**

<b>Operator</b>	<b>Parcel Number</b>	<b>Spud Date-</b>	<b>Abandon Date</b>	<b>Type</b>
UMC Petroleum Corp.	0048-120-030	8/8/1980	9/7/1980	Plugged and Abandoned
Pacific Gas & Electric Co.	0048-120-400	7/10/1921	5/1/1922	Plugged and Abandoned

*Source:* WKA 2010.

### *Aboveground Electrical Lines*

Three sets of tower mounted electrical lines cross the central and eastern portions of the site today. Two sets of PG&E high voltage 500-kV and 230-kV transmission lines transect the project area in a north-south direction. Aerial photographs indicate that the tower mounted transmission lines were installed by the 1950s. The Project will include a short 230-kV gen tie line into the 230-kV PG&E line. The project area also includes existing aboveground collector lines, local distribution lines, and service lines, which involve voltage levels of 50-kV and lower. Chapter 18, Safety, deals with the hazards associated with aboveground transmission and distribution electrical lines.

### *Underground Utilities*

The National Pipeline Mapping System (NPMS, 2008) identifies three natural gas pipelines located in or near the project area. The CPN Pipeline Company natural gas transmission pipeline, also referred to as the “Dow 8-inch line,” crosses the central portion of the site in a north-south direction. Two PG&E natural gas transmission pipelines (line 400 and 401) are located off-site to the east of the Project boundary.

### *Hazardous Waste Sites*

Based on the database search of available federal and State of California environmental regulatory agency records, no facilities located within the project area or within one-half mile of the project boundary are known to have experienced unauthorized hazardous materials releases, including Leaking Underground Storage Tanks (LUST). No abandoned or stored items of obvious hazardous material were observed on the site (WKA 2010).

### **12.1.2 Hazardous Materials Associated with the Montezuma II Wind Energy Project**

In addition to the potential for encountering hazardous materials during ground-disturbing activities, there is the potential for accidental releases of hazardous materials during construction, operation, and decommissioning of the Project. During construction and operation of the Project, the Applicant expects to use several materials that are considered to be hazardous, including fuels (diesel or gas), motor oil, grease, various lubricants, solvents, soldering equipment, and glues; however, quantities of these materials have not been specified.

The Bureau of Land Management (BLM) has produced a programmatic Environmental Impact Statement (EIS) for wind energy projects, which provides a guide to the typical hazardous materials used to construct and operate wind energy projects, their uses, and approximate quantities as shown in Table 12.1-2. While the BLM lists explosives as a hazardous material used during construction of typical wind energy facilities, the Applicant would not use explosives during project construction.

Construction of the Project would also produce solid waste such as used containers and shipping materials, in addition to wastes generated by the construction crew, including trash and food waste. Operational wastes would also include typical trash and food waste generated by maintenance crews. These wastes are expected to be non-hazardous and would be removed by commercial haulers periodically during construction and operation of the Project.

**Table 12.1-2  
HAZARDOUS MATERIALS ASSOCIATED  
WITH A TYPICAL WIND ENERGY PROJECT**

<b>Hazardous Material</b>	<b>Uses</b>	<b>Typical Quantities Present</b>
Fuel: diesel fuel <sup>1</sup>	<p>Powers most construction and transportation equipment during construction and decommissioning phases.</p> <p>Powers emergency generator during operational phase.</p>	Less than 1,500 gallons; stored in aboveground tanks during construction and decommissioning. <sup>2</sup>
Fuel: gasoline <sup>3</sup>	Most probable fuel for ambient heating of the control building.	Because of the limited number of construction and transportation vehicles utilizing gasoline, no on-site storage is likely to occur throughout any phase of the project.
Lubricating oils/grease/hydraulic fluids/gear oils <sup>4</sup>	<p>Lubricating oil is present in some wind turbine components and in the diesel engine of the emergency power generator.</p> <p>Maintenance of fluid levels in construction and transportation equipment</p> <p>Hydraulic fluid is used in the rotor driveshaft braking system and other controls.</p> <p>Gear oils and/or grease are used in the drive train transmission and yaw motor gears</p>	Limited quantities stored in portable containers (capacity of 55 gallons or less); maintained onsite during construction and decommissioning.
Glycol-based antifreeze	Present in some wind turbine components for cooling (e.g., 5 to 10 gallons present in recirculating cooling system for the transmission).	Limited quantities (10 to 20 gallons of concentrate) stored on site during construction and decommissioning.

**Table 12.1-2  
HAZARDOUS MATERIALS ASSOCIATED  
WITH A TYPICAL WIND ENERGY PROJECT**

<b>Hazardous Material</b>	<b>Uses</b>	<b>Typical Quantities Present</b>
	Present in the cooling system of the diesel engine for the emergency power generator.	Limited quantities (1 to 10 gallons of concentrate) stored on site during operational phase.
Lead-acid storage batteries and electrolyte solution	Present in construction and transportation equipment.	Limited quantities of electrolyte solution (<20 gallons) for maintenance of construction and transportation equipment during construction and decommissioning.
	Backup power source for control equipment, tower lighting, and signal transmitters.	
Other batteries (e.g. nickel-cadmium [NI-CAD] batteries)	Present in some control equipment and signal-transmitting equipment.	No maintenance of such batteries is expected to take place on site.
Cleaning solvents	Organic solvents (most probably petroleum-based but not RCRA-listed) used for equipment cleaning and maintenance.	Limited quantities (<55 gallons) on site during construction and decommissioning to maintain construction and transportation equipment.
	Where feasible, water-based cleaning and degreasing solvents may be used.	Limited quantities (<10 gallons) on site during operations.
Paints and coatings <sup>5</sup>	Used for corrosion control on all exterior surfaces of turbine towers.	Limited quantities (<50 gallons) for touch-up painting during construction.  Limited quantities (<20 gallons) for maintenance during operations.
Dielectric fluids <sup>6</sup>	Present in electrical transformers, bushings, and other electric power management devices as an electrical insulator.	Some transformers may contain more than 500 gallons of dielectric fluid.



**Table 12.1-2**  
**HAZARDOUS MATERIALS ASSOCIATED**  
**WITH A TYPICAL WIND ENERGY PROJECT**

Hazardous Material	Uses	Typical Quantities Present
Explosives	May be necessary for excavation of tower foundations in bedrock.	Limited quantities equal only the amount necessary to complete the task.
	May be necessary for construction of access and/or on-site roads or for grade alterations on site.	On-site storage expected to occur only for limited periods of time as needed by specific excavation and construction activities.
Pesticides	May be used to control vegetation around facilities for fire safety.	Pesticides would likely be brought to the site and applied by a licensed applicator as necessary.

*Source:* BLM 2005

1. Commercial vendors would replenish diesel fuel stored on site as necessary.
2. This value represents the total on-site storage capacity, not the total amounts of fuel consumed. See footnote a. On-site fuel storage during construction and decommissioning phases would likely be in three aboveground storage tanks with a capacity of 500 gallons. Tanks may be of double-wall construction or may be placed within temporary, lined earthen berms for spill containment and control. At the end of construction and decommissioning phases, any excess fuel, as well as the storage tanks, would be removed from the site, and any surface contamination resulting from fuel handling operations would be remediated. Alternatively, rather than store diesel fuel on site, the off-road diesel-powered construction equipment could be fueled directly from a fuel transportation truck.
3. Gasoline fuel is expected to be used exclusively by on-road vehicles (primarily automobiles and pickup trucks). These vehicles are expected to be refueled at existing off-site refueling facilities.
4. Delivered and replenished as necessary by a commercial vendor.
5. All wind turbine components, nacelles, and support towers would be painted at their respective points of manufacture. Consequently, no wholesale painting would occur on site; only limited amounts would be used for touch-up purposes during construction and maintenance phases. It is further assumed that the coatings applied by the manufacturer during fabrication would be sufficiently durable to last throughout the operational period of the equipment and that no wholesale repainting would occur.
6. Transformers, bushings, and other electrical devices that rely on dielectric fluids would have those fluids added during fabrication. However, very large transformers may be shipped empty and have their dielectric fluids added (by the manufacturer's representative) after installation. It is further assumed that servicing of electrical devices that involves wholesale removal and replacement of dielectric fluids would not likely occur on site and that equipment requiring such servicing would be removed from the site and replaced. New transformers, bushings, or electrical devices are expected to contain mineral-oil-based, or synthetic dielectric fluids that are free of PCBs; some equipment may instead contain gaseous dielectric agents (e.g., sulfur hexafluoride [SF<sub>6</sub>]) rather than liquid dielectric fluids.

## 12.2 HAZARDOUS MATERIALS REGULATORY SETTING

The principal federal regulatory agency is the EPA. Key federal, state, and local regulations pertaining to hazardous materials associated with the Project are provided in Table 12.2-1.

## 12.3 SIGNIFICANCE CRITERIA FOR HAZARDOUS MATERIALS IMPACTS

The evaluation of potential impacts from hazards related to construction and operation of the Project considered the following criteria. The Montezuma II Wind Energy Project would be considered to have an impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;
- Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Section Code 65962.5, and, as a result, would create a significant hazard to the public or the environment;
- Mobilize contaminants currently existing in the soil, creating potential pathways of exposure to humans or wildlife that would result in significant exposure to contaminants at levels that would be expected to be harmful; or
- Significantly contaminate soils or water within the Project area and, as a result, expose workers to contaminated or hazardous materials at levels in excess of those permitted by the California Occupational Safety and Health Administration (CAL-OSHA) in the California Code of Regulations (CCR) Title 8 and the federal Occupational Safety and Health Administration (OSHA) in Title 29 Code of Federal Regulations (CFR) Part 1910 or cause potential exposure of members of the public to direct or indirect contact with hazardous materials from Project construction or operations.

## 12.4 HAZARDOUS MATERIALS IMPACT ANALYSIS AND MITIGATION

Potential risks associated with construction, operation, and decommissioning of the Project range from accidental spills or releases of hazardous materials, mobilization of existing contamination through unanticipated encounter, and handling and disposal of hazardous materials.

### Impact HAZ-1: Potential Hazardous Materials Spills

Although the Applicant has not yet calculated the quantities of the hazardous materials that would be used during construction and operation, according to the BLM programmatic EIS for wind projects and common practices for wind energy facilities, the Project is not likely to require treatment, disposal, or transport of significant quantities of hazardous materials.

Nonetheless, the project will require the use of potentially hazardous materials. For example, transformer oil is typically stored for the long-term and used and handled during turbine maintenance and fuel and carburetor fluid may be used for equipment and motor vehicles during installation. Additionally, oil would likely be held in the substation transformers. If these materials were handled improperly or if containers leaked, workers or the public could be exposed to

**Table 12.4-1**  
**MAJOR REGULATORY REQUIREMENTS AND APPLICABLE PERMITS**

<b>Regulation/Plan – Responsible Agency</b>	<b>Key Elements and Thresholds; Applicable Permits</b>
Resource Conservation and Recovery Act (RCRA) – 40 CFR Parts 240-299 – EPA	<ul style="list-style-type: none"> <li>• Establishes a system for controlling hazardous waste from its point of origin to its final disposal.</li> </ul>
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) – EPA	<ul style="list-style-type: none"> <li>• Establishes prohibitions and requirements concerning closed and abandoned hazardous waste sites.</li> <li>• Provides for liability of persons responsible for release of hazardous waste at these sites.</li> <li>• Establishes a trust fund to provide for cleanup when no responsible party can be identified.</li> </ul>
National Oil and Hazardous Substances Pollution Contingency Plan (NCP) – EPA	<ul style="list-style-type: none"> <li>• Outlines requirements for responding to both oil spills and releases of hazardous substances.</li> <li>• Provides a comprehensive system for reporting, spill containment, and cleanup.</li> </ul>
Clean Water Act (CWA) – EPA	<ul style="list-style-type: none"> <li>• Establishes a basic structure for regulating discharges of pollutants into the waters of the United States.</li> <li>• Establishes pollution control programs such as setting wastewater standards for industry.</li> <li>• Sets water quality standards for all contaminants in surface waters.</li> <li>• Makes it unlawful for any person to discharge any pollutant from a point source into navigable waters without a permit.</li> </ul>
Spill Prevention, Control, and Countermeasures Plan (SPCC) – 40 CFR Part 112 – EPA	<ul style="list-style-type: none"> <li>• Requires facilities that store, handle, or produce a minimum of 1,320 gallons of petroleum products to prepare a plan to ensure that containment and countermeasures are in place to prevent release of hazardous materials to the environment.</li> </ul>
Superfund Amendments and Reauthorization Act (SARA) – EPA	<ul style="list-style-type: none"> <li>• Establishes a nationwide emergency planning and response program and reporting requirements for facilities that store, handle, or produce significant quantities of hazardous materials.</li> <li>• Identifies requirements for planning, reporting, and notification concerning hazardous materials.</li> </ul>
Occupational Safety and Health Standards (Title 29 CFR Part 1910 and 1926) – Occupational Safety and Health Administration (OSHA)	<ul style="list-style-type: none"> <li>• Provides regulations for safety in the workplace.</li> <li>• Provides regulations for construction safety.</li> </ul>

**Table 12.4-1**  
**MAJOR REGULATORY REQUIREMENTS AND APPLICABLE PERMITS**

<b>Regulation/Plan – Responsible Agency</b>	<b>Key Elements and Thresholds; Applicable Permits</b>
<p>Hazardous Waste Control Act (HWCA) (Title 22 CCR) – <i>California Environmental Protection Agency (Cal/EPA) and Solano County</i></p>	<ul style="list-style-type: none"> <li>• Outlines requirements for proper management and disposal of hazardous wastes. Solano County Department of Resource Management as the Certified Unified Program Agency enforces these laws and regulations in all of Solano County.</li> </ul>
<p>Porter Cologne Act – State Water Resources Control Board / Regional Water Quality Control Board (SWRCB/RWQCB)</p>	<ul style="list-style-type: none"> <li>• Gives authority to nine RWQCBs established to manage water quality daily and locally. These Boards have a number of functions, including establishing and enforcing water quality standards for both surface and groundwater and taking any and all actions needed to maintain the standards by controlling point and non-point sources of pollution.</li> </ul>
<p>Title 8, CCR Chapters 3, 4, and 7, Occupational and Industrial Safety – California Occupational Safety and Health Administration (Cal/OSHA)</p>	<ul style="list-style-type: none"> <li>• Establishes requirements for safe working conditions and safety-related reporting in the state.</li> </ul>
<p>Construction General Permit Order 2009-0009-DWQ – <i>State Water Resources Control Board</i></p>	<ul style="list-style-type: none"> <li>• The Applicant must submit a Storm Water Pollution Prevention Plan (SWPPP) to the RWQCB for all construction projects where ground disturbing activities would occur, regardless of the amount of acreage disturbed.</li> </ul>
<p>Title 19, CCR, Chapter 4, Hazardous Material Release Reporting, Inventory, and Response Plans – <i>Solano County</i></p>	<ul style="list-style-type: none"> <li>• Requires the reporting of <i>any</i> potential or actual release to the Department of Resource Management, the State Office of Emergency Services, and to the applicable Fire Agency.</li> <li>• Outlines requirements for the development of prevention and emergency response procedures for hazardous materials stored and used at a facility.</li> <li>• Requires businesses that handle hazardous materials in excess of 55 gallons for liquids, 500 pounds for solids, and 200 cubic feet for a compressed gas to develop a Hazardous Materials Business Plan.</li> </ul>

hazardous materials, and impacts could potentially be significant. However, the State Water Resources Control Board (SWRCB) requires the applicant to prepare a SWPPP per Construction General Permit Order 2009-0009-DWQ as detailed in Chapter 13, Hydrology and Water Quality, which would help reduce the risk and impacts resulting from accidental release of hazardous materials. To further minimize the potential for accidental releases of hazardous materials and provide mechanisms to address any spills that occur, the Applicant will implement the following mitigation measures, thus reducing potential impacts to less than significant levels.

**Mitigation Measure HAZ-1a: Proper Use and Storage of Materials.** Hazardous material inventories shall be required if chemicals stored on-site meet or exceed 55 gallons liquid, 200 cubic feet of gas and/or 500 pounds of solid, potentially hazardous materials. Hazardous material inventories shall be provided to and evaluated by the Department of Resource Management's Environmental Health Division. In accordance with the California Health and Safety Code and California Code of Regulations, the Applicant shall prepare, submit to the appropriate agency, and implement a Hazardous Materials Emergency Response Plan (Business Plan) and a Spill Prevention, Control, and Countermeasure (SPCC) Plan to avoid spills and minimize impacts in the event of a spill. The purpose of these plans is to ensure that adequate containment would be provided to control accidental spills, that adequate spill response equipment and absorbents would be readily available, and that personnel would be properly trained in how to control and clean up any spills.

The Applicant shall also ensure the following regarding these plans:

- a. The Applicant shall include as part of the Hazardous Materials Emergency Response Plan (Business Plan) a discussion of best practices to be used for hazardous materials management, including handling and storage procedures for all hazardous materials used on site, spill prevention procedures, access and egress routes, and notification procedures.
- b. The Applicant shall store and handle all paint, solvents, and any other hazardous materials in the manner specified by the manufacturer and in accordance with federal regulations and nationally and internationally recognized codes and standards. Small spray cans of carburetor fluid and other hazardous materials should be stored in an enclosed area in the Montezuma II Operations and Maintenance building. A material safety data sheet shall also be stored with each material.
- c. The plans shall be provided to all employees, including contractors, working on the Project, and one copy shall be available on site at all times.
- d. All employees shall be properly trained in the use and handling of these materials.
- e. Should a spill of hazardous material occur, the Solano County Department of Resource Management shall have jurisdiction over response and cleanup operations.
- f. The plans shall be certified by a professional engineer.

- g. The plans shall be submitted to the Solano County Department of Resource Management at least 30 days prior to construction.

**Mitigation Measure HAZ-1b: Waste Management Plan.** The Applicant shall prepare and implement a Waste Management Plan (Plan) in accordance with, and shall otherwise comply with, the following:

- a. The plan shall describe the storage, transportation, and handling of wastes, and emphasize the recycling of construction wastes where possible.
- b. The plan shall identify the specific landfills that would receive construction wastes that could not be recycled.
- c. The Applicant shall manage construction wastes in accordance with the Resource Conservation and Recovery Act (RCRA) (42 U.S.C. 6901, et seq. and RCRA's implementing regulations at 40 CFR 260, et seq.) and other applicable state and local regulations.
- d. The plan shall be submitted to the Solano County Department of Resource Management at least 30 days prior to construction. Commencement of construction shall not occur unless authorized by the County.

**Level of Significance with Mitigation: Less than Significant.**

#### **Impact HAZ-2: Encountering Hazardous Materials/Waste during Construction**

Grading, trenching, and other ground-disturbance activities could potentially encounter materials, which could expose the public, construction crews, workers, or wildlife to hazardous materials, especially due to the presence of abandoned natural gas wells in the area.

If any wells are uncovered or damaged during excavation or grading, remedial plugging operations may be required. DOGGR's Sacramento District office must be contacted to obtain information on the requirements for and approval to perform remedial plugging operations. DOGGR also recommends that no structure be built over or in proximity to an abandoned well location (DOGGR 2010). Chapter 18, Safety, contains additional information on setbacks to wells.

As described earlier, the hazardous wastes or materials likely to be released from agricultural land uses are almost always restricted to the immediate vicinity of permanent structures or roads or waterways. Such facilities and watercourses exist within the Project area; however, the potential for encountering these wastes or materials during excavation is low as no historic dump sites were identified during the Phase I Environmental Site Assessment and project facilities will be constructed away from structures and watercourses.

The Phase I Environmental Site Assessment indicates that there no properties within and adjacent to the Project site that have been used to dispose of or store hazardous materials. If hazardous materials/wastes were detected during construction activities, however, impacts would be reduced to less than significant with implementation of Mitigation Measure HAZ-2.

**Mitigation Measure HAZ-2: Plan for Encountering Contaminated Soil, Groundwater, Natural Gas Wells, and Other Hazards.** Prior to construction, the Applicant shall prepare, submit to the Solano County Department of Resource Management, and implement a written plan in accordance with the following:

- a. The plan shall specify proper handling, reporting, and disposal procedures to ensure proper protocols are followed in the event that hazardous materials are encountered unexpectedly during construction.
- b. The plan shall address the potential for unearthing or exposing buried hazardous materials or contamination or shallow contaminated groundwater during construction activities, likely within six feet of the surface.
- c. The plan shall detail the steps that the Applicant or its contractor shall take to prevent the migration of contaminated soils or other materials off site and the remedial action that will be undertaken.
- d. The plan shall be subject to review and approval by the Solano County Department of Resource Management prior to construction.
- e. The Applicant shall provide worker awareness training based on the plan prior to construction.
- f. At a minimum, construction crews shall stop work and notify the Department of Resource Management, and appropriate federal and state agencies, immediately after encountering any hazards.
- g. The Applicant shall review applicable maps of abandoned natural gas well locations prior to construction to ensure that no ground-disturbing activities will be conducted and no structures will be built over or in proximity to an abandoned well location.
- h. If any wells are inadvertently uncovered or damaged during excavation or grading, the Applicant shall immediately contact DOGGR's Sacramento District office to obtain information on the requirements for and approval to perform remedial operations, which the Applicant will perform upon DOGGR approval.
- i. A licensed waste disposal contractor shall remove the hazardous materials, once identified, from the site, according to federal, state, and local requirements.

**Level of Significance with Mitigation: Less than Significant.**

## 12.5 REFERENCES

Bureau of Land Management (BLM). 2005. Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States. U.S. Department of the Interior, Bureau of Land Management. June 2005.

Federal Emergency Management Agency (FEMA). 2010. Hazardous Materials. Retrieved from: <http://www.fema.gov/hazard/hazmat/index.shtm> Accessed March 2010.

United States Environmental Protection Agency (EPA). 2010. Hazardous Waste Characteristics A User-Friendly Reference Document. October 2009. Available online at: [www.epa.gov/epawaste/hazard/refdocs.htm](http://www.epa.gov/epawaste/hazard/refdocs.htm) Accessed on March 15, 2010.

Wallace Kuhl & Associates (WKA). 2010. Phase I Environmental Site Assessment: Montezuma II Wind Project. August 5, 2010.

Quad Knopf. 2010. Montezuma Wind Energy Center Hazardous Materials Business Plan. Quad Knopf. April 2010.