California Regional Water Quality Control Board

San Diego Region

Over 50 Years Serving San Diego, Orange, and Riverside Counties
Recipient of the 2004 Environmental Award for Outstanding Achievement from USEPA

Arnold Schwarzenegger Governor

9174 Sky Park Court, Suite 100, San Diego, California 92123-4340 (858) 467-2952 • Fax (858) 571-6972 http://www.waterboards.ca.gov/sandiego

September 3, 2010

Linda S. Adams

Secretary for

Environmental

Protection

In reply refer to: 751073: jebsen

Molly Luettgerodt County of San Diego 5469 Kearny Villa Rd, Ste. 305 San Diego, CA 92123

Dear Ms. Luettgerodt:

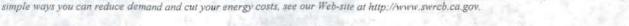
SUBJECT: Action on Request for Clean Water Act Section 401 Water Quality Certification for the Calavo Drive Drainage Improvement Project, Water Quality Certification No. 10C-024

Enclosed find Clean Water Act Section 401 Water Quality Certification (Certification) with acknowledgment of enrollment under State Water Resources Control Board Order No. 2003-017 DWQ for Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have received State Water Quality Certification for the Calavo Drive Drainage Improvement Project. A description of the project can be found in the project information sheet and on location and site maps compiled by the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), which are included as Attachments 1 through 6.

Any petition for reconsideration of this Certification must be filed with the State Water Resources Control Board within 30 days of certification action (23 CCR § 3867). If no petition is received, it will be assumed that you have accepted and will comply with all the conditions of this Certification.

Failure to comply with all conditions of this Certification may subject you to enforcement actions by the San Diego Water Board including administrative enforcement orders requiring you to cease and desist from violations, or to clean up waste and abate existing or threatened conditions of pollution or nuisance; administrative civil liability, referral to the State Attorney General for injunctive relief; and, referral to the District Attorney for criminal prosecution.

California Environmental Protection Agency







The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of

Molly Luettgerodt County of San Diego 401 Certification10C-024

In the subject line of any response, please include the requested "In reply refer to:" information located in the heading of this letter. If you have any questions regarding this notification, please contact Ms. Jody Ebsen directly at 858-636-3146 or by email via jebsen@waterboards.ca.gov.

Respectfully,

DAVID W. GIBSON Executive Officer

aux w. Co

Enclosure:

Clean Water Act Section 401 Water Quality Certification No. 10C-024 for the Calavo Drive Drainage Improvement Project, with 6 attachments

cc: Refer to Attachment 2 of Certification 10C-024 for Distribution List.

Tech Staff In	fo & Use
File No.	10C-024
WDID	9000002049
Reg. Measure ID	373601
Place ID	751073
Party ID	287958
Person ID	503170



California Regional Water Quality Control Board



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

PROJECT: Calavo Drive Drainage Improvement

Project, Certification Number 10C-024,

WDID: 9 000002049

APPLICANT: County of San Diego

Attn: Molly Luettgerodt

5469 Kearny Villa Rd, Ste. 305

San Diego, CA 92123

CIWQS

Reg. Meas. ID: 373601 Place ID:751073 Party ID: 287958

ACTION:

☑ Order for Low Impact Certification	☐ Order for Denial of Certification
☐ Order for Technically-conditioned Certification	☐ Waiver of Waste Discharge Requirements
☑ Enrollment in SWRCB GWDR Order No. 2003-017 DWQ	☐ Enrollment in Isolated Waters Order No. 2004-004 DWQ

PROJECT DESCRIPTION:

The proposed project is to improve the drainage facility along Calavo Drive between Rancho Road and Luisa Drive in the Mount Helix area in San Diego County, by replacement of the existing 60-inch corrugated metal pipe with a 10-foot by 7-foot reinforced concrete box culvert and associated head and wing walls, concrete aprons, cutoff walls, and energy dissipaters at the inlet and outlet.

STANDARD CONDITIONS:

The following three standard conditions apply to <u>all</u> Certification actions, except as noted under Condition 3 for denials (Action 3).

1. This Certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to

California Environmental Protection Agency

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our Web-site at http://www.swrcb.ca.gov. Recycled Paper



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 and must not be construed 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 pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
- 3. The validity of any non-denial Certification action (Actions 1 and 2) must be conditioned upon total payment of the full fee required under 23 CCR section 3833, unless otherwise stated in writing by the certifying agency.

ADDITIONAL CONDITIONS:

In addition to the three standard conditions, County of San Diego must satisfy the following:

A. GENERAL CONDITIONS:

- 1. Water Quality Certification No. 10C-024 (Certification) is only valid if the project begins no later than 5 (five) years from the date of issuance. If the project has not begun within 5 years from the date of issuance, then this Certification expires.
- 2. County of San Diego must, at all times, fully comply with the engineering plans, specifications and technical reports submitted to the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), to support this Certification and all subsequent submittals required as part of this Certification and as described in Attachment 1. The conditions within this Certification must supersede conflicting provisions within such plans submitted prior to the Certification action. Any modifications thereto, would require notification to the San Diego Water Board and reevaluation for individual Waste Discharge Requirements and/or Certification amendment.
- During construction, County of San Diego must maintain a copy of this Certification at the project site so as to be available at all times to site personnel and agencies.
- 4. County of San Diego must permit the San Diego Water Board or its authorized representative at all times, upon presentation of credentials:
 - a. Entry onto project premises, including all areas on which wetland fill or wetland mitigation is located or in which records are kept.

b. Access to copy any records required to be kept under the terms and conditions of this Certification.

- c. Inspection of any treatment equipment, monitoring equipment, or monitoring method required by this Certification.
- d. Sampling of any discharge or surface water covered by this Order.
- 5. County of San Diego must notify the San Diego Water Board within 24 hours of any unauthorized discharge, including hazardous or toxic materials, to waters of the U.S. and/or State; measures that were implemented to stop and contain the discharge; measures implemented to clean-up the discharge; the volume and type of materials discharged and recovered; and additional best management practices (BMPs) or other measures that will be implemented to prevent future discharges.
- 6. County of San Diego must, at all times, maintain appropriate types and sufficient quantities of materials onsite to contain any spill or inadvertent release of materials that may cause a condition of pollution or nuisance if the materials reach waters of the U.S. and/or State.
- 7. This Certification is not transferable in its entirety or in part to any person except after notice to the Executive Officer of the San Diego Water Board in accordance with the following terms.
 - a. Transfer of Property Ownership: County of San Diego must notify the San Diego Water Board of any change in ownership of the project area Notification of change in ownership must include, but not be limited to, a statement that County of San Diego has provided the purchaser with a copy of the Section 401 Water Quality Certification and that the purchaser understands and accepts the certification requirements and the obligation to implement them or be subject to liability for failure to do so; the seller and purchaser must sign and date the notification and provide such notification to the Executive officer of the San Diego Water Board within 10 days of the transfer of ownership.
 - b. Transfer of Mitigation Responsibility: Any notification of transfer of responsibilities to satisfy the mitigation requirements set forth in the memo dated July 6, 2010, shall include a signed statement from an authorized representative of the new party (transferee) demonstrating acceptance and understanding of the responsibility to comply with and fully satisfy the mitigation conditions and agreement that failure to comply with the mitigation conditions and associated requirements may subject the transferee to enforcement by the San Diego Water Board under Water Code section 13385, subdivision (a). Notification of transfer of responsibilities meeting the above conditions must be provided to the San Diego Water Board within 10 days of the transfer date.



8. In the event of any violation or threatened violation of the conditions of this Certification, the violation or threatened violation must 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.

- 9. In response to a suspected violation of any condition of this Certification, the San Diego 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 San Diego Water Board deems appropriate, provided that the burden, including costs, of the reports must bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
- 10. In response to any violation of the conditions of this Certification, the San Diego Water Board may add to or modify the conditions of this Certification as appropriate to ensure compliance.
- 11. County of San Diego and successor owners must submit annual progress reports describing status of compliance with all requirements of this Certification to the San Diego Water Board prior to **August 1** of each year following the issuance of this Certification until the project has reached completion.

B. PROJECT CONDITIONS:

- Prior to the start of the project, and annually thereafter, County of San Diego must educate all personnel on the requirements in this Certification, pollution prevention measures, spill response, and BMP implementation and maintenance.
- County of San Diego must comply with the requirements of State Water Resources Control Board Water Quality Order No. 2003-0017-DWQ, Statewide General Waste Discharge Requirements for discharges of dredged or fill material that have received State Water Quality Certification. These General Waste Discharge Requirements are accessible at: http://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/general orders/go_wdr401regulated_projects.pdf.
- 3. County of San Diego must notify the San Diego Water Board in writing at least **5 days** prior to the actual commencement of dredge, fill, and discharge activities.

4. The treatment, storage, and disposal of wastewater during the life of the project must be done in accordance with waste discharge requirements established by the San Diego Water Board pursuant to CWC § 13260.

- 5. Discharges of concentrated flow during construction or after completion must not cause downstream erosion or damage to properties or stream habitat.
- 6. Water containing mud, silt, or other pollutants from equipment washing or other activities, must not be discharged to waters of the United States and/or the State or placed in locations that may be subjected to storm flows. Pollutants discharged to areas within a stream diversion area must be removed at the end of each work day or sooner if rain is predicted.
- 7. All surface waters, including ponded waters, must be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity which may result in a discharge to the receiving water. Diversion activities must not result in the degradation of beneficial uses or exceedance of water quality objectives of the receiving waters. Any temporary dam or other artificial obstruction constructed must only be built from materials such as clean gravel which will cause little or no siltation. Normal flows must be restored to the affected stream immediately upon completion of work at that location.
- 8. Substances hazardous to aquatic life including, but not limited to, petroleum products, raw cement/concrete, asphalt, and coating materials, must be prevented from contaminating the soil and/or entering waters of the United States and/or State. BMPs must be implemented to prevent such discharges during each project activity involving hazardous materials.
- C. COMPENSATORY MITIGATION FOR LOSS OF WATERS OF THE U.S. AND/OR THE STATE
- 1. Mitigation for permanent discharges to 0.002 acres (20 linear feet) of wetlands and 0.006 acres (80 linear feet) of non-wetland waters must be achieved at a 2:1 ratio for a total of 0.016 acres of riparian restoration at County of San Diego's Sweetwater Offsite Mitigation Area (letter dated July 6, 2010, County of San Diego). Temporary discharges to 0.002 acres (20 linear feet) of wetlands and 0.007 acres (100 linear feet) of non-wetland waters by a 1:1 ratio of onsite revegetation with native plant species.
- County of San Diego must restore all areas of temporary impacts and all
 other areas of temporary disturbance which could result in a discharge or a
 threatened discharge to waters of the United States/State. Restoration must
 include grading of disturbed areas to pre-project contours and revegetation



- with native species. County of San Diego must implement all necessary BMPs to control erosion and runoff from areas associated with this project.
- 3. County of San Diego must submit a mitigation establishment report (including topography maps and planting locations) to the San Diego Water Board within **90 days** of Certification issuance that describes mitigation site preparation and planting, as-built status of the mitigation project, includes maps of the mitigation site, and has an update of surplus credits available
- 4. Throughout the mitigation monitoring program mitigation areas must be maintained free of perennial exotic plant species including, but not limited to, pampas grass, giant reed, tamarisk, sweet fennel, tree tobacco, castor bean, and pepper tree. Annual exotic plant species must not occupy more than 5 percent of the onsite or offsite mitigation areas.
- 5. San Diego Water Board acceptance of the final mitigation plan applies only to the site and plan that mitigates for the Calavo Drive Drainage Improvement Project and must not be construed as approval of the mitigation site or plan for use by other current or future projects that are planning to use the Calavo Drive drainage area or the Sweetwater Offsite Mitigation Area for mitigation.
- 6. Any maintenance activities that do not contribute to the success of the mitigation site and enhancement of beneficial uses and ecological functions and services are prohibited. Maintenance activities are limited to the removal of trash and debris, removal of exotic plant species, replacement of dead native plant species and remedial measures deemed necessary for the success of the restoration program.
- 7. If at any time during the implementation and establishment of the mitigation area(s), and prior to verification of meeting success criteria, a catastrophic natural event (e.g., fire, flood) occurs and impacts the mitigation area, County of San Diego is responsible for repair and replanting of the damaged area(s).
- 8. Mitigation monitoring reports must be submitted annually until mitigation has been deemed successful. Annual monitoring reports must be submitted prior to **December 1** of each year. Monitoring reports must include, but not be limited to, the following:
 - Names, qualifications, and affiliations of the persons contributing to the report;
 - Tables presenting the raw data collected in the field as well as analyses of the physical and biological data, including at a minimum;
 - c. Topographic complexity characteristics at each mitigation site;
 - d. Upstream and downstream habitat and hydrologic connectivity;
 - e. Source of hydrology;
 - f. Width of native vegetation buffer around the entire mitigation site;

g. Qualitative and quantitative comparisons of current mitigation conditions with pre-construction conditions and previous mitigation monitoring results;

- h. Photodocumentation from established reference points;
- i. A Survey report documenting boundaries of mitigation area; and
- j. Other items specified in the final <Wetland and Riparian Mitigation and Monitoring Plan Title, Date, Author>.
- 9. In the event that the proposed mitigation does not obtain permanent success criteria, County of San Diego shall provide the San Diego Water Board with a technical report detailing the actions that will be taken to bring the mitigation up to the success criteria. This report shall also provide an evaluation of alternative mitigation opportunities within the Sweetwater Hydrologic Unit to be utilized for additional mitigation, if portions of the required mitigation are unsuccessful after five years.
- 10. For the purpose of determining mitigation credit for the removal of exotic/invasive plant species, only the actual area occupied by exotic/invasive plant species must be quantified to comply with mitigation requirements
- 11. For purposes of this Certification, establishment is defined as the creation of vegetated or unvegetated waters of the U.S. and/or the State where the resource has never previously existed (e.g. conversion of nonnative grassland to a freshwater marsh). Restoration is divided into two activities, re-establishment and rehabilitation. Re-establishment is defined as the return of natural/historic functions to a site where vegetated or unvegetated waters of the U.S. and/or the State previously existed (e.g., removal of fill material to restore a drainage). Rehabilitation is defined as the improvement of the general suite of functions of degraded vegetated or unvegetated waters of the U.S. and/or the State (e.g., removal of a heavy infestation or monoculture of exotic plant species from jurisdictional areas and replacing with native species). Enhancement is defined as the improvement to one or two functions of existing vegetated or unvegetated waters of the U.S. and/or the State (e.g., removal of small patches of exotic plant species from an area containing predominantly natural plant species). Preservation is defined as the acquisition and legal protection from future impacts in perpetuity of existing vegetated or unvegetated waters of the U.S. and/or the State (e.g., conservation easement).

D. STREAM PHOTO DOCUMENTATION PROCEDURE

County of San Diego, and its successors, must conduct photo documentation
of the project site, including all areas of permanent and temporary impact,
prior to and after project construction, and mitigation areas, including all areas
of permanent and temporary impact, prior to and after project construction.
Photo documentation must be conducted in accordance with the State Water

Resources Control Board Standard Operating Procedure Stream Photo Documentation Procedure, included as Attachment Number 6. In addition, photo documentation must include Geographic Positioning System (GPS) coordinates for each of the photo points referenced. County of San Diego must submit this information in a photo documentation report to the San Diego Water Board with the Mitigation, Maintenance, and Monitoring reports. The report must include a compact disc that contains digital files of all the photos (jpeg file type or similar).

E. GEOGRAPHIC INFORMATION SYSTEM REPORTING

 County of San Diego must submit Geographic Information System (GIS) shape files of the impact and mitigation areas within the first Mitigation Monitoring Report due for this project. All impact and mitigation areas shapefiles must be polygons. Two GPS readings (points) must be taken on each line of the polygon and the polygon must have a minimum of 10 points. GIS metadata must also be submitted.

F. REPORTING:

- All information requested in this Certification is pursuant to California Water Code (CWC) section 13267. Civil liability may be administratively imposed by the San Diego Water Board for failure to furnish requested information pursuant to CWC section 13268.
- 2. All reports and information submitted to the San Diego Water Board must be submitted in both hardcopy and electronic format. The preferred electronic format for each report submission is one file in PDF format that is also Optical Character Recognition (OCR) capable.
- County of San Diego must submit a final project report to the San Diego Water Board within 30 days of project completion. The report should include as-built drawings no bigger than 11" x 17" and photo documentation of the completed project.
- 4. All applications, reports, or information submitted to the San Diego Water Board must be signed and certified as follows:
 - For a corporation, by a responsible corporate officer of at least the level of vice president.
 - For a partnership or sole proprietorship, by a general partner or proprietor, respectively.
 - c. For a municipality, or a state, federal, or other public agency, by either a principal executive officer or ranking elected official.

5. A duly authorized representative of a person designated in Items 4.a. through 4.c. above may sign documents if:

- a. The authorization is made in writing by a person described in Items 4.a. through 4.c. above.
- b. The authorization specifies either an individual or position having responsibility for the overall operation of the regulated activity.
- c. The written authorization is submitted to the San Diego Water Board Executive Officer.
- All applications, reports, or information submitted to the San Diego Water Board must be signed and certified as follows:

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

7. County of San Diego must submit reports required under this Certification, or other information required by the San Diego Water Board, to:

Executive Officer
California Regional Water Quality Control Board
San Diego Region
Attn: 401 Certification; Project No. 10C-024
9174 Sky Park Court, Suite 100
San Diego, California 92123

8. Required Reports: The following list summarizes the reports required per the conditions of this Certification to be submitted to the San Diego Water Board.

Report Topic	Certification Condition	Due Date(s)
Annual Report	A.11	August 1 until project completion
Notification	B.3	Within 5 days of project commencement
Mitigation Establishment Report	C.3	Within 90 days of Certification issuance
Mitigation Monitoring Report	C.8	Annually by December 1
Stream Photo Documentation	D.1	With Mitigation Monitoring Reports

GIS Shape Files	E.1	With first mitigation monitoring report
Final Project Report	F.3	Within 30 days of project completion

PUBLIC NOTIFICATION OF PROJECT APPLICATION:

On March 29, 2010 receipt of the project application was posted on the San Diego Water Board web site to serve as appropriate notification to the public.

REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Ms. Jody Ebsen
California Regional Water Quality Control Board, San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123
858-636-3146
jebsen@waterboards.ca.gov

WATER QUALITY CERTIFICATION:

I hereby certify that the proposed discharge from Calavo Drive Drainage Improvement Project (Project No. 10C-024) will 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. This discharge is also regulated under State Water Board Order No. 2003-0017-DWQ, "Statewide General Waste Discharge Requirements for Dredged or Fill Discharges that have Received State Water Quality Certification (General WDRs)," which requires compliance with all conditions of this Water Quality Certification. Please note that enrollment under Order No. 2003-017 DWQ is conditional and, should new information come to our attention that indicates a water quality problem, the San Diego Water Board may issue waste discharge requirements at that time.

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 applicants' project description and/or on the attached Project Information Sheet, and (b) on compliance with all applicable requirements of the Water Quality Control Plan for the San Diego Basin Region (9) (Basin Plan).

DAVID W. GIBSON

Executive Officer

Regional Water Quality Control Board

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Attachments:

- 1. Project Information
- 2. Distribution List
- 3. Location Map
- 4. Site Map
- 5. Mitigation Map
- 6. Stream Photodocumentation Procedure

9-3-2016



ATTACHMENT 1 PROJECT INFORMATION

Applicant:

County of San Diego

Attn: Molly Luettgerodt

5469 Kearny Villa Rd, Ste. 305

San Diego, CA 92123 Telephone: 858-874-4042

Email:molly.luettgerodt@sdcounty.ca.gov

Project Name:

Calavo Drive Drainage Improvement Project

Project Location:

Latitude: 32°45'4.39"N

Longitude: 116°58'0.15"W

Type of Project:

Drainage Improvement Project

Need for Project:

To alleviate localized flooding up to and including the 100 year runoff event in the immediate vicinity of the drainage facility

Project Description:

The proposed project is to improve the drainage facility along Calavo Drive between Rancho Road and Luisa Drive in the Mount Helix area in San Diego County, by replacement of the existing 60-inch corrugated metal pipe with a 10-foot by 7-foot reinforced concrete box culvert and associated head and wing walls, concrete aprons, cutoff walls, and energy dissipaters at

the inlet and outlet.

Federal

Agency/Permit:

U.S. Army Corps of Engineers §404, NWP 43, Meris Bantilan-

Smith

Other Required

Regulatory Approvals:

California Department of Fish and Game Streambed

Alteration Agreement, Kelly Fisher

California

Environmental Quality

Act (CEQA)
Compliance:

Notice of Determination - Negative Declaration, Calavo Drive

Drainage Improvement Project; FCDT-00255, SCN 2009041147, filed in the Office of the County Clerk, San

Diego County, June 29, 2009.

Receiving Water: Sweetwater Hydrologic Unit, Middle Sweetwater Hydrologic

Area, Jamacha Hydrologic Sub-Area.

Affected Waters of the

Permanent:

United States:

Wetland: 0.002 acres

Non-Wetland Waters: 0.006 acres

Temporary:

Wetland: 0.002 acres

Non-Wetland Waters: 0.007 acres

Related Projects Implemented/to be Implemented by the Applicant(s):

N/A

Compensatory Mitigation:

Mitigation for permanent discharges to 0.002 acres (20 linear feet) of wetlands and 0.006 acres (80 linear feet) of nonwetland waters must be achieved at a 2:1 ratio for a total of 0.016 acres of riparian restoration at County of San Diego's Sweetwater Offsite Mitigation Area (letter dated July 6, 2010, County of San Diego). Temporary discharges to 0.002 acres (20 linear feet) of wetlands and 0.007 acres (100 linear feet) of non-wetland waters by a 1:1 ratio of onsite revegetation

with native plant species.

Mitigation Location:

Longitude: 117° 2' 44.9" W Latitude: 32° 39' 25.7" N

Public Notice:

On March 29, 2010 receipt of the project application was posted on the San Diego Water Board web site to serve as

appropriate notification to the public.

Fees:

Total Due: \$640.00

Total Paid:\$640.00 (check No. 3232163)

CIWQS:

Regulatory Measure ID: 373601

Place ID: 751073 Party ID: 287958

ATTACHMENT 2 DISTRIBUTION LIST

Cc via email:

Meris Bantilan-Smith
U.S. Army Corps of Engineers, Regulatory Branch
Meris.Bantilan-Smith@usace.army.mil

State Water Resources Control Board, Division of Water Quality 401 Water Quality Certification and Wetlands Unit Stateboard401@waterboards.ca.gov

U.S. Environmental Protection Agency, Region 9 Wetlands Regulatory Office R9-WTR8-Mailbox@epa.gov

David Zoutendyk
U.S. Department of the Interior
Fish and Wildlife Service
david zoutendyk@fws.gov



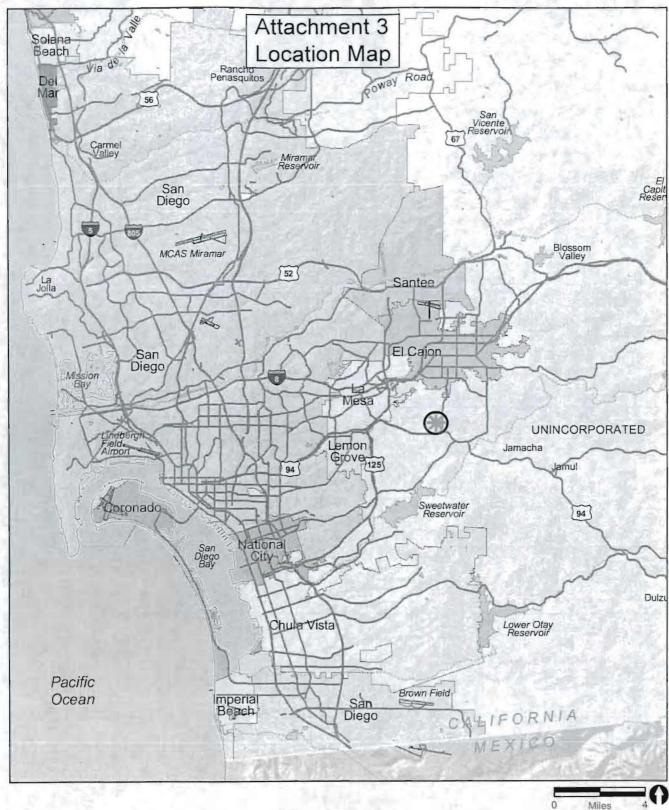


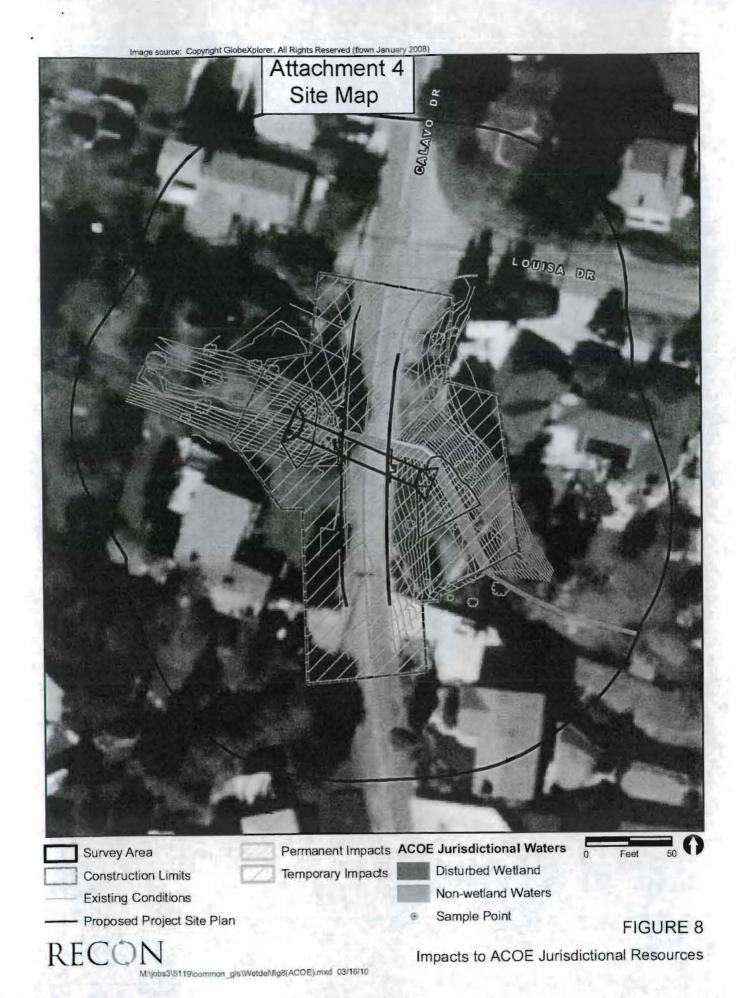


FIGURE 1
Regional Location

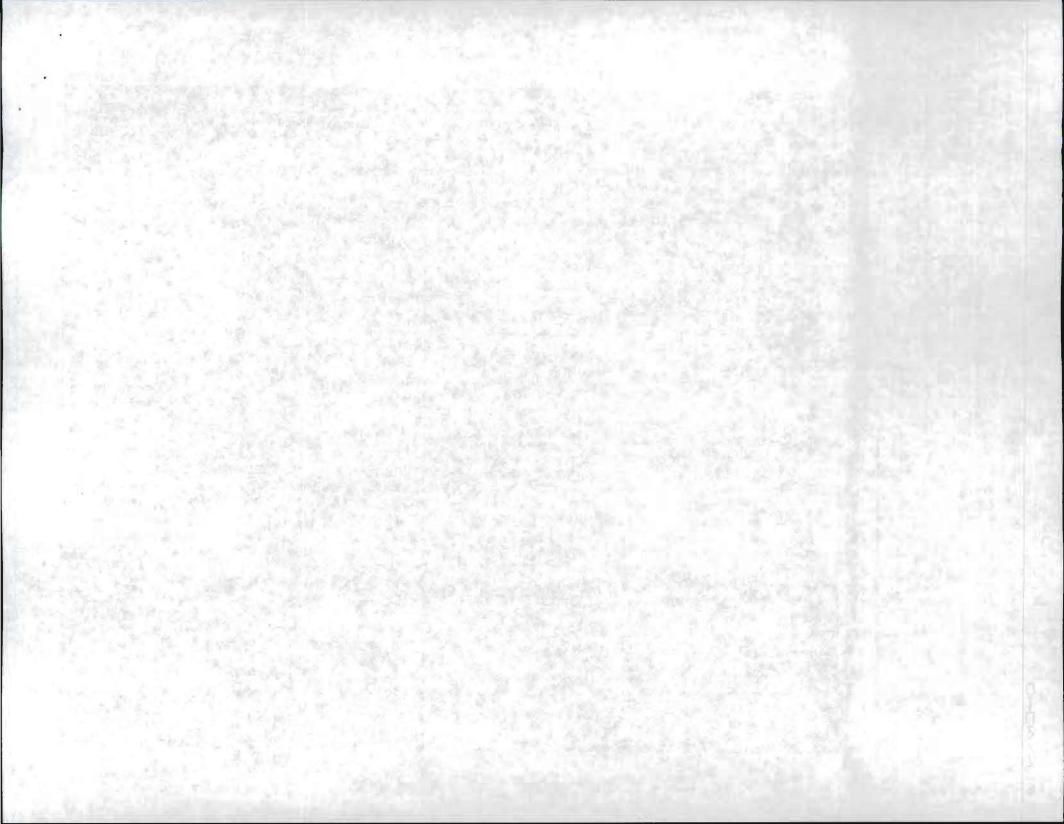


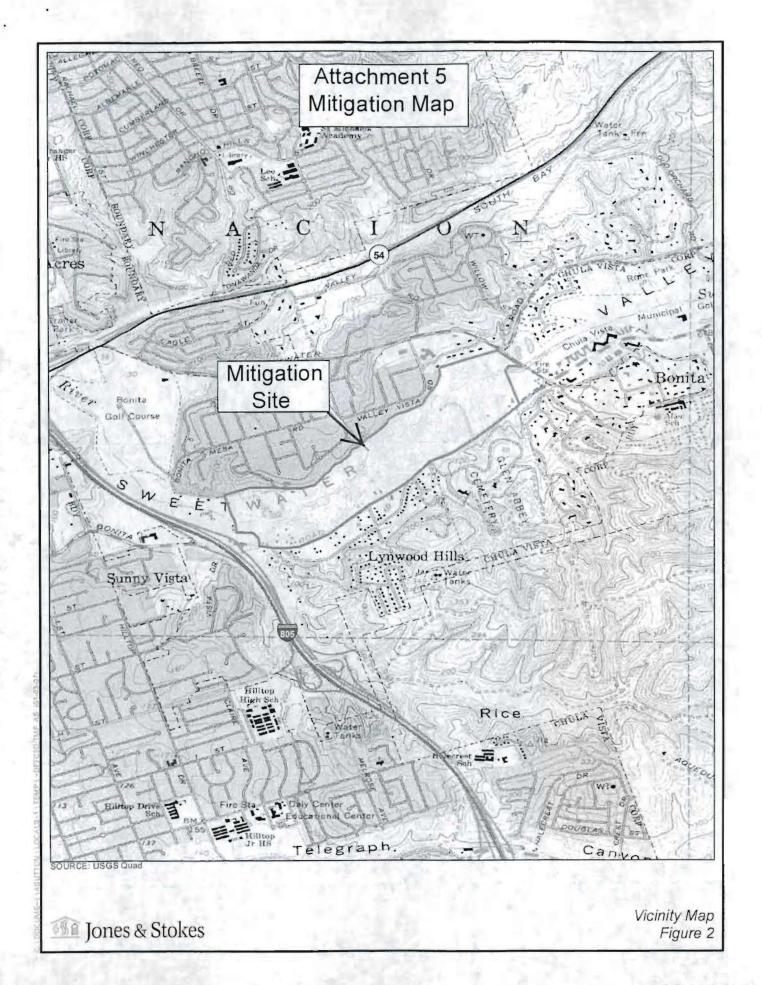


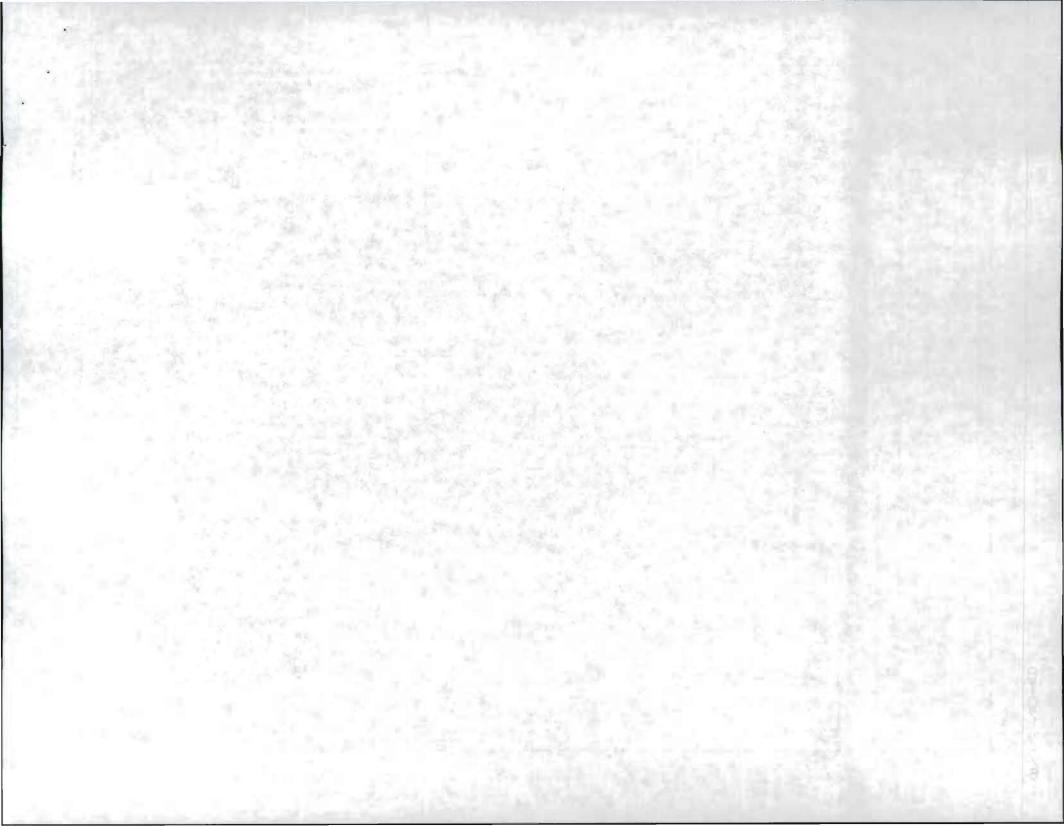




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ATTACHMENT 6 STREAM PHOTO DOCUMENTATION PROCEDURES

Standard Operating Procedure (SOP)

Stream Photo Documentation Procedure (CARCD 2001, Written by TAC Visual Assessments work group)

Introduction:

Photographs provide a qualitative, and potentially semi-quantitative, record of conditions in a watershed or on a water body. Photographs can be used to document general conditions on a reach of a stream during a stream walk, pollution events or other impacts, assess resource conditions over time, or can be used to document temporal progress for restoration efforts or other projects designed to benefit water quality. Photographic technology is available to anyone and it does not require a large degree of training or expensive equipment. Photos can be used in reports, presentations, or uploaded onto a computer website or GIS program. This approach is useful in providing a visual portrait of water resources to those who may never have the opportunity to actually visit a monitoring site.

Equipment:

Use the same camera to the extent possible for each photo throughout the duration of the project. Either 35 mm color or digital color cameras are recommended, accompanied by a telephoto lens. If you must change cameras during the program, replace the original camera with a similar one comparable in terms of media (digital vs. 35 mm) and other characteristics. A complete equipment list is suggested as follows:

Required:

- Camera and backup camera
- Folder with copies of previous photos (do not carry original photos in the field)
- Topographic and/or road map
- Aerial photos if available
- Compass
- Timepiece
- Extra film or digital disk capacity (whichever is applicable)
- Extra batteries for camera (if applicable)
- Photo-log data sheets or, alternatively, a bound notebook dedicated to the project
- Yellow photo sign form and black marker, or, alternatively, a small black board and chalk



Optional:

- GPS unit
- Stadia rod (for scale on landscape shots)
- Ruler (for scale on close up views of streams and vegetation)
- Steel fence posts for dedicating fixed photo points in the absence of available fixed landmarks

How to Access Aerial Photographs:

Aerial Photos can be obtained from the following federal agencies:

USGS Earth Science Information Center 507 National Center 12201 Sunrise Valley Drive Reston, VA 22092 800-USA-MAPS

USDA Consolidated Farm Service Agencies Aerial Photography Field Office 222 West 2300 South P.O. Box 30010 Salt Lake City, UT 84103-0010 801-524-5856

Cartographic and Architectural Branch National Archives and Records Administration 8601 Adelphi Road College park, MD 20740-6001 301-713-7040

Roles and Duties of Team:

The team should be comprised of a minimum of two people, and preferably three people for restoration or other water quality improvement projects, as follows:

- 1. Primary Photographer
- 2. Subject, target for centering the photo and providing scale
- 3. Person responsible for determining geographic position and holding the photo sign forms or blackboard.

One of these people is also responsible for taking field notes to describe and record photos and photo points.

Safety Concerns:

Persons involved in photo monitoring should **ALWAYS** put safety first. For safety reasons, always have at least two 2 volunteers for the survey. Make sure that the area(s) you are surveying either are accessible to the public or that you have obtained permission from the landowner prior to the survey.

Some safety concerns that may be encountered during the survey include, but are not limited to:

- Inclement weather
- Flood conditions, fast flowing water, or very cold water
- Poisonous plants (e.g.: poison oak)
- Dangerous insects and animals (e.g.: bees, rattlesnakes, range animals such as cattle, etc.)
- Harmful or hazardous trash (e.g.: broken glass, hypodermic needles, human feces)

We recommend that the volunteer coordinator or leader discuss the potential hazards with all volunteers prior to any fieldwork.

General Instructions:

From the inception of any photo documentation project until it is completed, always take each photo from the same position (photo point), and at the same bearing and vertical angle at that photo point. Photo point positions should be thoroughly documented, including photographs taken of the photo point. Refer to copies of previous photos when arriving at the photo point. Try to maintain a level (horizontal) camera view unless the terrain is sloped. (If the photo can not be horizontal due to the slope, then record the angle for that photo.) When photo points are first being selected, consider the type of project (meadow or stream restoration, vegetation management for fire control, ambient or event monitoring as part of a stream walk, etc.) and refer to the guidance listed on *Suggestions for Photo Points by Type of Project*.

When taking photographs, try to include landscape features that are unlikely to change over several years (buildings, other structures, and landscape features such as peaks, rock outcrops, large trees, etc.) so that repeat photos will be easy to position. Lighting is, of course, a key ingredient so give consideration to the angle of light, cloud cover, background, shadows, and contrasts. Close view photographs taken from the north (i.e., facing south) will minimize shadows. Medium and long view photos are best shot with the sun at the photographer's back. Some artistic expression is encouraged as some photos may be used on websites and in slide shows (early morning and late evening shots may be useful for this purpose). Seasonal changes can be used to advantage as foliage, stream flow, cloud cover, and site access fluctuate. It is often important to include a ruler, stadia rod, person, farm animal, or automobile in photos to convey the scale of the image. Of particular concern is the angle from which the



photo is taken. Oftentimes an overhead or elevated shot from a bridge, cliff, peak, tree, etc. will be instrumental in conveying the full dimensions of the project. Of most importance overall, however, is being aware of the goal(s) of the project and capturing images that clearly demonstrate progress towards achieving those goal(s). Again, reference to Suggestions for Photo Points by Type of Project may be helpful.

If possible, try to include a black board or yellow photo sign in the view, marked at a minimum with the location, subject, time and date of the photograph. A blank photo sign form is included in this document.

Recording Information:

Use a systematic method of recording information about each project, photo point, and photo. The following information should be entered on the photo-log forms (blank form included in this document) or in a dedicated notebook:

- Project or group name, and contract number (if applicable, e.g., for funded restoration projects)
- General location (stream, beach, city, etc.), and short narrative description of project's habitat type, goals, etc.
- Photographer and other team members
- Photo number
- Date
- Time (for each photograph)
- Photo point information, including:
 - Name or other unique identifier (abbreviated name and/or ID number)
 - Narrative description of location including proximity to and direction from notable landscape features like roads, fence lines, creeks, rock outcrops, large trees, buildings, previous photo points, etc. – sufficient for future photographers who have never visited the project to locate the photo point
 - o Latitude, longitude, and altitude from map or GPS unit
- Magnetic compass bearing from the photo point to the subject
- Specific information about the subject of the photo
- Optional additional information: a true compass bearing (corrected for declination) from photo point to subject, time of sunrise and sunset (check newspaper or almanac), and cloud cover.

For ambient monitoring, the stream and shore walk form should be attached or referenced in the photo-log.

When monitoring the implementation of restoration, fuel reduction, or Best Management Practices (BMP) projects, include or attach to the photo-log a

narrative description of observable progress in achieving the goals of the project. Provide supplementary information along with the photo, such as noticeable changes in habitat, wildlife, and water quality and quantity.

Archive all photos, along with the associated photo-log information, in a protected environment.

The Photo Point: Establishing Position of Photographer:

- 1. Have available a variety of methods for establishing position: maps, aerial photos, GPS, permanent markers and landmarks, etc. If the primary method fails (e.g., a GPS or lost marker post) then have an alternate method (map, aerial photo, copy of an original photograph of the photo-point, etc).
- 2. Select an existing structure or landmark (mailbox, telephone pole, benchmark, large rock, etc.), identify its latitude and longitude, and choose (and record for future use) the permanent position of the photographer relative to that landmark. Alternatively, choose the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the photographer.
- 3. For restoration, fuel reduction, and BMP projects, photograph the photopoints and carry copies of those photographs on subsequent field visits.

Determining the Compass Bearing:

- 1. Select and record the permanent magnetic bearing of the photo center view. You can also record the true compass bearing (corrected for declination) but do not substitute this for the magnetic bearing. Include a prominent landmark in a set position within the view. If possible, have an assistant stand at a fixed distance from both the photographer and the center of the view, holding a stadia rod if available, within the view of the camera; preferably position the stadia rod on one established, consistent side of the view for each photo (right or left side).
- 2. Alternatively, use the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the focal point (photo center).
- 3. When performing ambient or event photo monitoring, and when a compass is not available, then refer to a map and record the approximate bearing as north, south, east or west.



Suggestions for Photo Points by Type of Project:

Ambient or Event Monitoring, Including Photography Associated with Narrative Visual Assessments:

- 1. When first beginning an ambient monitoring program take representative long and/or medium view photos of stream reaches and segments of shoreline being monitored. Show the positions of these photos on a map, preferably on the stream/shore walk form. Subjects to be photographed include a representative view of the stream or shore condition at the beginning and ending positions of the segment being monitored, storm drain outfalls, confluence of tributaries, structures (e.g., bridges, dams, pipelines, etc.).
- 2. If possible, take a close view photograph of the substrate (streambed), algae, or submerged aquatic vegetation.
- 3. Time series: Photographs of these subjects at the same photo points should be repeated annually during the same season or month if possible.
- 4. Event monitoring refers to any unusual or sporadic conditions encountered during a stream or shore walk, such as trash dumps, turbidity events, oil spills, etc. Photograph and record information on your photo-log and on your Stream and Shore Walk Visual Assessment form. Report pollution events to the Regional Board. Report trash dumps to local authorities.

All Restoration and Fuel Reduction Projects - Time Series:

Take photos immediately before and after construction, planting, or vegetation removal. Long term monitoring should allow for at least annual photography for a minimum of three years after the project, and thereafter at 5 years and ten years.

Meadow Restoration:

- 1. Aerial view (satellite or airplane photography) if available.
- In the absence of an aerial view, a landscape, long view showing an overlapping sequence of photos illustrating a long reach of stream and meadow (satellite photos, or hill close by, fly-over, etc.)
- 3. Long view up or down the longitudinal dimension of the creek showing riparian vegetation growth bounded on each side by grasses, sedges, or whatever that is lower in height

 Long view of conversion of sage and other upland species back to meadow vegetation

- 5. Long view and medium view of streambed changes (straightened back to meandering, sediment back to gravel, etc.)
- Medium and close views of structures, plantings, etc. intended to induce these changes

Stream Restoration/stabilization:

- 1. Aerial view (satellite or airplane photography) if available.
- 2. In the absence of an aerial view, a landscape, long-view showing all or representative sections of the project (bluff, bridge, etc.)
- 3. Long view up or down the stream (from stream level) showing changes in the stream bank, vegetation, etc.
- Long view and medium view of streambed changes (thalweg, gravel, meanders, etc.)
- 5. Medium and close views of structures, plantings, etc. intended to induce these changes.
- 6. Optional: Use a tape set perpendicular across the stream channel at fixed points and include this tape in your photos described in 3 and 4 above. For specific procedures refer to Harrelson, Cheryl C., C.L. Rawlins, and John P. Potyondy, Stream Channel Reference Sites: An Illustrated Guide to Field Techniques, United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-245.

Vegetation Management for Fire Prevention ("fuel reduction"):

- 1. Aerial view (satellite or airplane photography) if available.
- 2. In the absence of an aerial view, a landscape, long view showing all or representative sections of the project (bluff, bridge, etc.)
- Long view (wide angle if possible) showing the project area or areas.
 Preferably these long views should be from an elevated vantage point.

- 4. Medium view photos showing examples of vegetation changes, and plantings if included in the project. It is recommended that a person (preferably holding a stadia rod) be included in the view for scale
- 5. To the extent possible include medium and long view photos that include adjacent stream channels.

Stream Sediment Load or Erosion Monitoring:

- 1. Long views from bridge or other elevated position.
- 2. Medium views of bars and banks, with a person (preferably holding a stadia rod) in view for scale.
- Close views of streambed with ruler or other common object in the view for scale.
- 4. Time series: Photograph during the dry season (low flow) once per year or after a significant flood event when streambed is visible. The flood events may be episodic in the south and seasonal in the north.
- 5. Optional: Use a tape set perpendicular across the stream channel at fixed points and include this tape in your photos described in 1 and 2 above. For specific procedures refer to Harrelson, Cheryl C., C.L. Rawlins, and John P. Potyondy, Stream Channel Reference Sites: An Illustrated Guide to Field Techniques, United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-245.

PHOTO-LOG FORM

Project: Location: Date:

Photographer: Team members:

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General Notes or Comments (weather, cloud cover, time of sunrise and sunset, other pertinent information):

PHOTO SIGN FORM: Print this fo	orm on yellow paper.	Complete the following
information for each photograph.	Include in the photog	graphic view so that it will
be legible in the finished photo.		

Location:

Subject Description:

Date:

Time: