SEDIMENT MANAGEMENT PLAN

MAIN STREET AT SANTA ROSA CREEK BRIDGE REPLACEMENT

CAMBRIA, CALIFORNIA

CONTRACT NO. 300180

FEDERAL PROJECT NO. BRLO-5949(065)

PREPARED BY:

COUNTY OF SAN LUIS OBISPO

DEPARTMENT OF PUBLIC WORKS

APRIL 2013

SEDIMENT MANAGEMENT PLAN

1. INTRODUCTION

On February 22, 2013, the County of San Luis Obispo Public Works Department (County) received a 401 Water Quality Certification (34012WQ19) from the Regional Water Quality Control Board (RWQCB) for the Main Street Bridge Replacement Project in Cambria, California. The 401 Water Quality Certification requires the County to create a Sediment Management Plan to manage soils that have mercury levels the RWQCB considers to be a threat to water quality. Through subsequent follow-up correspondence, the RWQCB is also requiring the Sediment Management Plan to deal with potentially contaminated roots and groundwater.

Mercury was actively mined in the Curti Creek sub-watershed of the upper Santa Rosa Creek (4 to 5 miles or more upstream of the bridge) beginning around 1865. These mining operations continued until the mid-1940s during World War II, then decreased significantly. As the bedrock and mine tailings erode, the natural mercury has an affinity to adsorb to soil particle surfaces (primarily carbon molecules) and form insoluble precipitates. Typically, mass transport of mercury in mining-affected watersheds is dominated by particle transport rather than transported as dissolved mercury. The distance sediment travels is affected by several factors including channel slope, vegetative cover, severity of rainfall, and stream flow rate.

The project site is located in the lower reaches of Santa Rosa Creek, which is characterized as having fairly level channel slopes and a larger channel width in comparison to the upper reaches of the watershed. The project site is located in a portion of the channel that has historically experienced scour and bank erosion. It is expected that sediment deposition within the lower reaches would have uniformly distributed low levels of mercury throughout the entire lower 3 miles of the Santa Rosa Creek, rather than depositing high levels of mercury locally at the project site, which encompasses only approximately 200 feet of the total 3 mile length of the lower reach. Previous investigations within the area of the placement of rock slope protection have detected non-hazardous levels of mercury in the soil.

2. OBJECTIVES

The objectives of the Sediment Management Plan are to: 1) ensure that the soil, roots, and groundwater excavated below the Waters of the State having a potential to be impacted by mercury is handled, stockpiled, and disposed of in accordance with federal, state, and local regulations; and 2) protect workers and the public from any potential health risk. These objectives will be achieved by:

- Proper handling and stockpiling of excavated soil and roots
- Proper profiling, transporting, and disposal of soil stockpiles
- Proper handling and discharging of dewatered groundwater

3. REGULATORY CRITERIA

The regulatory criterion, established by the California Code of Regulations Title 22, for determining whether sediment can be classified as a hazardous waste for disposal purposes is based on metal content.

The soil is considered a toxic hazardous waste, requiring treatment prior to placing in a hazardous waste facility, when the total mercury concentration exceeds the Total Threshold Limit Concentration (TTLC) of 20 mg/kg (ppm). The soil is considered a California hazardous waste if the Soluble Threshold Limit Concentration (STLC) exceeds 0.2 mg/L (ppm) as determined by the Waste Extraction Test (WET).

In addition to the Title 22 California-hazardous waste classification, soil that contains a Toxicity Characteristic Leaching Procedure (TCLP) soluble mercury concentration in excess 0.2 mg/L (ppm) is considered a hazardous waste under the Resource Conservation and Recovery Act (RCRA).

According to the RWQCB's "Water Quality Control Plan for the Central Coastal Basin" (Basin Plan), Santa Rosa Creek has various beneficial uses, which includes, but is not limited to, Municipal and Domestic Supply (MUN), and Commercial and Sport Fishing (COMM), Warm Fresh Water Habitat (WARM), Cold Fresh Water Habitat (COLD), and Ground Water Recharge (GWR). The United States Environmental Protection Agency (US EPA), the California Department of Public Health (CDPH), and the Basin Plan set the Maximum Contaminant Level (MCL) standard for drinking water at 2 μ/L (ppb). The Basin Plan also sets the limit for which mercury concentration in freshwater with COLD and WARM beneficial uses at 0.2 mg/L (ppm) to protect aquatic life habitats.

The US EPA's "Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California" (California Toxic Rule) in Title 40 Code of Federal Regulations Part 131 has been in effect since May 18, 2000. The California Toxic Rule sets numeric water quality criteria for priority toxic pollutants, the presence or discharge of which could reasonably be expected to interfere with maintaining designated beneficial uses. These water quality criteria are applicable for inland surface waters, enclosed bays, and estuaries for all purposes and programs under the Clean Water Act. The criteria established by the California Toxic Rule for mercury concentration is 0.050 ppb for inorganic and organic mercury.

The MCL for mercury refers specifically to inorganic mercury. Due to the toxicity of organic mercury (methyl mercury), and its tendency to accumulate more quickly in fish and other animals, the CTR mercury criteria for consumption of water and organisms is lower than the established MCL for inorganic mercury.

For groundwater with the beneficial use of municipal or domestic water supply, which applies to the groundwater that could be encountered during the construction of this project, the applicable drinking water standards are those established by the US EPA or CDPH, whichever is more stringent. In the case of mercury the MCL for mercury established by the US EPA and the CDPH is 2 ppb.

While the Basin Plan does not identify a Total Maximum Daily Load (TMDL) for mercury in Santa Rosa Creek, in issuing the 401 Water Quality Certification (Exhibit A) the RWQCB has chosen to apply the more stringent California Toxic Rule and to make a conservative assumption that sediment may comprise up to 1% of the water column. On the basis of these assumptions, the 401 Water Quality Certification requires the County to test the sediment within the Waters of the State using Test Method 7471A or 7471B and any sediment found to contain 5 ppb (100 x 0.05 ppb) or more of mercury is considered by the RWQCB to be a threat to water quality, requiring sediment controls to be applied. Test Method 7471A or 7471B have standard detection limits between 20 and 50 ppb; therefore, the RWQCB agreed, during subsequent follow-up correspondence (Exhibit B), that sediment tested using Test Method 7471A or 7471B that contains <u>any</u> detectable level of mercury is considered by the RWQCB to be a threat to water quality, requiring sediment controls to be applied. The RWQCB's apparent goal is to protect water quality that could potentially be impacted by sediment bound mercury suspended in the water column, which would typically only be caused by scour or erosion during a storm event.

The RWQCB will allow discharge of dewatered groundwater to surface waters provided the total mercury concentration is less than 0.05 ppb (based on the CTR) and will allow discharge of dewatered groundwater through percolation provided the total mercury concentration is less than 2.0 ppb (based on the MCL).

4. INDENTIFACATION OF CONTAMINATION

4.1. <u>Hydraulics</u>

The Design Hydraulic Study prepared for this project utilized the Army Corps of Engineers HEC-RAS program to perform a backwater analysis on the existing bridge in order to identify the existing hydraulic conditions. Based on this analysis and stream gage data from County of San Luis Obispo Stream Gage 21, the flood of record was recorded on March, 10 1995 with a water surface elevation of 63.52 feet (stage reading of 17.07 feet). The stream gage is located approximately 65' upstream of the existing bridge; and due to channel constriction at the bridge, the water surface elevation at the bridge during the storm event was estimated to be 65.59 feet. The flood of March 10, 1995 was conveyed under the soffit of the bridge with a peak flow of 11,900 cubic feet per second (cfs) and was estimated to be a 25-year event (4% chance of occurring in any given year). Based on the Design Hydraulic Study, the water surface elevations at the bridge during a 50-year and 100-year events are estimated to be 67.97 feet and 70.25 feet, respectively. Stream gage data at this site been collected since 1989; therefore, it is the RWCQB's opinion that there is a potential that a 100-year event occurred since the mercury mining upstream and mercury contaminated sediment had the potential to be deposited below the 100-year event water surface elevation. Based on the accuracy of the topographic field survey and to aid in the constructability of the project, the County will apply this Sediment Management Plan within the Waters of the State and below existing contour elevation 72 feet.

4.2. Sediment Deposition

Within the project limits the streambed material generally consists of silty sand, poorly graded sand, gravel, and cobbles. Historical topographic maps of the area were obtained (Kleinfelder, February 2013) dating back to 1919. Due to the scale of the maps, no significant topographic changes are evident between the 1919 map, before the bridge was built, and the 1942 map, after the bridge was built.

Two geotechnical borings were taken outside of the active stream channel at either end of the existing bridge (Kleinfelder. 2006). The borings encountered approximately 19 feet of fill soils over native sediments to a depth of 60 feet, which is consistent with the as-built drawings for the existing bridge. The contact between the fill soils and the native sediment is approximately elevation 60 feet. Hand augers taken to a depth of 2.5 feet within the creek channel encountered loose silty sand and poorly graded sand. Due to a layer of gravel and cobbles, the hand augers did not extend through the creek sediments into the older native alluvium (Kleinfelder, February 2013). An additional boring was conducted to the approximate depth of the bottom of the proposed rock slope protection for the new bridge; however, there was no evidence that the drilling extended into older native alluvium (Kleinfelder, April 2013). There was a significant color change at a depth of approximately 13.5 feet demonstrating that the material had been deprived of oxygen for some time. Without carbon dating of the organics (which may or not be in the soil) the County is unable to determine the relative age of the creek bed material.

4.3. Groundwater

Based on the soil investigation performed in October 2003, groundwater was encountered in a boring location adjacent of the creek at elevation 46.3, while the bottom of the creek was at approximately elevation 48. Since the groundwater elevation was below the creek elevation, it is clear that the creek is feeding the groundwater (i.e. the creek is losing water to the groundwater). This is further supported by the California Department of Water Resources (DWR) Central Coast Hydrologic Region's Santa Rosa Valley Groundwater Basin Bulletin 118 (Exhibit C) which states that recharge to the groundwater basin "is largely by percolation of stream flow and, to a lesser extent, from infiltration of precipitation and excess irrigation flow."

The Cambria Community Services District (CCSD) has a well (SR-4) upstream of the project site near the Coast Union High School which pumps water from the Santa Rosa Creek aquifer. This well is used to supply drinking water to the community of Cambria. The CCSD is required to test the drinking water quality to ensure the Maximum Contaminant Level (MCL) is not exceeded for various constituents in accordance with state and federal regulations. Based on the 2011 Consumer Confidence Report, 0.03 ppb of mercury were detected, well below the MCL of 2 ppb.

Based on the fact that the groundwater is being recharged by the creek and the testing performed by the CCSD, it is highly unlikely that the groundwater within the project limits has elevated levels of mercury. Due to the presence of mercury in the sediment at the project site, this Sediment Management Plan will only address the sediment encountered in the groundwater.

4.4. Roots

There has also been research done on the uptake of mercury into root systems of various plant species; the County will therefore treat the roots of vegetation as potentially contaminated with mercury and incorporate that handling and disposal of the roots in this Sediment Management Plan.

5. SOIL AND ROOT EXCAVATION, STOCKPILING, AND PROFILING

5.1. Soil and Root Excavation

Excavated soil and roots, within the Waters of the State and below existing contour elevation 72, removed during the clearing and grubbing operations will be transferred directly from the excavation to a transport vehicle or a stockpile location identified by the Resident Engineer. Soil excavated from specific depth intervals will be segregated. For example, shallow soil excavated from the first few feet will be segregated from soil excavated from lower depths.

During excavation, water may be used to minimize airborne dust. Care will be taken to prevent accumulation and runoff to surface waters. The application of water will comply with Section 10, “Dust Control,” and Section 17, “Watering,” of the Caltrans Standard Specifications, that state: "Water for laying dust shall be applied by means of pressure-type distributors or pipe lines equipped with a spray system or hoses with nozzles that will insure a uniform application of water."

5.2. Stockpile Construction and Maintenance

Excavated soil and roots will be stockpiled and placed on undamaged 60-mil high density polyethylene or equivalent impermeable barrier (i.e. plywood). All seams in the barrier will be sealed to prevent leakage and the dimensions of the impermeable barrier will be greater than the dimensions of the stockpile at all times. Each stockpile will be surrounded by a linear barrier (i.e. fiber rolls or straw bales). Stockpiles will be located outside the Waters of State in a location not affected by surface run-on or run-off in order to prevent sediment from re-entering the creek.

The stockpiles will be constructed in an elongated shape such that soil from the top of the excavation shall be stockpiled to the rear and the soil from the bottom of the excavation shall be at the front of the stockpile. This will assure that soil from each depth will be represented.

At the end of each day, stockpiles will be covered with 12-mil polyethylene or an equivalent barrier to prevent windblown dispersion and precipitation run-on or run-off. When more than one sheet is

required to cover a stockpile, the sheets will overlap a minimum of 1.5 feet to prevent water from flowing onto the stockpiled material. The cover will be secured to keep it in place.

Stockpiles will be surrounded by 6-foot high temporary chain link fence with signs warning of possible contamination.

5.3. Site Inspection

Stockpiles and other pollution prevention measures will be inspected and their integrity will be maintained. Stockpiles will be inspected at the end of each workday.

5.4. Stockpile Sampling and Analysis

No additional soil sampling and analysis will be required prior to excavation. Following the completion of excavation (or phases of excavation), composite soil samples will be collected from each soil stockpile to profile the stockpiles for disposal purposes in accordance with the following sampling procedure:

Each stockpile will be divided into four quadrants, each transecting the stockpile from side to side and representing no more than 200 cubic yards for each stockpile. Samples will be collected in accordance with Method 7471A at a minimum rate of one sample per 50 cubic yard of soil or 4 samples per quadrant. Samples will be collected at random depths by digging approximately 0 to 2 feet, with a pre-cleaned shovel, into the middle of each sector of the stockpile. A map will be prepared illustrating the stockpile, quadrant, and sampling locations. A unique numbering system will be applied to ensure proper identification and tracking of samples and stockpiles.

Each sample container will be filled to capacity to minimize the presence of headspace. Each sample container will be labeled with a unique sample number, location, time of collection, initials of collector, date, and any other pertinent information. Each sample will be recorded on a chain-of-custody form. A sample number will be assigned to identify the stockpile and the quadrant where the sample originated. Samples collected during a given day will be preserved and delivered to a state certified laboratory for analysis in accordance with Method 7471A and the laboratories requirements.

Every four samples from each quadrant will be composited by the laboratory into one composite sample for analysis. Each composite sample will be analyzed for total mercury concentration using Method 7471A. If the total concentration exceeds 2 ppm, the sample will also be analyzed under the Waste Extraction Test to determine the soluble concentration. If the soluble concentration exceeds the Soluble Threshold Limit Concentration (STLC) of 0.2 ppm, the sample will be further analyzed under a Total Characteristic Leaching Procedure (TCLP). Additional sampling and analysis will be performed if requested by the designated disposal facility.

The County will provide copies of laboratory sampling results to the RWCQB.

5.5. Disposal

Although previous soil investigation results indicate that the material is neither classified as California-hazardous nor RCRA-hazardous, the results of the stockpile sampling and analysis will be used to further profile the material prior to use or disposal. It is anticipated that the soil at the site will not be classified as California-hazardous or RCRA-hazardous, but that under Method 7471A may have detectable mercury and will therefore be considered a threat to water quality by the RWQCB.

Soil, and the corresponding roots, that are not classified as a threat to water quality, California-hazardous, or RCRA-hazardous may be reused on site, subject to the approval of the Resident Engineer.

Soil, and the corresponding roots, will be disposed of at Class III waste facility, such as Cold Canyon Landfill in San Luis Obispo, California provided that: 1) the total mercury concentration is less than 2.0 ppm; or 2) the total mercury concentration is between 2 ppm and 20 ppm and does not exceed the Soluble Threshold Limit Concentration (STLC) of 0.2 ppm.

Soil, and the corresponding roots, that exceed STLC, TTLC, and/or TCLP values would be classified as California-hazardous and/or RCRA-hazardous, and will therefore be disposed of at a Class 1 hazardous waste facility, such as Chemical Waste Management's disposal facility in Kettleman City, California, per section 25157.8 of the California Health and Safety Code.

5.6. Soil Transportation

Stockpiled soil and roots requiring disposal will be loaded into end-dump trucks for transport to appropriate disposal location.

Entry to the work sites will be controlled by temporary fencing, and site access will be monitored by the Resident Engineer, Contractor, and subcontractor personnel. Material will be loaded into trucks using an excavator, backhoe, or front-end loader. If the soil is dry, water will be used to minimize airborne dust. The trucks transporting hazardous waste will be equipped with visqueen bed liners and cover tarps to prevent the release of dust once the trucks leave the site.

After loading, all impacted materials on the exteriors of the trucks will be removed and placed either into the truck or a designated stockpile of similar material prior to the trucks leaving the site. No impacted material will be deposited on public roads.

The Contractor will maintain daily field logs. Each daily log will include the date, time, weight/volume of soil/ soil classification, trucking company, driver, and type of vehicle used. Soils

that are classified as California-hazardous or RCRA-hazardous will be delivered with a Uniform Hazardous Waste Manifest. Soil that is classified as non-hazardous will be accompanied by a bill of lading to track the shipment.

Each individual manifest or bill of lading will be completely filled out and signed by the Resident Engineer and transporter prior to leaving the site. Upon arrival at the disposal facilities, the manifest or bill of lading will be given to and signed by the disposal facility.

All workers transporting hazardous waste will be properly trained and certified in hazardous waste operations. Transporters hauling hazardous waste will be registered hazardous waste haulers.

The most likely potential for spillage is an airborne release of dust during transport due to a loose tarp. If this occurs, the driver shall immediately stop and secure the tarp. If the tarp has ripped and cannot be used, the driver will obtain a replacement tarp.

6. DEWATERING GROUNDWATER

There is a potential for groundwater to be encountered during the excavation. Dewatering will be performed in accordance with the Diversion and Dewatering Plan previously approved by the RWQCB, the Storm Water Pollution Prevention Plan, Caltrans' Field Guide for Construction Site Dewatering, and this Sediment Management Plan.

Dewatered groundwater, pumped from areas below existing contour elevation 72' and within the footprint of the Waters of State, has the potential to be contaminated with mercury and will be managed in accordance with this Sediment Management Plan. There are three potential methods for handling the dewatered groundwater: 1) discharge to surface water; 2) discharge to groundwater via land application; and 3) discharge to the sanitary sewer system.

Prior to discharging stored groundwater to surface water, the total mercury concentration of the water will be less than 0.05 ppb. Prior to discharging stored groundwater to groundwater via land application, the mercury concentration will be less than 2 ppb. Prior to discharging to the sanitary sewer system, written approval will be obtained from the Cambria Community Services District (CCSD), the agency responsible for operating the sanitary sewer system. All of the CCSD requirements for discharge to their collection system, including flow restrictions and sampling requirements, will be met prior to discharging to the sanitary sewer system. A copy of said written approval will be provided by the County to the RWQCB upon request.

The Contractor will submit the proposed dewatering method to the County for approval prior to initiating dewatering activities. The submittal will include a detailed description of the dewatering and discharge activities, including anticipated quantity of water; discharge method; location, method, design, and capacity of proposed facilities (tanks or lined basins) to store pumped groundwater;

method(s) to prevent erosion at the discharge location; method(s) to prevent percolating water from day-lighting, overtopping, or otherwise becoming surface water; equipment; and monitoring procedures.

Basins and/or tanks will be located outside the Waters of the State and in a location not affected by surface run-on or run-off. Water stored in each basin and/or tank utilized by the Contractor to store pumped groundwater will be analyzed for total mercury concentration in accordance with Method 1631.

Samples will be collected at a minimum rate of 4 samples per basin or tank or one sample per 5000 gallons, whichever yields the greatest number of samples. A unique numbering system will be applied to ensure proper identification and tracking of samples and basins or tanks. Each sample container will be labeled with a unique sample number, location, time of collection, initials of collector, date, and any other pertinent information. Each sample will be recorded on a chain-of-custody form. A sample number will be assigned to identify the basin or tank where the sample originated. Samples collected during a given day will be preserved and delivered to a state certified laboratory for analysis in accordance with Method 1631 and the laboratory's requirements.

Every four samples from each basin or tank will be composited by the laboratory into one composite sample for analysis. Each composite sample will be analyzed for total mercury concentration using Method 1631. The test results will be required to confirm the suitability of the Contractor's proposed method of discharge prior to discharging stored groundwater from the tank or basin.

All sediment collected during the dewatering of groundwater within the Waters of the State and below contour elevation 72, regardless of the discharge method used, will be stockpiled, sampled, and disposed of in accordance with the requirements of this Sediment Management Plan.

Dewatering operations will be performed in accordance with all applicable permits, within the project limits, and within the seasonal window allowed. Ground disturbance resulting from dewatering operations will be backfilled and repaired in accordance with the Caltrans Standard Specifications. Following completion of construction, all disturbed areas will be restored to their previous condition as shown on the plans and stabilized in accordance with the erosion control plans and the Storm Water Pollution Prevention Plan.

Throughout the period of active dewatering of groundwater, the County will submit to the RWQCB weekly monitoring reports. The County will submit the first report on the first Wednesday after the dewatering activities commence. The County will submit the last report the Wednesday after the dewatering activities are complete.

The weekly reports will include:

1. Time, date, and location of dewatering, discharge method, and location of discharge(s);
2. Summary of visual monitoring and water sampling results;
3. Estimated volume of discharges;
4. Photographs; and
5. Maps.

7. REFERENCES

Kleinfelder, Inc., 2006, Premilinary Foundation Report, Main Street Bridge at Santa Rosa Creek, Cambria, San Luis Obispo County, California, State Bridge No. 49C-0337, December, 14, 2006.

Kleinfelder, Inc., February 2013, Limited Environmental Assessment and Geologic Reconnaissance, Main Street Bridge Replacement Project, Cambria, California, February 21, 2013.

Kleinfelder, Inc., April 2013, Soil Boring Assessment for Mercury, Main Street Bridge Replacement Project, Cambria, California, April 8, 2013

EXHIBIT A

401 Water Quality Certification

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February 22, 2013

Dave Flynn
County of San Luis Obispo
Department of Public Works
Deputy Director
County Government Center Rm. 207
San Luis Obispo, CA 93408
Email: dflynn@co.slo.ca.us

VIA ELECTRONIC MAIL

Dear Mr. Flynn:

WATER QUALITY CERTIFICATION NUMBER 34012WQ19 FOR CAMBRIA MAIN STREET BRIDGE REPLACEMENT PROJECT, SAN LUIS OBISPO COUNTY

Thank you for the opportunity to review your June 29, 2012 application for water quality certification of the Cambria Main Street Bridge Replacement (Project). The application was completed on June 29, 2012. In addition to the application you also submitted supplemental information in response to Central Coast Water Board staff's request. The project, if implemented as described in your application and supplemental information, and with the additional mitigation requirements and conditions required by this Certification, appears to be protective of beneficial uses of State waters. We are issuing the enclosed Standard Letter of Certification.

At this time, we do not anticipate issuing additional requirements based on your application. Should new information come to our attention that indicates a water quality problem, we may require additional monitoring and reporting, issue Waste Discharge Requirements, or take other action.

Your Section 401 Water Quality Certification application and California Environmental Quality Act (CEQA) documents indicate that project activities may affect beneficial uses and water quality. The Central Coast Regional Water Quality Control Board (Central Coast Water Board) issues this certification to protect water quality and associated beneficial uses from project activities. We need reports to determine compliance with this certification. All technical and monitoring reports requested in this certification, or anytime after, are required per Section 13267 of the California Water Code.

Your failure to submit reports required by this certification, or your failure to submit a report of technical quality acceptable to the Executive Officer, may subject you to enforcement action per Section 13268 of the California Water Code. The Central Coast Water Board will base enforcement actions on the date of certification. Any person affected by this Central Coast Water Board action may petition the State Water Resources Control Board (State Board) to review this action in accordance with California Water Code Section 13320; and Title 23, California Code of Regulations, Sections 2050 and 3867-3869. The State Board, Office of Chief Counsel, PO Box 100, Sacramento, CA 95812, must receive the petition within 30 days of the

date of this certification. We will provide upon request copies of the law and regulations applicable to filing petitions.

If you have questions please contact **Tamara Presser** at (805) 549-3334 or via email at Tamara.Presser@waterboards.ca.gov or Phil Hammer at (805) 549-3882. Please mention the above certification number in all future correspondence pertaining to this project.

Sincerely,

for
Kenneth A. Harris Jr.
Interim Executive Officer

Enclosure: Action on Request for CWA Section 401 Water Quality Certification

Attachments:
1. "Rough Estimate of Sediment Mercury Concentration to Protect Water Quality and Beneficial Uses, Santa Rosa Creek, Cambria, San Luis Obispo County, CA, Main Street Bridge Project"
2. Soil Boring Location

cc: With enclosure and attachments

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Cori Marsalek
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Action on Request for
Clean Water Act Section 401 Water Quality Certification
for Discharge of Dredged and/or Fill Materials

PROJECT: Cambria Main Street Bridge Replacement

APPLICANT: Dave Flynn
County of San Luis Obispo Department of Public Works
County Government Center Rm. 207
San Luis Obispo, CA 93408

ACTION:
1. ■ Order for Standard Certification
2. ☐ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment per section 13330 of the California Water Code and section 3867 of Title 23 of the California Code of Regulations (23 CCR).

2. This certification action is not intended to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed per 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license was being sought.

3. The validity of any non-denial certification action (Actions 1 and 2) shall be conditioned upon total payment of the fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

4. This certification is subject to the acquisition of all local, regional, state, and federal permits and approvals as required by law. Failure to meet any conditions contained herein or any conditions contained in any other permit or approval issued by the State of California or any subdivision thereof may result in the revocation of this Certification and civil or criminal liability.

5. In the event of a violation or threatened violation of this certification, the violation or threatened violation shall be subject to any remedies, penalties, process or sanctions as provided for under state law. For purposes of Section 401(d) of the Clean Water Act, the applicability of any state law authorizing remedies, penalties, process or sanctions for the violation or threatened violation constitutes a limitation necessary to assure compliance with the water quality standards and other pertinent requirements incorporated into this certification.

6. In response to a suspected violation of any condition of this certification, the Central Coast Water Board may require the holder of any permit or license subject to this certification to

furnish, under penalty of perjury, any technical or monitoring reports the Central Coast Water Board deems appropriate, provided that the burden, including costs, of the reports shall have a reasonable relationship to the need for the reports and the benefits obtained from the reports.

7. The total fee for this project is $4962.00. The remaining fee payable to the Central Coast Water Board is $0.

CENTRAL COAST WATER BOARD CONTACT PERSON:

Tamara Presser
(805) 549-3334
Tamara.Presser@waterboards.ca.gov

Please refer to the above certification number when corresponding with the Central Coast Water Board concerning this project.

WATER QUALITY CERTIFICATION:
I hereby issue an order certifying that any discharge from the Cambria Main Street Bridge Replacement Project shall comply with the applicable provisions of sections 301 ("Effluent Limitations"), 302 ("Water Quality Related Effluent Limitations"), 303 ("Water Quality Standards and Implementation Plans"), 306 ("National Standards of Performance"), and 307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act.

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with the applicant's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Central Coast Water Board's Water Quality Control Plan (Basin Plan).

for _____ February 22, 2013
Kenneth A. Harris Jr. Date
Interim Executive Officer
Central Coast Water Board

PROJECT INFORMATION AND CONDITIONS

Application Date	Received: June 29, 2012 Completed: June 29, 2012
Applicant	Dave Flynn, Deputy Director email: dflynn@co.slo.ca.us (805) 781-5252 County of San Luis Obispo Department of Public Works County Government Center Rm. 207 San Luis Obispo, CA 93408
Applicant Representatives	N/A
Project Name	Cambria Main Street Bridge Replacement
Application Number	34012WQ19
Type of Project	Bridge replacement
Project Location	Cambria Latitude: 35° 33' 57.53" N Longitude: 121° 04' 24.93" W
County	San Luis Obispo
Receiving Water(s)	Santa Rosa Creek 310.14 Estero Bay Hydrologic Unit
Water Body Type	Streambed
Designated Beneficial Uses	Municipal and Domestic Supply (MUN) Agricultural Supply (AGR) Industrial Service Supply (IND) Ground Water Recharge (GWR) Water Contact Recreation (REC-1) Non-Contact Recreation (REC-2) Wildlife Habitat (WILD) Cold Fresh Water Habitat (COLD) Warm Fresh Water Habitat (WARM) Migration of Aquatic Organisms (MIGR) Spawning, Reproduction, and/or Early Development (SPWN) Rare, Threatened or Endangered Species (RARE) Freshwater Replenishment (FRSH) Commercial and Sport Fishing (COMM)
Project Description (purpose/goal)	The purpose of this project is to replace the existing bridge which is deemed functionally obsolete, stabilize banks to prevent future scour, remove the in-stream pier to improve flow characteristics of Santa Rosa Creek, and improve traffic safety with the new alignment. Central Coast Regional Water Quality Control Board (Central Coast Water Board) staff understands that the project includes the following activities: • Dewatering of the project area; • Constructing a new bridge parallel to the existing bridge; and • Removing the existing bridge to four feet below finished grade.

Project Requirements	<u>Project practices that are required to comply with 401 Water Quality Certification are as follows:</u> 1. All work performed within waters of the State shall be completed in a manner that minimizes impacts to beneficial uses and habitat. Measures shall be employed to minimize land disturbances that will adversely impact the water quality of waters of the State. Disturbance or removal of vegetation shall not exceed the minimum necessary to complete Project implementation. 2. Sediment Monitoring and Management – The Applicant shall: 1) sample and analyze the sediment that will be disturbed during construction activities to determine if it contains mercury concentrations that could impact water quality, and 2) develop a Sediment Management Plan for managing any soil that is found to contain mercury concentrations that could impact water quality. Central Coast Water Board staff finds that any soil with a mercury concentration exceeding 5.0 ug/kg (ppb) (dry weight basis) has the potential to negatively impact water quality and beneficial uses and therefore must be managed appropriately and addressed in the Sediment Management Plan (see Attachment 1). a. Sediment Testing – In January 2013, the Applicant conducted soil sampling using a hand augur and obtained samples to a three-foot depth. The Applicant shall conduct additional soil sampling to obtain information about soil at deeper depths such that the Applicant has information representing all soil depths that will be disturbed during construction activities. The County shall conduct sampling and analysis which adheres to the following specifications: i. Soil boring taken at the location identified on Soil Boring Location map (see Attachment 2); ii. Soil boring to a depth that equals or exceeds the depth at which construction activities will disturb soil; iii. Samples taken every five feet of depth, plus samples taken at lithologic contacts and zones of preferential mercury residence; and iv. Samples analyzed using Solid Waste 846 Method 7471A or 7471B. b. Sediment Management Plan – After the Applicant receives results from the subsequent sediment testing, the Applicant shall submit a Sediment Management Plan to Central Coast Water Board staff. The Sediment Management Plan shall at a minimum describe how the Applicant will manage any excavated sediment, exceeding 5.0 ug/kg mercury (dry weight basis), such that it is not discharged back into waters of the State over the short and long term. The Applicant shall not cause soil disturbance below the top of creek banks or in other waters of the State until Central Coast Water Board staff approves the Sediment Management Plan. 3. No construction activities shall be conducted below top of creek banks or in other waters of the State from October 31 to April 15. 4. For any day the National Weather Service has predicted a 25%

	or more chance of rain, the Applicant shall not conduct construction activities below top of creek banks or in other waters of the State. In preparation for the rain event, the Applicant shall install effective erosion control, sediment control, and other measures the day prior to the predicted rain. If the National Weather Service does not make the rain prediction until the day of the predicted rain, the Applicant shall install the protective measures prior to the start of the predicted rain. Construction activities in waters of the State may resume after the rain event has passed and site conditions are dry enough to continue work without additional risk to waters of the State. 5. Erosion and sediment control measures shall be on site prior to the start of construction and kept on site at all times so they are immediately available for installation in anticipation of rain events. 6. The Applicant shall implement an effective combination of erosion and sediment control measures (e.g., revegetation, fiber rolls, erosion control blankets, hydromulching, compost, straw with tackifiers, temporary basins) to prevent erosion and capture sediment. The Applicant shall implement washout, trackout, dust control, and any other applicable source control BMPs. 7. Erosion and sediment control measures and other construction BMPs shall be implemented in accordance with all specifications governing their proper design, installation, operation, and maintenance. 8. Any material stockpiled that is not actively being used during construction shall be covered with plastic unless reserved for seed banking, which requires alternative erosion and dust control BMPs. 9. The Applicant shall retain a spill plan and appropriate spill control and clean up materials (e.g., oil absorbent pads) onsite in case spills occur. 10. The Applicant shall confine all trash and debris in appropriate enclosed bins and dispose of the trash and debris at an approved site at least weekly. 11. All construction vehicles and equipment used on site shall be well maintained and checked daily for fuel, oil, and hydraulic fluid leaks or other problems that could result in spills of toxic materials. 12. The Applicant shall designate a staging area for equipment and vehicle fueling and storage at least 100 feet away from waterways, in a location where fluids or accidental discharges cannot flow into waterways. 13. All vehicle fueling and maintenance activity shall occur at least 100 feet away from waterways, and in designated staging areas. 14. Dewatering and diversion activities shall be conducted in accordance with the Applicant's Diversion and Dewatering Plan submitted to Central Coast Water Board staff on January 14, 2013. 15. If the Applicant utilizes drilling slurry at the site, the Applicant shall manage drilling slurries pursuant to the Caltrans Standard

	Specification, the Special Provisions of the Project contract, and the Caltrans Construction Manual. 16. All construction-related equipment, materials, and any temporary BMPs no longer needed shall be removed and cleaned from the site upon completion of the project. 17. All post-construction BMPs shall be implemented and functioning prior to completion of the project. 18. Central Coast Water Board staff shall be notified if mitigations as described in the 401 Water Quality Certification application for this project are altered by the imposition of subsequent permit conditions by any local, state or federal regulatory authority. The Applicant shall inform Central Coast Water Board staff of any modifications that interfere with compliance with this Certification.
Area of Disturbance	Approximately 1.273 acres Streambed: 0.05 acres permanent, 0.15 acres temporary Riparian Area: 0.28 acres permanent, 0.71 acres temporary (Jurisdictional) Wetland: 0.003 acres permanent, 0.08 acres temporary
Fill/Excavation Area	Approximately 100 linear feet of temporary or permanent fill.
Dredge Volume	N/A
U.S. Army Corps of Engineers Permit No	Nationwide Permit 3(a)– Maintenance Nationwide Permit 14 – Linear Transportation Projects Nationwide Permit 33 – Temporary Construction
Federal Public Notice	N/A
Dept. of Fish and Game Streambed Alteration Agreement	Streambed Alteration Agreement is pending. Final, signed copy will be forwarded immediately upon execution.
Status of CEQA Compliance	(Mitigated) Negative Declaration Lead Agency: San Luis Obispo County
Compensatory Mitigation Requirements	<u>The project shall include the following:</u> • Restoring 0.08 acres of jurisdictional wetlands, 0.15 acres of streambed, and 0.71 acres or riparian habitat. • Enhancing 0.009 acres of jurisdictional wetlands, 0.15 acres of streambed, and 0.84 acres or riparian habitat. • Achievement of a 60% survival ratio in revegetated areas by year five.
Total Certification Fee	$4,962.00
Additional Conditions	The Applicant shall conduct the following monitoring: 1. Visually inspect the project site and areas of waters of the State adjacent to project impact areas following completion of project construction and for five subsequent rainy seasons to ensure that the project is not causing excessive erosion, stream instability, or other water quality problems. If the project does cause water quality problems, contact the Central Coast Water Board staff member overseeing the project. You will be responsible for obtaining any additional permits necessary for implementing plans for restoration to prevent further water

	quality problems. 2. Monitor the compensatory mitigation site for five years. If success criteria is not achieved within that time, continue annual monitoring and maintenance until success criteria is achieved. Compensatory mitigation monitoring shall include assessment of progress towards achieving success criteria and any other measures identified in the application and supplemental information. The Applicant shall provide the following reporting to RB3_401Reporting@waterboards.ca.gov: 1. Project Commencement Notification - Contact Central Coast Water Board staff when the project begins to allow for a site visit. 2. Streambed Alteration Agreement - Submit a signed copy of the Department of Fish and Game's streambed alteration agreement to the Central Coast Water Board immediately upon execution and prior to any discharge to waters of the State. 3. Project Completion Report - Within 30 days of project completion, submit a project completion report that contains: a. Date of construction initiation; b. Date of construction completion; c. Status of post-construction BMPs; d. A summary of daily activities, monitoring and inspection observations, and problems incurred and actions taken; e. Clearly identified photo-documentation of all areas of permanent and temporary impact, prior to and after project construction; f. Clearly identified representative photo-documentation of other project areas, prior to and after project construction; and g. Photo-documentation of all permanent post-construction BMPs. 4. Annual Report – The Applicant shall submit to the Central Coast Water Board an Annual Report by May 31 of each year following the issuance of this Certification, regardless of whether project construction has started or not. The Applicant shall submit Annual Reports until the Applicant has conducted all required monitoring, mitigation has achieved all success criteria, and the Applicant has notified the Central Coast Water Board of mitigation completion. Each Annual Report shall include at a minimum: a. The status of the project: construction not started, construction started, or construction complete. b. The date of construction initiation, if applicable. c. The date of construction completion, if applicable d. If project construction is complete, a description of the results of the annual visual inspection of the project site and areas of waters of the State adjacent to project impact areas, including: i. Erosion conditions;

	ii. Stream stability conditions; iii. Water quality and beneficial use conditions; iv. Representative photographs of the project site and areas of waters of the State adjacent to project impact areas; and v. If the visual inspection monitoring period is over, but water quality problems persist, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the project is no longer causing excessive erosion, stream instability, or other water quality problems. e. Mitigation reporting, if mitigation installation has started, including the following information: i. Date of initiation of mitigation installation and date mitigation installation was completed; ii. Analysis of monitoring data collected in the field; iii. Documentation of progress toward achieving all mitigation performance criteria; iv. Qualitative and quantitative comparisons of current mitigation conditions with preconstruction conditions and previous mitigation monitoring results; v. Any remedial or maintenance actions taken or needed; vi. Any additional information specified in the application and supplemental information; and vii. Annual photo-documentation representative of all mitigation areas, taken from vantage points from which Central Coast Water Board staff can identify changes in size and cover of plants. Compare photos of installed mitigation with photos of the mitigation areas prior to installation. f. A description of mitigation completion status, that identifies the amount of mitigation monitoring and maintenance remaining, or certifies that mitigation is complete and all required mitigation monitoring and maintenance has been conducted and all success criteria achieved. If the monitoring period is over, but all success criteria have not been achieved, the Annual Report shall identify corrective measures to be undertaken, including extension of the monitoring period until the criteria are met.

ROUGH ESTIMATE OF SEDIMENT MERCURY CONCENTRATION TO PROTECT WATER QUALITY AND BENEFICIAL USES SANTA ROSA CREEK, CAMBRIA, SAN LUIS OBISPO COUNTY, CA MAIN STREET BRIDGE PROJECT

February 15, 2013

(David Schwartzbart, RWQCB
805.542.4643, david.schwartzbart@waterboards.ca.gov)

PURPOSE

This roughly estimates the Santa Rosa Creek sediment mercury concentration that, if not exceeded, adequately protects Santa Rosa Creek water quality and beneficial uses with no sediment controls applied during County disturbance, handling and disposal of subject sediment at the Main Street Bridge project.

CAVEAT

This estimate is based on several assumptions and educated judgment. It is not a comprehensive, detailed, properly referenced, technical analysis of all relevant aspects of all available data and literature. However, based on site sediment data already generated, the limited project scope, and general understanding of vicinity mercury conditions, this estimate appears adequate for the stated purpose. If conditions, plans or data deviate significantly from those considered herein, additional analysis of acceptable sediment mercury concentration may be appropriate.

DISCUSSION

In addition to other data, I originally planned to consider background mercury concentrations in Santa Rosa Creek sediment – background to this project, and natural background upstream of historic mining impacts – but upon further consideration, I realized background is irrelevant. What matters are water quality standards that apply to Santa Rosa Creek, and the concentration of mercury in sediment that could cause exceedance of those standards if no sediment controls are applied.

Mercury present in subject sediment is assumed to be cinnabar (HgS) because that was the primary mercury ore species at the upstream Oceanic Mine and other mines. It is possible minor quantities of other mercury species or free mercury were present in the ore, or were formed in upstream ore processing plants or tailings disposal sites, or in the riparian environment, but for this rough estimate it appears unnecessary to consider those relatively minor occurrence species. For example, inorganic mercury can convert to the more soluble and toxic methylmercury by sulfate-reducing bacteria in saturated, anoxic sediment, but those conditions are not known to exist at the project site. Cinnabar has very low solubility in water (~10^{-25} g/100 ml), and may be considered virtually insoluble in neutral, ambient waters. Thus, for this rough estimate, we needn't consider mercury dissolved from sediment into the water column, but only sediment-bound mercury suspended in the water column.

The concentration of sediments suspended in the creek water column, or total suspended solids (TSS), can vary widely with varying conditions. Typical TSS of quiet, clear waters is likely in the low tens mg/L range, with water appearing cloudy when TSS is in the low hundreds mg/L range, but debris flows generated by massive erosion during violent storms might result in TSS in percent or tens percent range. Similarly, unprotected excavation of sediment in flowing waters

could conceivably cause percent range TSS. Therefore, for purposes of this rough estimate, I conservatively and somewhat arbitrarily estimate that 1% TSS is the highest TSS concentration that could exist in Santa Rosa Creek water from implementation of this project with no physical or chemical sediment controls applied. Thus it is conceivable that total mercury concentration in the water column from suspended sediment could be as high as 1% of the mercury concentration in sediment, if no sediment controls were applied during project implementation.

The June 2011 "*Water Quality Control Plan for the Central Coastal Basin*" (Basin Plan) states beneficial uses for surface waters in the Central Coast region. Basin Plan Table 2-1 "*Identified Uses of Inland Surface Waters*" states Santa Rosa Creek has the Municipal and Domestic Supply (MUN) beneficial use, and the Commercial and Sport Fishing (COMM) beneficial use, among 12 other uses. The Basin Plan defines the MUN beneficial use, in part, as "*Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply*." and defines the COMM beneficial use as "*Uses of water for commercial or recreational collection of fish, shellfish, or other organisms including, but not limited to, uses involving organisms intended for human consumption or bait purposes.*"

Various standards apply to the various beneficial uses of a water body, in some cases with multiple standards applying to a single use. In protecting a water body, we apply the most stringent standard, so all beneficial uses are protected. The California Toxics Rule (CTR) (65 Fed. Register 31682-31719, adding Section 131.38 to Title 40 of the Code of Federal Regulations, on May 18, 2000) promulgated standards that apply to Santa Rosa Creek. In many cases, CTR standards are the most stringent of all standards applicable to a water body. For today's rough estimate, I did not survey all standards applicable to all uses of Santa Rosa Creek to determine the most stringent standard, but assumed the CTR standard is the most stringent.

CTR Section 131.38 "*Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California.*" states, in part: "*(a) Scope. This section promulgates criteria for priority toxic pollutants in the State of California for inland surface waters and enclosed bays and estuaries. This section also contains a compliance schedule provision.*" and "*(b)(1) Criteria for Priority Toxic Pollutants in the State of California as described in the following table:*". Subject table contains various columns for multiple parameters. Column D "*Human Health (10^{-6} risk for carcinogens) For consumption of: Water & Organisms (ug/L) D1*" states the standard for total mercury in the water column is 0.050 ug/L (ppb). Thus, assuming the CTR standard is the most stringent applicable standard, to protect the MUN and COMM beneficial uses, Santa Rosa Creek water shall not contain more than 0.050 ug/L (ppb) total mercury.

Because sediment might comprise up to 1% of the water column, sediment may contain 100 times the allowable water column concentration. Thus, ignoring the slight inaccuracies of converting sediment concentration units to water column concentration units, and incorporating all the above assumptions and judgments, the maximum sediment mercury concentration that should be protective of Santa Rosa Creek beneficial uses is 0.050 ppb x 100, or 5 ppb.

As an additional check on whether the above assumptions appear reasonable – for example, I did not rigorously analyze sediment and pore water habitat impacts, in favor of water column and organism consumption impacts – I consulted National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQuiRTs) for freshwater sediment, which consider sediment habitat protection, among other factors. The most stringent SQuiRT concentration for freshwater sediment mercury is 174 ppb dry weight, reinforcing that my calculated 5 ppb is adequately protective.

CONCLUSION

With incorporation of all above assumptions and judgments, a Santa Rosa Creek sediment mercury concentration of 5.0 ug/kg (ppb) or less (dry weight basis) is roughly estimated to be adequately protective of Santa Rosa Creek water quality and beneficial uses, and would require no sediment controls during implementation of subject Main Street Bridge project. If sediment mercury concentrations exceed 5.0 ug/kg (ppb) dry weight, sediment controls should be applied.

2-13, Sed. Hg Standard, Main St. Bridge

DIST	COUNTY	ROUTE	MILE POST TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
05	SLO			8	51

S. Onishuk 01/18/13
REGISTERED ENGINEER – CIVIL

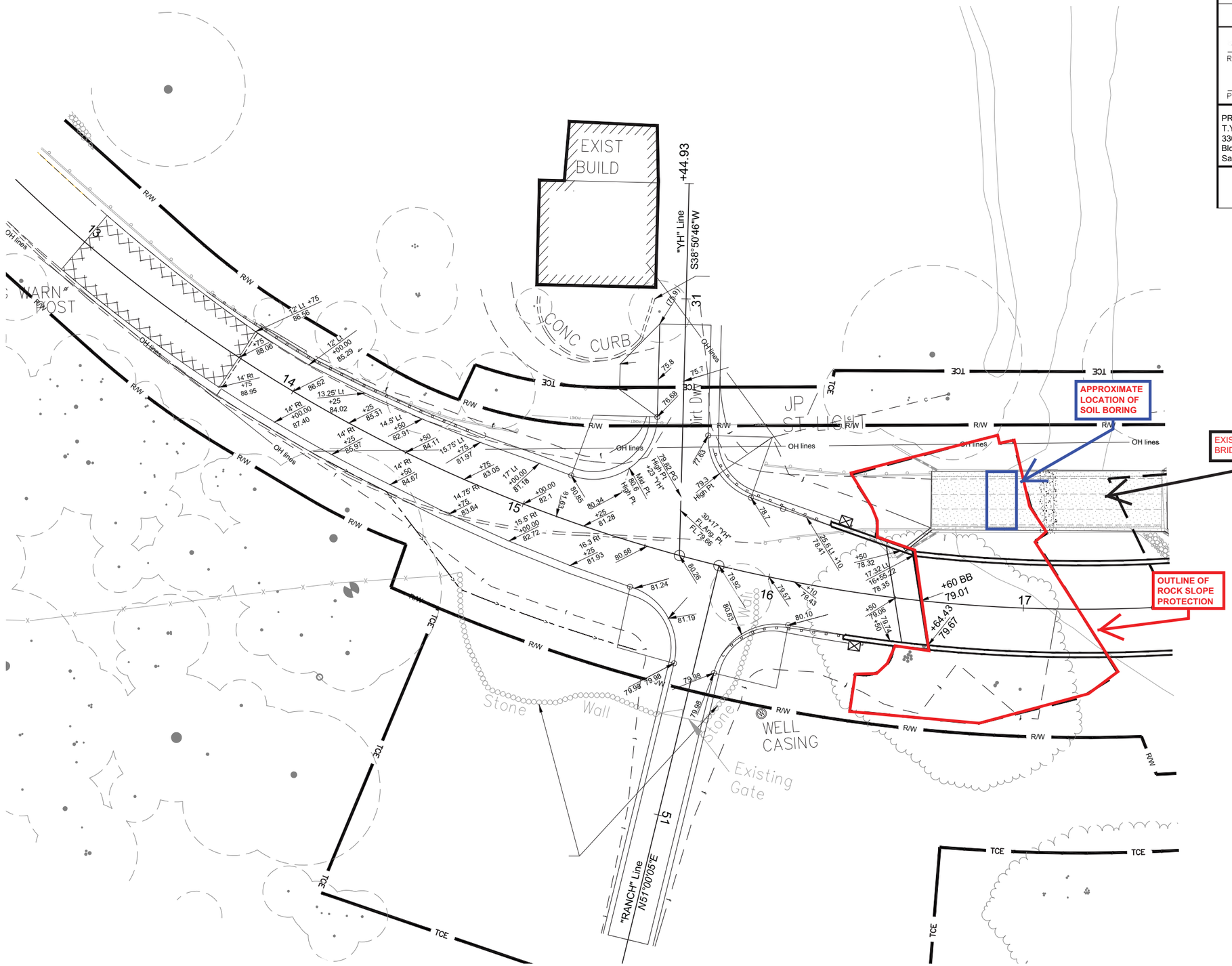
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER
S. Onishuk
No. C48052
Exp. 12/31/13
CIVIL
STATE OF CALIFORNIA

PRIME CONSULTANT:
T.Y. LIN INTERNATIONAL
3301 C Street,
Bldg. 100-M
Sacramento, CA 95816

DESIGNER:
BENGAL ENGINEERING
250 Big Sur Drive
Goleta, CA 93117

The County of San Louis Obispo, & their officers or agents shall not be responsible for the accuracy or completeness of electronic copies of the plan sheet.



PROJECT ENGINEER	Scott Onishuk
CALCULATED/ DESIGNED BY	MB
CHECKED BY	SO
DATE REVISED:	
REVISED BY:	

SAN LUIS OBISPO COUNTY, CALIFORNIA
Cori Marsalek, PE, Project Manager

LAST REVISION 01/18/13

FOR REDUCE PLANS ORIGINAL SCALE IS IN INCHES 0 1 2 3

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EXHIBIT B

FOLLOW-UP CORRESPONDENCE WITH RWQCB

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To: "cmarsalek@co.slo.ca.us" <cmarsalek@co.slo.ca.us>, "jfarhar@co.slo.ca.us" <jfarhar@co.slo.ca.us>, "Hammer, Phillip@Waterboards" <Phillip.Hammer@waterboards.ca.gov>, "jwerst@co.slo.ca.us" <jwerst@co.slo.ca.us>, "dflynn@co.slo.ca.us" <dflynn@co.slo.ca.us>, "mhutchinson@co.slo.ca.us"

Cc:

Bcc:

Subject: RE: 34012WQ19_Cambria Bridge Project - Soil Testing Method

From: "Presser, Tamara@Waterboards" <Tamara.Presser@waterboards.ca.gov> - Monday 03/04/2013 04:40 PM

Presser, Tamara@Waterboards *Hi Cori, The approach you have outlined below is the correct approach*

Hi Cori,

The approach you have outlined below is the correct approach to take.

Thanks,

Tamara Presser, P.E.

Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401
805.549.3334

From: cmarsalek@co.slo.ca.us [mailto:cmarsalek@co.slo.ca.us]
Sent: Monday, March 04, 2013 3:25 PM
To: Presser, Tamara@Waterboards
Cc: jfarhar@co.slo.ca.us; Hammer, Phillip@Waterboards; jwerst@co.slo.ca.us; dflynn@co.slo.ca.us; mhutchinson@co.slo.ca.us
Subject: Re: 34012WQ19_Cambria Bridge Project - Soil Testing Method

Hi Tamara,

The County will proceed with Test Method 7471A. We will stay within the requirements and quality control of that test and the detection limit will become the new threshold at which the County will be required by the Certification to address in the soil management plan. The County assumes that a no detect reading with Method 7471A will mean that the soil is not a threat to water quality and does not need to be addressed in the Sediment Management Plan.

For instance according to Dave's conversation with BC Lab, they might be able to detect down to 20 ppb. Based on my discussion with FGL they might be able to detect down to 50 - 30 ppb. It is also worth nothing that practical quantitation limit (PQL) is 100 ppb for this test, and the detection limit somewhere between 50 ppb and 20 ppb is only achieved with reduced reliability in the results.

Please confirm that this is the correct approach to take.

Thank you,

Cori Marsalek, P.E.
County of San Luis Obispo
Public Works
(805) 781-4995

From: "Presser, Tamara@Waterboards" <Tamara.Presser@waterboards.ca.gov>
To: "cmarsalek@co.slo.ca.us" <cmarsalek@co.slo.ca.us>
Date: 03/01/2013 02:39 PM
Subject: 34012WQ19_Cambria Bridge Project - Soil Testing Method

---

Hi Cori,

Dave said that he talked to you yesterday regarding your question about the soil testing method. I wanted to follow up with an email. Please use the 7471 A or B test method as prescribed by the 401 Certification. Dave talked to the BC lab and they said that they could most likely reach a 20 ppb detection limit. Please request the lab that you have conduct the tests to use the lowest possible detection limit they can reach. We recognize that the lab will most likely not be able to reach a detection limit of 5 ppb, which is the threshold prescribed in the Certification for determining if specific sediment management is required. We recognize that there's potential for some of the samples to be between 5ppb and the detection limit, but that is a risk that we are okay with in order to use an appropriate testing method.

Tamara Presser, P.E.

Central Coast Water Board
895 Aerovista Place, Suite 101
San Luis Obispo, CA 93401
805.549.3334

[Scanned @co.slo.ca.us]

EXHIBIT C

CENTRAL COAST HYDROLOGIC REGION'S SANTA ROSA VALLEY GROUNDWATER BASIN BULLETIN 118

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Santa Rosa Valley Groundwater Basin

- Groundwater Basin Number: 3-36
- County: San Luis Obispo
- Surface Area: 4,480 acres (7.0 square miles)

Basin Boundaries and Hydrology

The Santa Rosa Valley Groundwater Basin underlies Santa Rosa Valley and is bounded on the west by the Pacific Ocean and on all other sides by impermeable rocks of the Jurassic to Cretaceous age Franciscan Group. The valley is drained by Green Valley, Perry, and Santa Rosa Creeks. Average annual rainfall increases from about 20 inches at the coast to about 26 inches at the eastern end of the valley floor to more than 40 inches at the creek headwaters (Yates and Van Konyenburg 1998).

Hydrogeologic Information

Water Bearing Formations

Groundwater is found in alluvial deposits with an average specific yield of 17 percent (DWR 1975). Groundwater is unconfined and generally flows westward.

Holocene Deposits. Alluvial deposits consist of unconsolidated sand, clay, silt, and gravel of primarily fluvial origin. Commonly, the deposits are about 100 feet thick beneath the center of the valley and more than 120 feet thick at the coast (Yates and Van Konyenburg 1998).

Recharge Areas

Recharge to the basin is largely by percolation of stream flow and, to a lesser extent, from infiltration of precipitation and excess irrigation flow (DWR 1958).

Groundwater Level Trends

In 1988, the rate of water-level decline slowed or even reversed slightly at most wells during November and early December following declines of 1 to 7 feet/month from February through August (Yates and Van Konyenburg 1998). This variation likely indicates seasonal fluctuation in groundwater level.

Groundwater Storage

Groundwater Storage Capacity. The total groundwater storage capacity has been estimated at 24,700 af (DWR 1975) and 170,000 af (Camrosa Water District 2001).

Groundwater in Storage. Unknown.

Groundwater Budget (Type A)

A groundwater budget for the Santa Rosa Groundwater Basin was simulated using a groundwater flow model for April 1988 through March 1989 (Yates and Van Konyenburg 1998). Recharge to the basin from rainfall totaled 140 af/yr. Recharge from creek flow was estimated at 470 af/yr. Subsurface inflow was 370 af/yr and subsurface outflow to the ocean was 60 af/yr.

Recharge to the basin from irrigation-return flow was 330 af/yr. Agricultural pumpage was estimated at 890 af/yr. Municipal and rural pumpage totaled 260 af/yr. Phreatophyte transpiration was estimated at 160 af/yr. Groundwater pumping during 1998 to 1999 totaled 5,900 af (Cambria Water District 2001).

Groundwater Quality

Characterization. Analysis of water from 1 public supply well has a TDS content of 680 mg/L.

Impairments. There is evidence that points to the possibility of seawater intrusion (DWR 1975). Chloride content increased more than ten times, from 80 mg/L in 1955 to 933 mg/L in 1975 (DWR 1975). Background chloride concentrations typically ranged from 30 to 270 mg/L (Yates and Van Konyenburg 1998). One well had a chloride concentration of 1,925 mg/L in November 1961 (Yates and Van Konyenburg 1998).

Water Quality in Public Supply Wells

Constituent Group[1]	Number of wells sampled[2]	Number of wells with a concentration above an MCL[3]
Inorganics – Primary	1	0
Radiological	1	0
Nitrates	1	0
Pesticides	1	0
VOCs and SOCs	1	0
Inorganics – Secondary	1	1

[1] A description of each member in the constituent groups and a generalized discussion of the relevance of these groups are included in *California's Groundwater – Bulletin 118* by DWR (2003).
[2] Represents distinct number of wells sampled as required under DHS Title 22 program from 1994 through 2000.
[3] Each well reported with a concentration above an MCL was confirmed with a second detection above an MCL. This information is intended as an indicator of the types of activities that cause contamination in a given basin. It represents the water quality at the sample location. It does not indicate the water quality delivered to the consumer. More detailed drinking water quality information can be obtained from the local water purveyor and its annual Consumer Confidence Report.

Well Production characteristics

	Well yields (gal/min)	
Municipal/Irrigation	Range: to 708	Average: 400 (DWR 1958)
	Total depths (ft)	
Domestic		
Municipal/Irrigation	Range: to 130	Average: 80 ft (DWR 1958)

Active Monitoring Data

Agency	Parameter	Number of wells /measurement frequency
	Groundwater levels	NKD
	Miscellaneous water quality	NKD
Department of Health Services and cooperators	Title 22 water quality	2

NKD: No Known Data

Basin Management

Groundwater management:

Water agencies

Public	Cambria CSD, Camrosa WD
Private	Santa Rosa MWC

References Cited

California Department of Water Resources (DWR). 1958. *San Luis Obispo County Investigation*. Bulletin 18. 288 p.

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Camrosa Water District. 2000. *Draft: 2000 Urban Water Management Plan.* http://www.camrosa.com/Public%20Information/UWMP2000Draft.pdf (October 2001).

Yates, E. B., and K. M. Van Konyenburg. 1998. *Hydrogeology, Water Quality, Water Budgets, and Simulated Responses to Hydrologic Changes in Santa Rosa and San Simeon Creek ground-water basins, San Luis Obispo County, California.* U.S. Geological Survey Water-Resources Investigations Report 98-4061.

Additional References

California Department of Water Resources (DWR). 1958. *San Luis Obispo County Investigation*. Bulletin 18, 288 p.

_____, Central District. 1987. *Santa Rosa Plain Ground Water Model.* 318 p.

Cardwell, G. T. 1958. *Geology and Ground Water in the Santa Rosa and Petaluma Valley areas, Sonoma County, California.* U. S. Geological Survey Water-Supply Paper 1427.

Leonard, A.R., and G. T. Cardwell. 1955. *Statement on Ground-Water Conditions in Santa Rosa, Petaluma, and Sonoma Valleys, Sonoma County, California.* U. S. Geological Survey.

U.S. Bureau of Reclamation. 1990. *Long-Term Wastewater System Draft Environmental Impact Report, Statement : Santa Rosa Subregional Water Reclamation System.*

_____. 1992. *Santa Rosa Subregional Water Reclamation System: Long-Term Wastewater System Final Environmental Impact Statement.*

Errata

Changes made to the basin description will be noted here.