

APPENDIX A. AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES

The following avoidance, minimization, and mitigation measures would be made conditions of MBNMS authorizations and agreed to by Cal Am and incorporated into the CCC coastal development permit conditions and CCRWQCB NPDES or other discharge permit prior to issuance of required authorizations for the Proposed Action. The measures would be implemented throughout the duration of the proposed slant test well project, as appropriate, to minimize potential effects associated with project development and operation. Compliance with the below measures would be confirmed through regular project monitoring and reporting by a MBNMS-approved biological monitor.

1. Prior to construction, the applicant shall retain a qualified biological monitor(s), approved by MBNMS, to ensure compliance with all measures identified in the project environmental documents, authorizations, and permits. Monitoring shall occur throughout the duration of construction and decommissioning activities, or as directed by relevant regulatory agencies. Monitoring may be reduced during project operation, as determined through consultation with MBNMS, USFWS, and CDFW.
2. A qualified biologist(s) shall conduct preconstruction surveys for special-status species as described below.
 - a. Because of the dynamic nature of sand dunes and the tendency for Monterey spineflower to establish in recently-disturbed areas, surveys for Monterey spineflower and buckwheat shall be conducted within the entire project area during the blooming period for the spineflower (April-June) in the year prior to construction to identify and record the most current known locations of these species in the project vicinity. Surveys shall be conducted by a qualified botanist, and shall include collection of Global Positioning System (GPS) data points for use during flagging of sensitive plant species locations and avoidance buffers prior to construction.
 - b. A preconstruction survey shall be conducted for special-status species no more than 14 days prior to construction. If project construction takes place during the avian nesting season (February 15th through September 1st), the survey shall encompass all suitable nesting habitat within 500 feet of the project. Should active nests be identified, avoidance buffers shall be established (typically 250 feet for passerines and up to 500 feet for raptors) until a qualified biologist can confirm that nesting activities are complete. Variance from the no disturbance buffers may be implemented when there is compelling biological or ecological reason to do so. Any variance requested by the applicant shall be supported by a qualified biologist and subject to MBNMS, USFWS, and CDFW approval.

- c. One to two weeks prior to initiation of construction and decommissioning activities, a qualified biologist, in consultation with Point Blue, shall field evaluate the nature and extent of wintering snowy plover activity in the project area and shall make avoidance recommendations regarding construction activities to minimize disturbance to plovers. The applicant shall comply with all Point Blue and biologist avoidance recommendations.
 - d. Preconstruction surveys shall be conducted by a qualified biologist(s) for California legless lizard and coast horned lizard prior to disturbance of any suitable habitat. Surveys shall utilize hand search methods in areas of disturbance where these species are expected to be found (i.e., under shrubs, other vegetation, or debris on sandy soils). Any individuals located during the survey shall be safely removed and relocated in suitable habitat outside of the proposed disturbance area.
3. Prior to construction, operational, and decommissioning activities, a qualified biologist shall conduct an environmental awareness training for all construction personnel, which at a minimum shall include: descriptions of the special-status species that have potential to occur in the project area; their habitat requirements and life histories as they relate to the project; the avoidance, minimization, and mitigation measures that will be implemented to avoid impacts to the species and their habitats; the regulatory agencies and regulations that manage their protection; and, consequences that may result from unauthorized impacts or take of special-status species and their habitats. The training shall include distribution of an environmental training brochure, and collection of signatures from all attendees acknowledging their participation in the training. Subsequent trainings shall be provided by the qualified biologist as needed for additional construction or operational workers through the life of the project.
4. Prior to construction, a qualified biologist shall coordinate with construction crews to identify and mark the boundaries of project disturbance, locations of special-status species and suitable habitat, avoidance areas, and access routes. GPS data collected during preconstruction surveys completed in 2012 and 2013, and in 2014 in accordance with measure number 2, above, shall be used to flag the known locations of Monterey spineflower and buckwheat for avoidance during construction. Avoidance buffers shall be established and flagged or fenced as necessary to avoid surface disturbance or vegetation removal. The monitoring biologist shall fit the placement of flags and fencing to minimize impacts to any sensitive resources. At a minimum, the biologist shall direct the placement of highly visible exclusion fencing (snow fence or similar) at the following locations:
 - a. Around sensitive snowy plover habitat areas that do not require regular access;

- b. Areas along the northern edge of the CEMEX access road in the vicinity of the settling ponds; and
- c. In between the work area and any identified occurrence of Monterey spineflower or buckwheat within 10 feet of the existing access road or work area.

All delineated areas of temporary fencing shall be shown on grading plans and shall remain in place and functional throughout the duration of construction and decommissioning activities.

- 5. A qualified biologist(s) shall be present during all project construction and decommissioning activities, and as needed during operational activities, to monitor for special-status species and to limit potential impacts to suitable habitat. The biologist(s) shall monitor construction equipment access and shall have authority to halt work activities, if the potential for impacts to special-status species or habitat is identified, until the issue can be resolved. The qualified biologist(s) shall immediately report any observations of special-status species to the project applicant, MBNMS and any additional relevant regulatory agencies (CDFW, USFWS), as necessary.
- 6. During the operational phase of the proposed project, a qualified biologist shall consult with Point Blue monitors on a weekly basis during the plover nesting season to stay current with nesting activity in the vicinity of the slant test well. If active plover nests are located within 250 feet of the sampling station, access routes, or any other areas to be accessed during project operation, avoidance buffers shall be established to minimize potential disturbance of nesting activity, and the biologist shall coordinate with and accompany Cal Am operational staff as necessary during the nesting season to guide access and activities to avoid impacts to nesting plovers. The biologist shall contact MBNMS and USFWS immediately if a nest is found in areas that could be affected by project operations, as described above. Operations shall be immediately suspended until written authorization to proceed is provided by USFWS.
- 7. To ensure Point Blue has adequate staff and funding to complete necessary monitoring and coordination throughout development and operation of the slant test well project, Cal Am shall provide any necessary funding to Point Blue in an amount agreed upon by Point Blue and Cal Am. A copy of the funding agreement shall be provided to MBNMS and USFWS.
- 8. All construction and decommissioning activities shall be conducted between October 1st and February 28th, outside of the blooming period for Monterey spineflower, the active flight season for adult Smith's blue butterflies and active larval stage of the species, and the nesting season for western snowy plover and other avian species protected by the MBTA. Construction activities shall be restricted to the designated and flagged/fenced construction areas and CEMEX access road. No construction equipment, materials, or activity shall occur outside

- of the specified areas. This measure shall be included on all construction and grading plan sets.
9. In order to minimize potential for vehicular collision with special-status species, all construction, decommissioning, and operational traffic shall maintain speeds of 10 miles per hour or less on access roads within the CEMEX parcel. All personnel shall conduct a visual inspection for special-status species around and under all vehicles prior to moving them. This measure shall be included on all construction and grading plan sets.
 10. Noise blankets shall be installed to provide visual and sound attenuation during all drilling operations to minimize potential disturbance of wintering western snowy plover. This measure shall be included on all construction and grading plan sets.
 11. Wire excluders or similar anti-perching devices shall be incorporated into the top of all aboveground structures (e.g., electrical panel) to deter perching by avian predators. This measure shall be included on all construction and grading plan sets.
 12. Construction personnel shall be required to keep all food-related trash items in sealed containers and remove them daily to discourage the concentration of potential predators in snowy plover habitat. Following construction, all trash and construction debris shall be removed from work areas and properly disposed of at a certified landfill. All vegetation removed from the construction site shall be taken to a certified landfill to prevent the spread of invasive species. These measures shall be included on all construction and grading plan sets.
 13. Prior to issuance of MBNMS authorizations, the applicant shall develop a Restoration Management Plan (Plan) consistent with the requirements of the City of Marina LCP. At a minimum, the Plan shall include a description of the following methods and metrics: areas of habitat to be disturbed; areas of habitat to be restored, which shall at minimum include all areas of disturbance in designated Primary or Secondary Habitat, except for areas actively used by CEMEX for mining purposes; ratios of plants to be replaced based on a minimum replacement of 3:1, or as otherwise directed by regulatory agencies; timing of restoration activities; monitoring of restoration success; and any required reporting to relevant agencies. The Plan shall also include all relevant conditions of approval or requirements related to site restoration from permits or authorizations issued by regulatory agencies for the project. The applicant shall seek input and/or review of the Plan from relevant regulatory agencies prior to finalization, including at a minimum MBNMS, USFWS, CDFW, and the CCC. The Plan shall be implemented 1) during and immediately following construction, and prior to operation of the test well, and 2) during and immediately following decommissioning activities.
 14. After construction, all disturbed areas shall be restored and revegetated to preconstruction contours and conditions to the extent feasible, in accordance with

- the Restoration Management Plan. Following decommissioning of the test well, all disturbed areas shall be re-contoured and revegetated as determined necessary and in coordination with applicable agencies and representatives of Point Blue to ensure that the optimum ground configuration is obtained for potential nesting plovers and other special-status species that may occur in the area.
15. To ensure that restoration efforts are successful and unanticipated events are expeditiously managed, restored areas shall be monitored following planting and during operation of the test well and for five years following planting and decommissioning of the test well. Success criteria will include plant cover and species composition/diversity, which shall meet or exceed adjacent undisturbed dune habitat on the CEMEX parcel as determined by the biological monitor. Success criteria shall, at a minimum, be consistent with the requirements of the existing Lapis Revegetation Plan prepared for the RMC Lonestar Lapis Sand Plant (25 percent average vegetative cover and species diversity of all species listed in Group A of the Plan present and providing at least 1 percent cover).
 16. During construction and decommissioning activities, the biological monitor(s) shall ensure that the spread or introduction of invasive plant species is avoided to the maximum extent possible through the following measures, which shall be included in all construction and grading plan sets:
 - a. When practicable, invasive exotic plants in the project area shall be removed and properly disposed of at a certified landfill.
 - b. The use of imported soils for fill shall be limited to the extent possible. Soils currently existing on-site shall be used for fill material to the extent feasible. If the use of imported fill material is necessary, the imported material must be obtained from a source that is known to be free of invasive plant species, or the material must consist of purchased clean material.
 - c. The Restoration Management Plan shall include an invasive species control program and shall emphasize the use of native species expected to occur in the area.
 17. Prior to issuance of MBNMS authorizations, the project applicant shall provide MBNMS with a valid NPDES permit or other evidence of CCRWQCB approval for the proposed slant test well discharge. The NPDES permit or approval shall incorporate all relevant standards of the California Ocean Plan and compliance with the Ocean Plan shall be evidenced prior to discharge into the outfall pipe.
 18. Prior to issuance of MBNMS authorizations, the applicant shall submit a grading plan identifying all stockpile and staging areas. Stockpiles and staging areas shall not be placed in areas that have potential to experience significant runoff during the rainy season. All project-related spills of hazardous materials within or adjacent to project sites shall be cleaned up immediately. Spill prevention and

cleanup materials shall be on-site at all times during construction. Cleaning and refueling of equipment and vehicles shall occur only within designated staging areas. The staging areas shall conform to standard Best Management Practices (BMPs) applicable to attaining zero discharge of storm water runoff. No maintenance, cleaning or fueling of equipment shall occur within Primary or Secondary Habitat areas, or within 50 feet of such areas. At a minimum, all equipment and vehicles shall be checked and maintained on a daily basis to ensure proper operation and to avoid potential leaks or spills. The grading plan shall be subject to review and approval by MBNMS.

19. A qualified archaeologist that meets the Secretary of the Interior's professional qualifications standards in archaeology (National Park Service 1983) shall be retained to provide archaeological services for the project. Archaeological services for the project shall at minimum include the following:
 - a. Prior to initiation of ground-disturbing activities, an archaeological monitor working under the direction of the qualified archaeologist shall conduct a brief awareness training session for all construction workers and supervisory personnel. The training shall explain the importance of and legal basis for the protection of significant archaeological resources. Each worker should learn the proper procedures to follow in the event that cultural resources or human remains/burials are uncovered during ground-disturbing activities, including those that occur when an archaeological monitor is not present. These procedures include work curtailment or redirection and the immediate contact of the site supervisor and the archaeological monitor. It is recommended that this worker education session include visual images or samples of artifacts that might be found in the project vicinity, and that the session take place on-site immediately prior to the start of ground-disturbing activities.
 - b. An archaeological monitor working under the direction of the qualified archaeologist shall monitor all ground disturbance in areas within 100 feet of the historic buildings within the eastern portion of the project area. These include the Superintendent's Residence, Bunkhouse, Garage/Office, Maintenance Shop, and Scale House and Office. The timing and duration of the monitoring may be adjusted during project implementation by the qualified archaeologist, in consultation with MBNMS, whose decision shall be informed by the apparent sensitivity of the sediments in the project area once they are exposed.
 - c. The project applicant shall coordinate with representatives from the Ohlone/Coastanoan-Esselen Nation and Amah Mutsun Tribal Band of Mission San Juan Bautista to designate a Native American monitor to be present during ground disturbing activities associated with the project. Documentation of such coordination shall be provided to MBNMS prior to construction activities. The timing and duration of the monitoring may be

adjusted during project implementation by the qualified archaeologist, in consultation with MBNMS, whose decision shall be informed by the apparent sensitivity of the sediments in the project area once they are exposed.

20. In the event that archaeological resources (artifacts or features) are exposed during ground-disturbing activities, construction activities in the immediate vicinity (25 feet) of the discovery shall be halted while the resources are evaluated for significance by the qualified archaeologist. Construction activities could continue in other areas. If the discovery proves to be significant, additional work, such as archaeological data recovery or project redesign, may be warranted and would be discussed in consultation with MBNMS.
21. In the event of inadvertent discovery of human remains, no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner shall be notified of the find immediately. If the human remains are determined to be prehistoric, the coroner will notify the Native American Heritage Commission, which will determine and notify a most likely descendant (MLD). The MLD shall complete the inspection of the site within 48 hours of notification, and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials. The California Health and Safety Code Section 7050.5 process shall be noted on project grading and construction plans and reviewed during the construction worker awareness training session.
22. The project area shall be redesigned to avoid significant adverse effects to historic resources; in particular, direct impacts to the Lapis Siding that is identified as a contributor to the Lapis Sand Mining Plant Historic District shall be avoided. Because the Siding extends through the eastern portion of the construction footprint, the construction plans shall be redesigned to locate all project components and construction activities in adjacent areas that do not contain structures associated with the Lapis Sand Mining Plant historic district. Avoidance of impacts to historic district contributors in close proximity to construction activities shall be accomplished by installing flagging or safety fencing around, or covering with plywood, any adjacent buildings or structures that are within 5 feet of mechanized equipment.
23. The project shall be designed to meet or exceed all applicable requirements of the California Building Code. Design and construction of the project shall meet or exceed all applicable conclusions and recommendations in the Geotechnical Investigation for the California American Water Temporary Slant Test Well Project, Marina, Monterey County, California, dated April 3, 2014 (GeoSoils 2014).
24. Prior to construction, the applicant shall prepare a Hazardous Material Spill Prevention, Control and Countermeasure Plan to minimize the potential for, and

effects of, spills of hazardous or toxic substances or the inadvertent discovery of buried hazardous materials during construction or decommissioning of the project. The plan shall be submitted for review and approval by MBNMS, and shall include, at minimum, the following:

- a. A description of storage procedures and construction and decommissioning site maintenance and upkeep practices;
 - b. Identification of a person or persons responsible for monitoring implementation of the plan and spill response;
 - c. Identification of BMPs to be implemented to ensure minimal impacts to the environment occur, including but not limited to the use of containment devices for hazardous materials, training of construction staff regarding safety practices to reduce the chance for spills or accidents, and use of non-toxic substances where feasible;
 - d. A requirement that the mixing, use, or transport of any hazardous substances be sited a safe distance away from sensitive habitat areas and the MRWPCA junction structure and outfall connection area.
 - e. Positive location of any past or current septic systems on the CEMEX parcel in the vicinity of construction activities, and a plan for avoiding impacts to any known or unknown buried refuse disposal locations;
 - f. A description of proper procedures for containing, diverting, isolating, and cleaning up spills, hazardous substances and/or soils, in a manner that minimizes impacts on sensitive biological resources;
 - g. A description of the actions required if a spill or inadvertent discovery occurs, including which authorities to contact and proper clean-up procedures; and
 - h. A requirement that all construction personnel participate in an awareness training program conducted by qualified personnel approved by MBNMS. The training must include a description of the Hazardous Materials Spill Prevention, Control and Countermeasure Plan, the plan's requirements for spill prevention, information regarding the importance of preventing spills, the appropriate measures to take should a spill or inadvertent discovery occur, and identification of the location of all clean-up materials and equipment.
25. Prior to issuance of MBNMS authorizations, the applicant shall submit an erosion control plan for approval by MBNMS, which shall identify standard BMPs to be implemented to address both temporary and permanent measures to control erosion and reduce sedimentation. The plan shall be prepared by an appropriately certified professional and shall include a schedule for the completion of erosion-

- and sediment-control structures, which ensures that all such erosion-control structures are in place by mid-November of the year that construction begins. Site monitoring by the applicant's erosion-control specialist shall be undertaken and a follow-up report shall be prepared that documents the progress and/or completion of required erosion-control measures both during and after construction and decommissioning activities. No synthetic plastic mesh products shall be used in any erosion control materials. All plans shall show that sedimentation and erosion control measures are installed prior to any other ground disturbing work.
26. Prior to commencement of construction activities and throughout project operation, the applicant shall consult with the property owner (CEMEX) regarding construction/decommissioning operations and schedule. The project applicant shall provide advance notice of construction activities and construction shall be scheduled during non-peak hours to avoid disruption of existing mining activities to the extent feasible. If construction activities within the CEMEX access road would conflict with CEMEX operations, such construction shall be conducted during non-operational mining periods (i.e., nighttime or weekends). Construction activities shall be conducted to avoid any need for the grading or use of any new access roads for use by CEMEX.
 27. The slant test well and wellhead vault shall be sited to avoid areas identified in the coastal erosion memorandum prepared by ESA-PWA (March 2014) as subject to coastal erosion or storm surge inundation during the duration of the project. The slant test well location shall avoid all identified sensitive plant species and shall be limited to the graded area of the CEMEX access road to the maximum extent feasible. The slant test well location shall be situated entirely south of the northern boundary of the CEMEX access road, and shall not encroach north of the graded roadway in closer proximity to the CEMEX settling ponds or Canal Flume.
 28. At project decommissioning, the slant test well and all related infrastructure shall be removed to an ultimate depth of no less than 40 feet below existing ground surface to eliminate the possibility for future re-surfacing and exposure of submerged well casing or related project components as a result of coastal erosion and shoreline retreat. Removal of the well would take place upon completion of the test pumping and/or in segments over time as mutually agreed upon by MBNMS, MRWPCA, Cal Am, the California State Lands Commission, and other identified regulatory agencies. If removal to the total required depth of 40 feet below ground surface is not completed within 5 years following completion of the test pumping due to potential risk to the MRWPCA outfall, the applicant shall post a bond with the City to ensure future removal measures would be appropriately supported and timed to prevent any future resurfacing of the well casing or other project components and shall provide evidence of the bond to MBNMS.
 29. The applicant shall prepare a monitoring plan for MBNMS review and approval. The plan shall include, at minimum, the following. The plan shall determine,

through preliminary monitoring and sampling prior to pumping activities, a baseline condition of groundwater levels and quality, including the reasonable range of natural fluctuations, in the Dune Sand, 180-FTE, and 400-Foot Aquifers. The effects of pumping activities on groundwater levels and quality in the Dune Sand, 180-FTE, and 400-Foot Aquifers shall be monitored throughout the duration of pumping activities. Monitoring activities shall be conducted through regular assessment of the proposed on-site monitoring wells, as well as through additional coordination with surrounding well owners, including CEMEX and adjacent agricultural water users, to identify changes in off-site water levels to the maximum extent feasible.

A drawdown of 1 foot above natural fluctuations on groundwater levels shall be considered a significant adverse effect on water supply. If pumping activities reflect a drawdown of 1 foot or greater on any adjacent well, compensatory mitigation shall be required. Feasible mitigation shall include, but not be limited to, consultation with the affected water user, monetary compensation (i.e., for increased pumping costs or for upgraded wells), and provision of replacement water from alternative sources. If compensation or other remediation is found to be unfeasible, pumping activities shall be adjusted so that no more than 1 foot of drawdown on adjacent water wells would result.

The plan shall designate a person or persons to monitor implementation of the monitoring plan and order implementation of mitigation if necessary. The name and telephone number of the person(s) shall be listed in the monitoring plan and provided to MBNMS prior to the start of construction. The plan shall identify requirements for water quality sampling and monitoring through the duration of the proposed pumping activities. All NPDES and Ocean Plan constituents shall be monitored, and Ocean Plan constituents shall be monitored no less than twice a year. The plan shall include a requirement for regular reporting (no less than annually) on the results of the monitoring activities, and the reports shall be submitted to MBNMS and other relevant regulatory agencies.

30. Cal Am shall enter into a negotiated agreement or memorandum of understanding with the Monterey Regional Water Pollution Control Agency regarding connection and use of the ocean outfall. At minimum, the agreement shall include MRWPCA engineering design review, USA North 811 positive location of the outfall, construction trestle, and any related infrastructure, CCRWQCB approval or permits for discharge of seawater through the MRWPCA outfall, appropriate safety barriers and/or monitors in areas of excavation surrounding the junction structure and outfall connection, and access to flow meter data and alarm system triggers and signals.