4.12 HAZARDS

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INTRODUCTION

This section examines potential public health risks associated with the OCMP and project alternatives. The main issues addressed in this section include:

- potential for release of hazardous substances during mining, processing, and/or reclamation;
- exposure of people to hazardous materials due to historic pesticide use;
- drowning hazards to the public due to steep pit slopes; and
- public health hazards due to increases in the mosquito population resulting from open bodies of water.

SETTING

Description of Regional Environment

Land uses within the OCMP planning area consist primarily of agriculture, gravel mining, and residential/commercial in the urban areas of Capay, Esparto, Madison, and Woodland. Regional hazards associated with these land uses consist of pesticide/herbicide applications, storage of hazardous materials[1] (including fuels, lubricants, and solvents), open pit hazards, and mosquito-generating open bodies of water. Public health hazards are also associated with generation and dispersion of air pollutant emissions from processing plants, agricultural activities, and aggregate extraction; these issues are discussed in Section 4.7, Air Quality. Releases of hazardous materials may result in degradation of ground and surface water quality within the planning area; water quality impacts are discussed in Section 4.4, Hydrology.

[1]A hazardous material is "...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. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which 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." (California Health and Safety Code, Section 25501)

Description of Local Environment

Hazardous materials are currently used and stored within the planning area. These materials are associated primarily with plant operations and agricultural uses. The types of hazardous materials typically used include asphalt,[2] diesel, propane (gas), compressed oxygen, acetylene gas, motor oil, gasoline, grease, waste oil, degreasers, and anti-freeze. Where heavy equipment is used, the types of hazardous materials include gasoline, diesel, and motor oil. Existing farmland and reclaimed agricultural uses would include the application of pesticides/herbicides.

A computer data search of the files from local, State, and Federal regulatory agencies responsible for administering regulations pertaining to hazardous materials was conducted for this project. The purpose of the search was to ascertain whether any spills had been reported to public agencies or any regulated fuel storage tanks were registered with the appropriate agencies. The results of the search indicated that about six underground storage tanks were located in the planning area. Two of these tanks were listed in the database as having had releases of petroleum (at the Solano Concrete and Syar Industries plants). However, according to County records, these two tank sites were closed in 1988 and 1989, respectively, after having been removed and the contaminated soils excavated (Sarazan, 1996).

Pesticide/herbicide use is dependent on the types of crops grown. The crops historically grown within the planning area include tree and row crops, such as almonds, sugar beets, tomatoes, sunflowers, safflower, alfalfa, and grains. These crops typically receive pesticide, herbicide, and/or fungicide treatments, either aerially or at ground level. The persistence of these chemicals in the subsurface varies widely. Continued applications may result in an accumulation of chemical residues in the soils or the residues can be contained in surface water runoff and may be ultimately discharged into waterways. The pesticides of greatest concern are those used prior to the 1970s, i.e., DDT and toxaphene; those chemicals are persistent in the environment and can affect the public health as well as the environment.

Regulatory Setting

The use, storage, and application of hazardous materials, including pesticides, are regulated on the local and State levels through statutes and regulations; the purpose of the statutes and regulations is to protect the environment and the public health. Pit slopes are regulated through performance standards of SMARA, and mosquito abatement is enforced by the local mosquito abatement district.

[2]The asphalt is not produced at the plants, but is delivered to the plant sites and mixed with aggregate.

Hazardous Materials

Pesticide/herbicide use, storage, and application regulations are contained in Title 3 of the California Code of Regulations (CCR). These regulations are enforced by the Yolo County Agricultural Commissioner. The regulations require a permit for the application of pesticides/herbicides. In Yolo County, pesticides/herbicides are used for a variety of row and tree crops, including those historically grown within the planning area.

Businesses that store, handle, or dispose of hazardous materials must submit a Hazardous Materials Business Plan (business plan) in accordance with the California Health and Safety Code Section 25504. The administering agency for these regulations is the Yolo County Environmental Health Department. The business plans must be updated every two years or within 30 days after a substantial change in site operations. The business plan must:

- List all the hazardous materials stored at a site;
- Identify emergency response procedures for spills and personnel;
- Identify evacuation plans and procedures; and
- Identify training records for personnel to substantiate annual refresher training.

If hazardous materials are used or stored at a site, all employees are also required to receive hazard communication training. The purpose of the training is to ensure that employees understand the nature of the hazardous materials that they handle and can safely use, store, and dispose of the materials in accordance with Title 8, CCR. The hazardous communication standard requires that employers must:

- Prepare an inventory of hazardous materials;
- Make Material Safety Data Sheets available to employees;
- Conduct employee training on chemical hazards and safe handling of materials; and
- Ensure that hazardous material containers are properly stored and labeled.

The Yolo County Communications and Emergency Response Agency provides emergency services for the County in case of spills of hazardous materials. They have also recently been administering the Hazardous Materials Business Plan program. Annual inspections of businesses (primarily farming related) have been undertaken by the Agricultural Commissioner's office in concert with their inspection requirements for pesticide users (McCanta, 1996); inspections of businesses that store hazardous materials will be performed by the County Environmental Health Department in the future (Sarazan, 1996). The hazard communication requirements are enforced by Cal/OSHA.

Pit Slopes

The steepness of pit slopes is regulated by SMARA and associated regulations. The objectives of SMARA are to prevent adverse environmental effects; restore reclaimed lands to a usable condition; balance the production and conservation of minerals with values related to recreation, watershed, wildlife, range and forage, and aesthetic

enjoyment; and ensure that residual hazards to the public health and safety are eliminated (SMARA, Article 1, section 2712). The design of pit slopes is addressed in the regulations implementing SMARA. The regulations require that special emphasis on slope stability and design is necessary when the public safety may be affected; the regulations require that final cut slopes must have a slope stability factor of safety that is suitable for the proposed end use.

California Department of Conservation, Office of Mine Reclamation (OMR) regulates reclamation activities through SMARA and implementing regulations. OMR does not maintain statistics on accidents associated with people falling into reclaimed pits (Pompey, 1996).

Mosquito Generation

Open bodies of water have the potential to generate populations of mosquitoes, especially if the water is shallow and stagnant. The Sacramento-Yolo Mosquito and Vector Control District (District) has jurisdiction in the planning area for mosquito abatement in accordance with the Health and Safety Code, Division 3, Chapter 5, Article 1. Mosquito abatement activities are initiated by field technicians from the District who perform field reconnaissances or review aerial photographs to identify standing water. To prevent the generation of mosquito populations in lakes (such as open pits), the District looks for steep-sided lakes (2:1 is sufficient) with minimal vegetation along the shores of the lakes. The District typically plants mosquitofish in the lakes to prevent mosquito generation (Brown, 1996).

SMARA and Related Regulations

The Surface Mining and Reclamation Act regulations have a number of requirements pertaining to the public health and safety. These requirements relate to slope stability and fertilizer use following completion of mining.

Section 3502(3) requires that "special emphasis on slope stability and design shall be necessary when public safety or adjacent property may be affected." The OCMP Goal 2.2-4 and associated Objective (2.3-3), Action (2.4-4), and Performance Standard (2.5-2) would meet the SMARA regulation requirement. Performance Standard 2.5-4 prescribes specific minimum slopes during mining (2:1 above the summer groundwater level and 1:1 below the summer groundwater level) and Performance Standard 2.5-11 prescribes final reclaimed pit slopes to be designed in accordance with the final reclaimed use and to be no less than 1:1 five feet below the groundwater table. Performance Standard 2.5-8 proposes that, prior to the commencement of mining, the location of the open pit shall be fenced and signage installed indicating danger. These Performance Standards may not be sufficient to ensure public safety of the reclaimed pits.

Section 3707(d) requires that the "use of fertilizers or other soil amendments shall not cause contamination of surface or groundwater." The OCMP provides a general goal for

the protection of surface water and groundwater quality (3.2-2) with associated policies, but do not include specific standards for the use of fertilizers or other soil amendments.

Yolo County General Plan

The Yolo County General Plan contains policies for the protection of the public health and the environment pertaining to toxic and hazardous materials, oil spills, emergency plans, and emergency response:

S18 Yolo County shall develop emergency plans for implementation in the event of accident, fire, or flood involving toxic or hazardous materials.

S19 Yolo County shall cooperate with other agencies in prevention and control of potential oil spills, including coordination with the State Oil Spill Program and this program shall be prescribed for application in local emergency and safety plans, standards, and ordinances.

S21 Yolo County shall develop, review, and maintain a County Emergency Plan and such Plan shall be a part of the Safety and Seismic Safety Element of this General Plan, as amended, by reference.

S22 Yolo County shall respond to catastrophic emergencies by:

- Continuing government.
- Directing and controlling emergency operations.
- Saving lives and protecting property.
- Repairing and restoring essential public systems and services.
- Protecting and managing use of remaining resources.
- Coordinating operations with other jurisdictions.
- Establishing emergency operating centers and maintaining communications.

These policies all prescribe that Yolo County shall develop emergency plans to be implemented in the event of accident, fire, or flood involving toxic or hazardous materials; that the County will cooperate with other emergency agencies in case of oil spills; that an emergency plan to be developed by the County shall be part of the Safety and Seismic Element of the General Plan; and that the County will respond to catastrophic emergencies.

The County has prepared an Emergency Response plan in accordance with the requirements of the General Plan policies (McCanta, 1995). The OCMP would not conflict with these overall emergency plans of the General Plan.

IMPACTS AND MITIGATION MEASURES

Standards of Significance

The project would have a significant health hazard effect if it would result in:

- Increased potential for accidental explosion or release of hazardous substances (including but not limited to oil, pesticides, chemicals, or radiation).

- Possible interference with an emergency response plan or emergency evacuation plan.
- The creation of any health hazard or potential health hazard.
- Exposure of people to existing sources of potential health hazards.
- Increased fire hazard in areas with flammable brush, grass, or trees.

Impact 4.12-1
Potential Human Health And/Or Environmental Impacts from the Accidental Release of Petroleum Products and Other Chemicals Used During Mining and Reclamation And/Or at Processing Plants

Mining and reclamation activities and plant operations include the use of hazardous materials. During mining and reclamation, on-site fueling and maintenance activities could result in spillage of fuels, lubricants, and/or solvents both on the ground and in or near the open wet pits. Such spillage may not result in emergency conditions (i.e., imminent danger to life) but could affect soil and water quality and possibly worker safety. Spillage of liquid or gaseous hazardous materials at the plant site could also result in adverse effects to soil and groundwater quality and affect the health and safety of workers. This would be a significant impact. The water quality effects of spillage or upsets associated with hazardous materials are discussed in Section 4.4, Hydrology and Water Quality.

Draft OCMP and Implementing Ordinances

The OCMP contains goals, objectives, actions, and performance standards (collectively referred to as policies) in the Aggregate Resources Element and in the Water Resources Element to minimize the potential impacts to the public health from off-channel mining and reclamation activities. The policies on the protection of public health in the Aggregate Resources Element are:

Goal 2.2-4: Eliminate or minimize hazards to the public health and safety that are associated with surface mining operations.

Obj. 2.3-3: Provide standards and procedures for regulating surface mining operations so that hazards are eliminated or minimized and potential adverse environmental effects are reduced or prevented.

Goal 2.2-4 and Objective 2.3-3 are appropriate to ensure protection of the public health and the environment from spills of hazardous materials during mining operations. However, neither policy provides measures for potential spillage of hazardous materials during reclamation activities.

Action 2.4-2: Improve the County's monitoring of surface mining by requiring that all operations within the planning area submit detailed annual reports, as well as copies of permits approved by other

agencies of jurisdiction. This will enable the County to better assess the impacts of off-channel and the success of reclamation efforts.

Action 2.4-2 is duplicative of the requirements under the Health and Safety Code for Hazardous Materials Business Plans. Business plans (and associated Spill Prevention Control and Countermeasure Plans) must be submitted to the County every two years, unless changes in the stored hazardous materials occur or spills requiring cleanup occur. Submitting these plans annually would not provide greater protection of the public health and the environment.

PS 2.5-2: The operator shall immediately notify the Community Development Director of any events such as fires, explosions, spills, land or slope failures, or other conditions on the site which could pose a hazard to life or property outside the permitted area. Upon request from any County agency, the operator shall provide a written report of any such event, within thirty (30) days, which shall include, but not be limited to, a description of the facts of the event, the corrective measures used, and the steps taken to prevent the recurrence of the incident. This condition does not supersede nor replace any requirement of any other governmental entity for reporting requirements.

A copy of the operator's approved Business Emergency Response Plans and the approved Spill Prevention Control and Countermeasure Plans shall be submitted to the Yolo County Health Department, prior to the commencement of mining.

This Performance Standard appears to only pertain to mining activities. The standard is appropriate for the protection of the public health and the environment; however, it is not specific regarding measures needed to minimize or eliminate the potential for spillage of fuels or lubricants into wet pits from heavy equipment.

The policies in the Water Resources Element pertaining to the protection of the public health consist of the following:

Goal 3.2-2: Maintain the quality of the surface and groundwater so that the nearby agricultural productivity and available drinking water supplies are not diminished.

Obj. 3.3-3: Ensure that off-channel surface mines are operated such that surface and groundwater supplies are not adversely affected by erosion, lowering of the water table, and/or contamination.

Action 3.4-3: Include a groundwater monitoring program as a condition of approval for any surface mining operation that proposes off-channel excavations that extend below the groundwater level. The monitoring program shall require regular groundwater level data, as well as an annual test for water quality based on a set of developed standards.

The policies would adequately provide for protection of the public health and the environment from potential spills of hazardous materials during mining activities within the planning area. However, policies 3.3-3 and 3.4-3 do not specifically include provisions for protection of the public health during reclamation activities.

PS 3.5-4: All surface mining operations that propose off-channel excavations below the groundwater level shall develop and maintain a groundwater monitoring program. At a minimum, the program shall consist of three (3) monitoring wells, one up-gradient of the wet pit and two down-gradient. Monitoring wells shall be installed at least six (6) months prior to excavation below the groundwater level. The water level shall be recorded and water quality tests performed for all monitoring wells and submitted to the County prior to commencement of the wet pit mining. The test results shall provide baseline data for future comparison and analysis.

Once wet pit mining has commenced, groundwater levels shall be monitored quarterly, while groundwater quality shall be monitored annually. The analysis of groundwater quality shall include, but may not be limited to, the following: mineral constituents, nitrate, pH, electrical conductivity, turbidity, and total coliform. A report to the County shall be submitted annually regarding the results of the groundwater monitoring program.

The monitoring program identified in Performance Standard 3.5-4 does not include provisions for sampling groundwater or surface water for organic compounds that may migrate to either open wet pits and/or the groundwater as a result of spillage of such compounds during mining and/or reclamation activities. This would be a significant impact unless mitigated.

Alternative 1a - No Project (Existing Conditions) and
Alternative 1b - Project (Existing Permits and Regulatory Condition)

These alternatives assume that the permits granted in 1995 for short-term mining would be used to mine in the planning area. The OCMP (and CCRMP) would not be adopted. No new applications would be approved by the County. Continuation of existing conditions would not result in impacts to the public health. Existing regulations and mitigation measures provided in previous CEQA documents would provide for the safe handling, use, and storage of hazardous materials.

Alternative 2 - No Mining (Alternative Site)

Implementation of this alternative would not result in impacts associated with spillage of hazardous materials from mining activities. Reclamation would still need to be completed for mining areas that have not been reclaimed. Those efforts would be governed by regulations and/or conditions of approval pertaining to the use, storage, and handling of hazardous materials.

Alternative 3 - Plant Operation Only (Importation)

Plant operations include the storage and use of hazardous materials. These activities are regulated under the Health and Safety Code, as described in the Setting section, above. Enforcement of existing statutes and regulations would eliminate potential public health impacts. Reclamation of existing mining sites would have to be completed under this alternative; those activities are governed by previous environmental review.

Alternative 4 - Shallow Mining (Alternative Method/Reclamation)

This alternative would not result in any new wet pits within the planning area. Mining activities would be governed by the OCMP. Since there would be no new wet pits created under this alternative, public health impacts from spillage into new open bodies of water would not occur. Mining and reclamation activities at existing pits are governed by mitigation measures in the 1995 short-term application EIRs, and would therefore not require additional mitigation.

Alternative 5a - Decreased Mining (Restricted Allocation)

Implementation of this alternative for future mining, under the OCMP, could result in additional wet pits being created, similar to the OCMP alternative. The impacts would be the same as discussed above for the OCMP.

Alternative 5b - Decreased Mining (Shorter Mining Period)

Potential impacts to the public health from management of hazardous materials would be the same as for the OCMP alternative.

Alternative 6 - Agricultural Reclamation (with Mining Operations as Proposed)

Potential impacts to the public health under this alternative would be the same as for the OCMP alternative.

Mitigation Measure 4.12-1a (OCMP, A-4, A-5a, A-5b, A-6)

Goal 2.2-4 and Objective 2.3-3 shall be revised to include mention of reclamation activities in addition to mining, as follows:

Goal 2.2-4: Eliminate or minimize hazards to the public health and safety that are associated with surface mining operations and reclamation.

Objective 2.3-3: Provide standards and procedures for regulating surface mining operations and reclamation so that hazards are eliminated or minimized and potential adverse environmental effects are reduced or prevented.

Action 2.4-2 shall be revised to indicate that business plans shall be submitted biannually, as required by the Health and Safety Code, unless changes in the types of hazardous materials used and stored at a facility occur, as follows:

Action 2.4-2: Improve the County's monitoring of surface mining by requiring that all operations within the planning area submit detailed annual reports, as well as copies of permits approved by other agencies of jurisdiction. Hazardous materials business plans must be submitted biannually, as required by the Health and Safety Code, unless the types of hazardous materials used change, in which case revised business plans must be

submitted within 30 days of the change. This will enable the County to better assess the impacts of off-channel mining and the success of reclamation efforts.

A Performance Standard shall be added to the Aggregate Resources Element that requires fueling and maintenance of mobile, heavy equipment to be prohibited within 100 feet of open bodies of water during mining and reclamation; in addition, special provision shall be made for fueling and maintenance of draglines:

> *Performance Standard 4.5-9 : Fueling and maintenance activities of heavy equipment (except draglines) are prohibited within 100 feet of open bodies of water during mining and reclamation. All Storm Water Pollution Prevention Plans shall include provisions for releases of fuels during fueling activities for draglines.*

Objective 3.3-3 and Action 3.4-3 shall be revised to include not only mining activities but also reclamation activities, as follows:

> *Objective 3.3-3: Ensure that off-channel surface mines are operated such that surface and groundwater supplies are not adversely affected by erosion, lowering of the water table, and/or contamination during mining and reclamation.*
>
> *Action 3.4-3: Include a groundwater monitoring program as a condition of approval for any surface mining and reclamation operation that proposes off-channel excavations that extend below the groundwater level. The monitoring program shall require regular groundwater level data, as well as ~~an annual test for~~ water quality monitoring program based on a set of developed standards.*

The second paragraph of Performance Standard 3.5-4 shall be amended to require that surface and groundwater sampling shall include analyses for petroleum hydrocarbons on an annual basis or more often if contaminants were identified above Maximum Contaminant Levels (MCLs). Mitigation measure 4.4-2a in the Hydrology section includes this modification.

Implementation of this mitigation would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b, and 6.

Mitigation Measure 4.12-1b (A-1a, A-1b, A-2, A-3)

None required.

Impact 4.12-2
Historic Pesticide Use May Affect the Health and Safety of Workers Engaged in Mining or Reclamation Activities

All Alternatives

Pesticide, herbicide, fungicide, or fertilizer use in the planning area may have resulted in accumulation of hazardous materials in the shallow soils. Historic chemical uses may have

included DDT and toxaphene prior to the 1970s. These chemicals are persistent and bio-accumulative in the environment and workers may be exposed to these chemicals during removal of topsoil, as well as during reclamation of mined areas. However, based on data collected on the lands subject to Solano Concrete's short-term application in 1995, the planning area soils do not appear to contain hazardous levels of agricultural chemicals or levels exceeding U.S. EPA's Preliminary Remediation Goals (PRGs) for site cleanup to protect the health and safety of the public.

In 1995, Solano Concrete collected six random soil samples from a 113-acre site (Farnham West parcel on property owned by Solano Concrete Company), which was the subject of a short-term mining application to Yolo County. The soil samples were collected (Kleinfelder, 1995) to determine the potential presence of pesticides and herbicides in the near surface soils. The results of the analyses of the samples indicated that the chemicals were present in three of the six locations. DDE, a breakdown of DDT (a pesticide banned in the 1970s), was detected at 2.0, 2.4, and 3.4 parts per billion. The regulatory threshold for DDE, DDD, and DDT is 1,000 parts per billion; above that threshold, the soils would be considered a hazardous waste according to CCR Title 22. The pesticide concentrations also did not exceed the PRGs (PRGs for DDT, DDD, and DDE range in concentrations from 1,200 to 1,900 parts per billion).

The fields from which the samples were collected had historical crop rotation with grains, corn, and tomatoes, similar to the crops in the planning area. The soil sample results from the Solano Concrete fields are therefore considered representative of soil quality conditions in the planning area. This impact would be less than significant. This would pertain to all alternatives.

Mitigation Measure 4.12-2 (OCMP, A-1a, A-1b, A-2, A-3, A-4, A-5a, A-5b, A-6)

None required.

Impact 4.12-3
Steep Pit Slopes May Present a Drowning Hazard to the Public

Pits would be created within the planning area as a result of off-channel aggregate extraction activities for some of the alternatives. The pits would gradually become deeper as mining progressed and have a minimum of 2:1 slopes above the groundwater table. Trespassers could fall into the pits during mining, reclamation, and after reclamation has been completed. Falling into reclaimed pits where water would be present could result in drowning. Potential victims would most likely be children attracted to the reclaimed pits. If slopes were steeper than 2:1, it would be difficult for anybody falling into the pit to crawl out.

Draft OCMP and Implementing Ordinances

SMARA does not provide specific requirements for the steepness of reclaimed pits; the SMARA regulations require that the steepness of the slopes be designed in accordance with slope stability evaluations and considering public safety. The OCMP has similar but more specific requirements for pit slopes, as listed below:

Goal 2.2-4: Eliminate or minimize hazards to the public health and safety that are associated with surface mining operations.

Obj. 2.3-3: Provide standards and procedures for regulating surface mining operations so that hazards are eliminated or minimized and potential adverse environmental effects are reduced or prevented.

Obj. 2.3-4: Revise the existing mining and reclamation ordinances contained in the Yolo County Code to incorporate recent amendments to SMARA; performance standards to prevent hazards and reduce environmental impacts; and programs to carry out the policies of the Off-Channel Mining Plan.

Action 2.4-4: Revise the existing mining and reclamation ordinances contained in the Yolo County Code to incorporate recent amendments to SMARA; performance standards to prevent hazards and reduce the potential environmental impacts; and programs to carry out the policies included within the Off-Channel Mining Plan.

The policies provide some protection of people from the potential for falling into open pits during mining operations by requiring pit benches and 2:1 slopes, but do not include protection from hazards during and following reclamation activities.

PS. 2.5-4: During operations, a series of benches may be excavated in a slope. The maximum vertical height between benches shall not exceed ten (10) feet, and all banks shall not exceed 2:1 (horizontal to vertical). Slopes shall not exceed 1:1 (horizontal to vertical) below the summer low water level of exposed groundwater in water filled excavations.

A slope in the working pit of 1:1 below the summer low water table could present a hazard to people falling into the pit and attempting to get out. A 1:1 slope would likely be too steep to achieve this objective.

PS. 2.5-8: Unnecessary personnel shall be excluded from off-channel excavations. Open pits shall be fenced with a four strand barbed wire fence or the equivalent, prior to the commencement of excavation. Fencing may enclose the property of which the mining site is a part, the mining site, or both. In addition, signs shall be installed at the project boundaries and access road, indicating that the excavation area is a danger zone.

Fencing and signage are appropriate safety measures to discourage trespassers from entering open pits. However, such actions should not be restricted to the times at which mining is occurring. The public health hazard would persist during and after reclamation activities.

PS. 2.5-16: Except where benches are used, all banks above groundwater level shall be sloped no steeper than 2:1 (horizontal to vertical). Proposed steeper slopes shall be evaluated by a slope stability study, prepared by a qualified engineer. Slopes below the groundwater level shall be no steeper than 1:1 (horizontal to vertical).

It is uncertain whether this Performance Standard pertains to active mining and/or during and after reclamation. In either case, slopes of 1:1 below the groundwater table would present a hazard to the public health, as would slopes steeper than 2:1 above the groundwater table. Additionally, this Performance Standard does not indicate the time of measurement of the groundwater level.

PS. 2.5-18: All final reclaimed slopes shall have a minimum safety factor equal to or greater than the critical gradient as determined by an engineering analysis of slope stability. Final slopes less than five (5) feet below the groundwater shall be designed in accordance with the reclaimed use. Reclaimed wet pit slopes located five (5) feet or more below groundwater level shall not exceed 1:1 (horizontal:vertical) in order to minimize the effects of sedimentation and biological clogging on groundwater flow and to prevent stagnation.

Final pit slopes steeper than 2:1 would represent a public health hazard above and below the water table (for at least five feet below the average low water level). The standard does not include reference to the design of slope angles in consideration of the protection of public health. According to SMARA, slope design has to take public safety into consideration.

Alternative 1a - No Project (Existing Conditions) and
Alternative 1b - No Project (Existing Permits and Regulatory Condition)

These alternatives assume that the permits granted in 1995 for the short-term mining would remain in effect. The OCMP (and CCRMP) would not be adopted and no new applications for mining in the planning area would be approved. No additional environmental impacts to the public health would occur from these alternatives since existing regulations and permit conditions would provide for limiting access by trespassers to the pits.

Alternative 2 - No Mining (Alternative Site)

Under this alternative, there would be no OCMP and mining would cease in the project area and reclamation of previously mined areas would commence. Reclamation activities would be governed by existing regulations and conditions of approval that include provisions for limiting access to open pits.

Alternative 3 - Plant Operation Only (Importation)

Under this alternative, there would be no OCMP and mining would cease. Reclamation activities would be completed for previously mined areas and plants would process imported aggregate. Impacts associated with reclamation of existing wet pits have been

addressed during past environmental review and associated conditions and no new impacts would occur.

Alternative 4 - Shallow Mining (Alternative Method/Reclamation)

Under this alternative, new mining activities, under the OCMP, in the planning area would be limited to dry pits; there would be no hazards to the public from dry pits. Potential public health impacts associated with existing wet pits (to be reclaimed to agriculture) have been mitigated by previous environmental review (and associated permit conditions).

Alternative 5a - Decreased Mining (Restricted Allocation)

The impacts for this alternative would be the same as those for the OCMP alternative.

Alternative 5b - Decreased Mining (Shorter Mining Period)

The impacts for this alternative would be the same as those for the OCMP alternative.

Alternative 6 - Agricultural Reclamation (with Mining Operations as Proposed)

The impacts for this alternative would be the same as those for the OCMP alternative.

Mitigation Measure 4.12-3a (OCMP, A-5a, A-5b, A-6)

Goals 2.2-4 and 2.3-3 shall be revised to include references to reclamation. Refer to Mitigation Measure 4.12-1a.

Performance Standards 2.5-4, 2.5-16, and 2.5-18 shall be revised as required by Mitigation Measure 4.3-2a to require that slopes shall not be steeper than 2:1 five feet below the average summer low groundwater level.

Performance Standard 2.5-8 shall be revised to include signage and fencing requirements during and after reclamation. These changes have been included in Mitigation Measure 4.4-2a in the Hydrology section.

Implementation of this mitigation would reduce this impact to a less-than-significant level for the OCMP and Alternatives 4, 5a, 5b, and 6.

Mitigation Measure 4.12-3a (A-1a, A-1b, A-2, A-3, A-4)

None required.

Impact 4.12-4
Open Bodies of Water May Become Breeding Areas for Mosquitoes. An Increase in the Mosquito Population Could Adversely Affect the Public Health

The creation of open bodies of water results in the possibility of providing additional breeding ground for mosquitoes. Mosquitoes typically breed in ponds with stagnant water and along the shores of lakes with shallow water. Open, clear bodies of water, subject to wind action, generally do not constitute a significant mosquito breeding habitat.

Draft OCMP and Implementing Ordinances

The following Performance Standards are included in the OCMP that would minimize mosquito generation:

PS. 2.5-16: Except where benches are used, all banks above groundwater level shall be sloped no steeper than 2:1 (horizontal to vertical). Proposed steeper slopes shall be evaluated by a slope stability study, prepared by a qualified engineer. Slopes below the groundwater level shall be no steeper than 1:1 (horizontal to vertical).

PS. 2.5-18: All final reclaimed slopes shall have a minimum safety factor equal to or greater than the critical gradient as determined by an engineering analysis of slope stability. Final slopes less than five (5) feet below the groundwater shall be designed in accordance with the reclaimed use. Reclaimed wet pit slopes located five (5) feet or more below groundwater level shall not exceed 1:1 (horizontal:vertical) in order to minimize the effects of sedimentation and biological clogging on groundwater flow and to prevent stagnation.

PS. 2.5-14: Reclamation plans including ponds, lakes, or other bodies of water shall be referred to the Yolo County Flood Control and Water Conservation District and the Mosquito Abatement District for review and comment prior to approval.

Implementation of these Performance Standards would mitigate the potential for mosquito generation by creating relatively steep slopes in wet pits and by requiring referral of reclamation plans to the Sacramento-Yolo Vector and Mosquito Abatement District (District) for review. If needed, District personnel would plant mosquitofish to eliminate mosquito larvae; this may be required in those open bodies of water that would be shallow, such as wetlands areas and sedimentation ponds.

Alternative 1a - No Project (Existing Conditions)

This alternative assumes that the permits granted in 1995 for the short-term mining would remain in effect. The OCMP (and CCRMP) would not be adopted, and no new applications for mining would be approved. No impacts would occur from this alternative since previous environmental review has provided mitigation measures to eliminate or minimize mosquito generation.

Alternative 1b - No Project (Existing Permits and Regulatory Condition)

Under this alternative, mining would occur only in accordance with existing permits. These permits have undergone CEQA review and mitigation measures were provided to minimize or eliminate potential additional generation of mosquitoes. No additional impacts would occur.

Alternative 2 - No Mining (Alternative Site)

Under this alternative, no OCMP (or CCRMP) would be implemented and no further mining would occur. Reclamation activities, which would be implemented in the planning area, would temporarily result in an open body of water until reclamation were complete; the water body would constitute new habitat for mosquitoes. However, previous environmental review provided mitigation measures to minimize or eliminate impacts from mosquito generation potential.

Alternative 3 - Plant Operation Only (Importation)

This alternative is similar to alternative 2 in terms of its potential to create habitat for mosquitoes. There would be no impacts that have not been previously covered under environmental review.

Alternative 4 - Shallow Mining (Alternative Method/Reclamation)

Under this alternative, all new mining in the planning area would be limited to shallow mining above the water table. Therefore, no new open bodies of water would be created and no areas promoting mosquito generation would occur. Reclamation activities associated with existing wet pits would be governed by mitigation measures from previous environmental documents that include measures to minimize or eliminate mosquito generation.

Alternative 5a - Decreased Mining (Restricted Allocation)

The impacts under this alternative would be the same as for the OCMP.

Alternative 5b - Decreased Mining (Shorter Mining Period)

The impacts under this alternative would be the same as for the OCMP.

Alternative 6a - Agricultural Reclamation (with Mining Operations as Proposed)

The impacts under this alternative would be the same as for the OCMP.

Mitigation Measure 4.12-4a (OCMP, A-1a, A-1b, A-2, A-3, A-4, A-5a, A-5b, A-6)

None required.