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Filed: June 23, 2008
49th Day: August 11, 2008
Staff: Melissa B. Kraemer
Staff Report: June 27, 2008
Hearing Date: July 11, 2004
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-08-017**

APPLICANT: **Wiyot Tribe, Attn: Jon Mooney**

PROJECT LOCATION: On the northeastern end of Indian Island in Humboldt Bay, City of Eureka, Humboldt County (APNs 405-011-02 & -10)

PROJECT DESCRIPTION: Phase I of the Tuluwat Restoration Project, which involves (1) placing a temporary causeway within the bay mudflats to transfer construction materials from barges to the island during lower tides; (2) repairing the existing bulkhead; (3) removing debris and demolishing various dilapidated structures on the island; (4) excavating approximately 17 cubic yards of PCP-contaminated midden soils; (5) installing a protective soil and geotextile cover across the majority of the upland portion of the 1.5-acre parcel; and (6) installing a shoreline revetment structure (as a footing to the proposed protective soil/geotextile cap) consisting of ~130 lineal feet of carbon reinforced fiberglass sheet piling.

LOCAL APPROVALS RECEIVED: City of Eureka Conditional Use Permit No. C-04-011

OTHER APPROVALS REQUIRED:

(1) U.S. Army Corps of Engineers Permit Clean Water Act Section 404 Permit (pending)

(2) North Coast Regional Water Quality Control Board CWA Section 401 Water Quality Certification (pending)

(3) Humboldt Bay Harbor, Recreation, & Conservation District permit (pending)

(4) City of Eureka Grading Permit (pending)

(5) City of Eureka Demolition Permit (pending)

SUBSTANTIVE FILE DOCUMENTS:

(1) Tuluwat Restoration Project Environmental Impact Reports (Draft EIR dated May 2007; Final EIR dated August 2007), SCH #2004122022

(2) CDP No. 1-03-024

(3) CDP No. 1-98-103

(4) City of Eureka Local Coastal Program

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission approve with conditions the coastal development permit application.

The Wiyot Tribe proposes to implement Phase I of the Tuluwat Restoration Project on the northeastern end of Indian Island in Humboldt Bay. Indian Island lies within the ancestral lands of the Wiyot people and is considered to be a sacred place. Virtually all of the island except for those portions of the island already developed with roads, parking areas, and structures is considered to be part of an environmentally sensitive habitat area (ESHA). The project area was the site of the former Wiyot village of Tuluwat. Representing over 1,000 years of continuous human occupation, the village was built on a portion of a roughly 4.5-acre shell midden formed from the shallow lands of the island by the accumulation of discarded marine shell debris. Over time, storm surge and boat wake waves on the bay in combination with other activities on the island (i.e., construction of drainage ditching, tide gates, and diking, cattle grazing, demolition) have caused the eastern edge of the village site to erode back approximately 100 feet over the last century, allowing approximately 2,000 cubic yards of the shell mound materials to be swept away into the bay waters. As a result of this erosion, interred cultural artifacts and gravesites have become exposed at the bay margin. In 2004 the Commission approved Coastal Development Permit No. 1-03-024 which authorized the installation of a 20-25-foot-wide band of revetment materials along a 400-foot segment of the island's northeastern shoreline for the purpose of stabilizing the eroded banks of the island and to prevent further coastal erosion.

The project area's recent history includes over a century of industrial use during a time when there were no mandated environmental protections from hazardous materials. The 1.5-acre parcel includes the site of the former ship repair yard and dry dock. It is known that the shipworkers used various hazardous materials for maintenance and repair operations, including lead paint, creosote, acetone, petroleum-based wood preservatives, and other solvents and metals. An EPA-funded Targeted Brownfields Site Assessment of the property between 2001 and 2005 identified areas of concern on the property in soils and groundwater with levels of contamination that exceed federal benchmarks for total petroleum hydrocarbon as oil (TPH-o), Polynuclear Aromatic Hydrocarbons (PAHs), metals (arsenic, lead, aluminum, copper, iron, and various others), pentachlorophenol (PCP), dioxins, and other materials.

The proposed project involves implementing an interim site cleanup plan, developed in consultation with the U.S. EPA and the North Coast Regional Water Quality Control Board, with the primary objective of removing contaminants that continue to threaten groundwater and coastal waters while taking into consideration cultural constraints (i.e., any contaminated soils excavated and removed from the site would be comprised of archaeologically sensitive midden material). Specific project components involve the following: (1) placing a temporary causeway within the bay mudflats to transfer construction materials from barges to the island during lower tides; (2) repairing the existing bulkhead; (3) removing debris and demolishing various dilapidated structures on the island; (4) excavating approximately 17 cubic yards of PCP-contaminated midden soils; (5) installing a protective soil and geotextile cover across the majority of the upland portion of the 1.5-acre parcel; and (6) installing a shoreline revetment structure (as a footing to the proposed protective soil/geotextile cap) consisting of ~130 lineal feet of carbon reinforced fiberglass sheet piling.

If the most contaminated portion of the site is not cleaned up, and if the shoreline revetment and bulkhead repair are not implemented, contaminated soils will continue to erode into bay waters. The proposed revetment will serve not only to protect the shoreline and midden materials from erosion, but also to sequester residual contaminated sediments on site (rather than allowing them to leach out into bay waters) until a final site cleanup plan can be developed and implemented. As a result, the quality of groundwater in the vicinity of the site and the wetlands and coastal waters that the groundwater comes in contact with will be improved, maintained, and at least partially restored, thereby maintaining and restoring biological productivity and protecting marine resources and water quality consistent with Coastal Act Sections 30230 and 30231.

Although the project offers overall water quality benefits, the project does involve the placement of fill in approximately 7,850 square feet of wetlands, and the proposed fill is not for any of the allowable uses for dredging, diking, and filling of coastal waters and wetlands pursuant to Section 30233(a) of the Coastal Act. Approximately ~5,530 square feet of wetland area would be filled to repair the existing bulkhead and install protective cover/revetment materials in accordance with the interim site cleanup plan;

approximately 130 lineal feet of new sheet piling would be installed within wetlands between the existing revetment and the bulkhead area; approximately 390 square feet of wetlands would be filled by placing rock slope protection on the outside (bay side) of the new revetment; and a temporary causeway necessary for construction access would be placed within approximately 1,930 square feet of intertidal wetlands.

Staff has considered various project alternatives (including the "no project" alternative), none of which are feasible less environmentally damaging alternatives than the proposed project. Therefore, staff believes the proposed project presents a true conflict between Sections 30233 and Sections 30230 and 30231 of the Coastal Act, and it is appropriate for the Commission to invoke the conflict resolution policies of Section 30007.5 of the Coastal Act. This section states that when the Commission identifies a conflict among the policies in Chapter 3, such conflicts are to be resolved in a manner which on balance is the most protective of significant coastal resources. Staff believes that the impacts on coastal resources from not constructing the project would be more significant than the project's wetland impacts and would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act to maintain and restore coastal water quality and marine resources. Denying the project because of its inconsistency with Section 30233 would avoid a net increase of wetland fill of approximately 7,850 square feet. On the other hand, implementing the project would remove 17 cubic yards of PCP/dioxin contaminated soils that continue to be a source of bay contamination. In staff's opinion, the improvements to water quality from implementing the project would be more protective of coastal resources than the impacts on wetland habitat from the proposed fill.

To ensure that the water quality benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, staff recommends, among others, Special Condition Nos. 1, 3, 4, 5, and 6. These conditions require that the applicant submit various final plans, prior to permit issuance for the review and approval of the Executive Director, including a final Interim Site Cleanup Plan, a final NPS/SWPPP, a final Spill Prevention, Control, and Countermeasure Plan, a debris disposal plan, and a final revegetation plan for the site. Additionally, Special Condition No. 2 requires that the applicant carry out the project in accordance with various construction protocols to ensure the protection of coastal waters and wetlands. Staff believes that without Special Condition Nos. 1 through 6, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

Therefore, staff believes that as conditioned, the proposed development is consistent with all applicable Chapter 3 policies of the Coastal Act.

In addition to acting on the permit itself, the Commission will need to act on a request by the applicant that the Commission waive the eight thousand dollars ($8,000.00) application fee for the permit amendment request. Staff recommends that the Commission reduce the fee to two thousand dollars ($2,000.00), which is what the filing fee was at the time that the applicant applied for the public grant funds that are supporting the proposed project. Subsequent to the applicant's application for grant funding, the

Commission adopted its new fee schedule. Staff believes it is appropriate to reduce the fee in this case because (a) the proposed project is necessary to prevent the ongoing degradation of the public resources of Humboldt Bay by removing contaminated sediments and sequestering residual contaminants, (b) the proposed project is funded entirely by public agency grant funds, and (c) when applying for the subject grant funds the applicant did not anticipate the significant increase to the Commission's application fee schedule.

The Motions to adopt the Staff Recommendation are found on Pages 5-6.

STAFF NOTES

1. Jurisdiction and Standard of Review

The proposed project site has not been put into federal trust or granted sovereign land status and is subject to the Coastal Act's coastal development permit requirements. In addition, the proposed project site is located in the Commission's retained permit jurisdiction. The City of Eureka has a certified LCP, but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

I. MOTION, STAFF RECOMMENDATION, & RESOLUTION

A. MOTION, STAFF RECOMMENDATION, & RESOLUTION FOR APPROVAL OF COASTAL DEVELOPMENT PERMIT NO. 1-08-017 AS CONDITIONED

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-08-017 pursuant to the staff recommendation.

Staff Recommendation of Approval:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution to Approve Permit:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either: (1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment; or (2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

B. MOTION, STAFF RECOMMENDATION, & RESOLUTION FOR WAIVER OF APLICATION FEE

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission direct the Executive Director to reduce the permit application fee for Coastal Development Permit No. 1-08-017 pursuant to the staff recommendation.

Staff Recommendation of Approval:

Staff recommends a **YES** vote. Approval of this motion will result in the permit application fee being reduced to two thousand dollars ($2,000.00). The motion passes only by affirmative vote of a majority of the Commissioners present.

Resolution to Approve a Fee Waiver Request

The Commission hereby directs permit application fee for Coastal Development Permit No. 1-08-017 to be reduced to two thousand dollars ($2,000.00).

II. STANDARD CONDITIONS: See Appendix A.

III. SPECIAL CONDITIONS:

1. Final Version of the Interim Site Clean-up Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director a

final version of the Interim Site Clean-up Plan that substantially conforms to the plan prepared by SHN Consulting Engineers & Geologists, Inc., dated March 2006.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

2. Construction Responsibilities

The permittee shall comply with the following construction-related requirements:

A. All construction materials and debris originating from the project shall be stored and/or contained in a manner to preclude their uncontrolled entry and dispersion to the waters of Humboldt Bay. Any debris resulting from construction activities that should inadvertently enter the bay shall be removed from the bay waters immediately;

B. Any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion and in accordance with the construction debris removal and disposal plan required by Special Condition No. 5;

C. Silt screens, straw bales, coir-rolls, coffer damming, and/or water bladder walls appropriate for use in estuary and intertidal setting applications shall be installed at the toe of the slope and around the perimeter of the area to be graded prior to the initiation of the grading activities and shall be maintained throughout project construction. Additional siltation barrier materials shall be kept at the site and deployed as needed to reinforce sediment containment structures should unseasonable rainfall occur;

D. Any fueling of construction equipment shall occur on the paved areas within the adjoining former boat yard structures on the site at a minimum of 100 feet from the Mean High High Water line of the bay;

E. Fuels, lubricants, and solvents shall not be allowed to enter the waters of Humboldt Bay. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up. All heavy equipment operating in or near the water's edge shall utilize vegetable oil as hydraulic fluid. All spill prevention, containment, and countermeasures shall be consistent with the requirements of Special Condition No. 4;

F. A minimum 20-foot-wide buffer around the eelgrass beds offshore of the project site shall be marked by a qualified biologist and maintained during construction; and

G. Revetment materials shall only be installed during lower stages of the tide.

3. Final Non-point Source/Storm Water Pollution Prevention Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director a final Non-point Source/Storm Water Pollution Prevention Plan that substantially conforms to the plan prepared by SHN Consulting Engineers & Geologists, Inc., dated June 2008 (Exhibit No. 12).

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

4. Final Spill Prevention, Containment, and Countermeasure Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director a final Spill Prevention, Containment, and Countermeasure Plan that substantially conforms to the plan prepared by SHN Consulting Engineers & Geologists, Inc., dated June 2008 (Exhibit No. 13), except that the final plan shall list the California Coastal Commission as an agency to be notified in the event that a spill enters Humboldt Bay or threatens to impact coastal waters.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

5. Final Debris Disposal Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director a final plan for the disposal of construction-related debris and excavated materials.

(1) The debris disposal plan shall demonstrate that:

(a) All stockpiling and disposal sites are in upland areas where construction-related debris from the project may be lawfully disposed;

(b) PCP-contaminated soil excavated from the way runner area and way runner wood debris shall not be stockpiled on site prior to disposal;

(c) Any and all debris resulting from construction activities shall be removed within 10 days following completion of construction; and

(d) The plan shall be consistent with the requirements of Special Condition No. 2 and all other terms and conditions of Coastal Development Permit No. 1-08-017.

(2) The plan shall include, at a minimum, the following components:

(a) A description of the manner by which the material will be removed from the construction site and identification of all debris disposal sites that will be utilized for both the disposal of non-regulated solid waste (composed of construction debris and trash that will be removed from the bulkhead area and other areas of the site) and regulated solid waste (composed of soil excavated from the PCP-impacted areas of the site); and

(b) A schedule for removal of all debris.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

6. <u>Final Revegetation Plan</u>

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit, for the review and approval of the Executive Director, a final revegetation plan for the entire area disturbed by grading activity and covered with the protective soil/geotextile cover (as shown on Exhibit No. 4). The plan shall be prepared by a qualified professional(s) and shall adhere to the following specifications:

(1) The plan shall demonstrate all of the following:

(a) The entire disturbed area shall be replanted with regionally appropriate native vegetation. The vegetation to be replanted shall be of local genetic stock, if available. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by

the State of California, shall be installed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;

(b) Revegetation shall achieve a standard for success of at least 80 percent survival of plantings or at least 80 percent ground cover for broadcast seeding after a period of 3 years;

(c) Rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone or Diphacinone, shall not be used;

(2) The plan shall include, at a minimum, the following components:

(a) Specified goals of the plan and performance criteria for evaluating the success of the revegetation goals;

(b) A site plan accompanied by a plant list, which together show the approximate type, size, number, source, and location of all plant materials that will be retained or installed on the disturbed area;

(c) Photo-points shall be used to monitor the success of the revegetation efforts. Photo-points shall be mapped on the site plan;

(d) A maintenance plan (e.g., weeding, replacement planting) and monitoring plan to ensure that the specified goals and performance criteria have been satisfied. The revegetation area shall be monitored annually for a minimum of five years following completion of the project;

(e) Provisions for the submittal of annual monitoring reports to Commission staff. Monitoring reports shall be submitted annually by November 1 of each year of the monitoring period; and

(f) Provisions for remedial actions if the final monitoring report indicates that site revegetation has been unsuccessful, in part or in whole. If remedial actions are found to be necessary, the applicant shall submit for the review and approval of the Executive Director a revised revegetation plan to implement the remedial actions to achieve the specified performance standards. The revised plan shall require an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

7. <u>Annual Inspections and Submittal of Annual Inspection Reports</u>

The permittee shall inspect on a quarterly basis, for a minimum period of 5 years, the area where the protective soil/geotextile cover is to be placed to monitor the effectiveness and condition of the cover and to document and remove any nonnative and/or invasive species that are identified. The permittee shall submit annual inspection reports reviewing cover effectiveness and providing recommendations for future remediation and/or abatement if necessary. Annual inspection reports shall include photographs of the site from permanent photo-points (shown on a site plan map) to monitor site changes over time. Annual inspection reports shall be submitted to the Executive Director by November 1 of each year throughout the monitoring period.

8. Notification of Work and Coastal Commission Staff Inspections

AT LEAST ONE WEEK PRIOR TO PERFORMING ANY SITE CLEANUP ACTIVITIES, the permittee shall submit written notice to the Eureka office of the California Coastal Commission of the specific dates when the site cleanup work will be performed and shall offer appropriate access to Commission staff for observing field work during those activities for purposes of determining compliance with Coastal Development Permit No. 1-08-017.

9. Submittal of Water Quality Sampling Results

The permittee shall provide results of confirmation sampling to the Executive Director for review and comment before project completion. Additionally, the permittee shall provide copies of all future site investigations (e.g., soil and groundwater monitoring), design, and implementation documents to the Executive Director for review in a timely manner.

10. Protection of Sensitive Species Nesting & Roosting Sites

A. **PRIOR TO COMMENCEMENT OF CONSTRUCTION**, the permittee shall submit a plan for the protection of sensitive nesting and roosting sites for the review and approval of the Executive Director, which addresses sensitive bird nesting habitat and sensitive bat roosting habitat in the project area.

(1) The plan shall demonstrate that:

(a) The buildings proposed for demolition and the vegetation proposed for clearing have been surveyed by a qualified biologist in consultation with the California Department of Fish and Game for the presence of active nesting habitat of Black-capped chickadee and active roosting habitat of Townsend's big-eared bat; and

(b) Any sensitive species habitat located in areas of potential impact shall be avoided, and any of the structures proposed for demolition that are

found to contain sensitive species habitat shall not be removed unless the permittee obtains and amendment to the coastal development permit, which authorizes removal of the structure(s) in a manner consistent with Section 30240 of the Coastal Act.

(2) The plan shall include at a minimum the following components:

(a) Seasonally appropriate surveys conducted by a qualified biologist for active nesting and/or roosting sites for Townsend's big-eared bat, Black-capped chickadee, and other sensitive species with the potential for occurrence in the project area;

(b) A map that locates any sensitive habitat identified by the survey;

(c) A narrative that describes avoidance measures proposed; and

(d) A revised site plan that shows how the project has been redesigned to avoid any sensitive habitat identified by the survey.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

11. <u>Final Eelgrass Protection Plan</u>

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director a final plan for the protection of eelgrass beds in the project vicinity (as shown on the 2008 eelgrass survey map, Exhibit No. 8) that substantially conforms with the eelgrass protection measures proposed in Exhibit Nos. 4 and 5.

(1) The eelgrass protection plan shall demonstrate that:

(a) The temporary causeway corridor shall be located such that all eelgrass beds are completely avoided and shall conform to the temporary causeway location identified on Exhibit Nos. 4 and 5;

(b) The temporary causeway shall be constructed using mud mats or other materials that will not cause significant compaction of intertidal mudflats;

(c) All eelgrass in the project area as shown on the 2008 eelgrass survey map (Exhibit No. 8) shall be delineated with floating buoys prior to commencement of construction, and equipment shall operate outside of the delineated eelgrass beds at all times;

(d) Barges used for project construction shall not moor landward of within 20 feet of the eelgrass delineated pursuant to subsection (c) above;

(e) Grounding and direct contact of the barge with eelgrass beds shall be avoided at all times;

(f) No propellers, anchors, construction equipment, or piles shall be dragged over the mudflats or eelgrass beds;

(g) The permittee shall perform a post-construction eelgrass survey in the same month as the 2008 pre-construction eelgrass survey during the next growing season immediately following the completion of construction;

(h) Adverse impacts to eelgrass shall be measured as the difference between the pre-construction and post-construction estimates of eelgrass cover and density. The extent of vegetated cover is defined as that area where eelgrass is present and where gaps in coverage are less than one meter between individual turion clusters. Density is defined as the average number of turions per unit area; and

(i) If post-construction survey results indicate that eelgrass densities are less than 85% of pre-construction survey results, or if there is a loss of extent of vegetated cover, then the applicant shall submit a request to amend the coastal development permit proposing mitigation for impacts to eelgrass at a minimum 3-to-1 ratio.

(2) The plan shall include, at a minimum, the following components:

(a) A detailed site map depicting the location of temporary causeways in relation to existing eelgrass;

(b) Provisions for the installation of floating buoys to delineate the temporary causeway corridor, identified eelgrass beds, and the barge restricted area;

(c) A description of the causeway materials proposed for use and the proposed methodology for causeway installation;

(d) A schedule for the installation and removal of the temporary causeway and floating buoys;

(e) Provisions for the submittal of a post-construction eelgrass survey; and

(f) Provisions for submittal of a permit amendment request proposing an Eelgrass Mitigation Plan in the event that the post-construction eelgrass survey indicates that the project had adverse impacts to eelgrass.

B. The permittee shall undertake development in accordance with the approved plan. Any proposed changes to the approved plan shall be reported to the Executive Director. No changes to the approved plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

12. Sheet Pile Material and Design Plans and Cross-Sections

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit for the review and approval of the Executive Director plans, including cross-section plans, for the installation of the approximately 130 feet of new sheet piling and associated rock slope protection.

(1) The sheet piling plans shall demonstrate that:

(a) New sheet piling material shall match the existing sheet pile materials installed on site as approved under CDP No. 1-03-024 or shall otherwise blend with the island bank materials and with the character of the surrounding estuary;

(b) New sheet piling shall not be significantly greater in height than the existing sheet pile materials installed on site as approved under CDP No. 1-03-024; and

(c) To minimize glare, new sheet piling shall no be constructed of reflective material.

(2) The plans shall include, at a minimum, the following components:

(a) Detailed design drawings and cross sections for the new sheet pilings;

(b) A schedule for the installation of the new sheet piling.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

13. Assumption of Risk, Waiver of Liability and Indemnity Agreement

By acceptance of this permit, the applicant, on behalf of (1) itself; (2) its successors and assigns and (3) any other holder of the possessory interest in the development authorized by this permit, acknowledges and agrees (i) the installation of the protective soil/geotextile cap and associated shoreline revetment footing may subject the project area to hazards from outflanking, wave uprush, flooding, and other geologic hazards; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in

defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; and (v) to agree to include a provision in any assignment of the development authorized by this permit requiring the sublessee or assignee to submit a written agreement to the Commission, for the review and approval of the Executive Director, incorporating all of the foregoing restrictions identified in (i) through (iv).

14. Archaeological Resources Mitigation Measures

A. The permittee shall undertake development in accordance with the stipulations, measures, and protocols described in detail in the following documents:

Memorandum of Agreement among the U.S. Army Corps of Engineers, the Wiyot Tribe, and the California State Historic Preservation Officer Regarding the Tuluwat Restoration Project at CA-HUM-67 (Tuluwat) on Indian Island in Humboldt County, California;

and

Mitigations 3.1.1a, 3.1.1b, 3.1.1c, and 3.1.1d in the Statement of Mitigation Monitoring and Reporting Programs, Tuluwat Restoration Project, State Clearinghouse Number 2004122022, April 14, 2008 (prepared by the City of Eureka; attached as Exhibit No. 9).

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

15. U.S. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF ANY DEVELOPMENT, the permittee shall provide to the Executive Director a copy of a permit issued by the Army Corps of Engineers, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the Corps. Such changes shall not be incorporated into the project until the applicant obtains an amendment to Coastal Development Permit No. 1-08-017, unless the Executive Director determines that no amendment is legally required.

16. North Coast Regional Water Quality Control Board Approval

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall provide to the Executive Director a copy of a permit issued by the North Coast Regional Water Quality Control Board, or evidence that no permit is required. The applicant shall inform the Executive Director of any changes to the

project required by the Department. Such changes shall not be incorporated into the project until the applicant obtains an amendment to Coastal Development Permit No. 1-08-017, unless the Executive Director determines that no amendment is legally required.

17. Humboldt Bay Harbor, Recreation, and Conservation District Approval

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall provide to the Executive Director a copy of a permit issued by the Humboldt Bay Harbor, Recreation, and Conservation District, or evidence that no permit is required. The applicant shall inform the Executive Director of any changes to the project required by the Department. Such changes shall not be incorporated into the project until the applicant obtains an amendment to Coastal Development Permit No. 1-08-017, unless the Executive Director determines that no amendment is legally required.

18. Submittal of Application Filing Fee

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit the entire application fee applicable to the project pursuant to the resolution adopted by the Commission.

IV. FINDINGS & DECLARATIONS

A. Site History

Indian Island lies within the ancestral lands of the Wiyot people and represents a focal point for the tribe's cultural rehabilitative efforts. Indian Island is considered to be the center of the Wiyot world and as such, a sacred place. Each year, the Tuluwat Village on the northern end of the island hosted a World Renewal Ceremony to ask the creator's blessings for all people and the land for the coming year with tribal members gathering from the other Wiyot villages that lined Humboldt Bay. The revival dance gathering would typically last eight to ten days in duration.

On the morning of February 26, 1860, in a series of raids conducted simultaneously on three villages in the Eel River/Humboldt Bay area, a group approximately 80 to 100 sleeping Wiyot men, women, and children, exhausted from a week of ceremonial dance on the island, were caught unaware and brutally slain by a group of white settlers armed with hatchets, clubs, and knives who had paddled across the bay from Eureka. Altogether, the death toll from the massacre at the three villages is estimated at approximately 200.

Following the massacres, U.S. troops collected the surviving Wiyot people from the villages between the Mad and Eel Rivers, initially placing them in protective custody at

Fort Humboldt near the community of Bucksport, now southwestern Eureka. The survivors were later removed to the Klamath River Reservation. After a disastrous flood on the Klamath River, the reservation internees were taken in turn to the Smith River Reservation at Fort Dick in present-day Del Norte County and later confined at the more inland Hoopa and Round Valley Reservations.

In the wake of the Wiyot diaspora from the Humboldt Bay area, Indian Island was acquired and occupied by white settlers. Upon obtaining the island in 1860, Robert Gunther and other settlers constructed a series of dikes and drainage channels in the hope of reclaiming the island for cattle ranching and upland agriculture. These modifications changed the tidal action along the shore, accelerating erosion at the bay edge of the shellmound. Around 1870 a shipyard repair facility was built on the property now owned by the Tribe. The shipyard operated sporadically until the early 1990s when it was abandoned, leaving the site contaminated by creosote, solvents, and other chemicals used in ship repair and maintenance. Dilapidated buildings and tons of scattered metal and wood debris still litter the area. Remnants of the dikes and drains that crisscross the island continue to allow bay waters to inundate portions of the island that would normally lie above the tidal range, degrading the brackish habitat therein. Falling into disuse and subsequently deserted, much of the island reverted to Federal or City ownership. Currently there are only eight privately-owned parcels on the southeast side of the island over one-half mile from the project site across State Route 255.

Between 1913 and 1985, an estimated 2,000 cubic yards of the shell mound were lost to erosion at the bay edge with the midden edge undergoing approximately 100 feet of retreat. In addition, the shellmound was the site of uncontrolled scavenging and pilfering-related excavation in the early part of the 20th century. One amateur archaeologist was said to have looted as many as 500 gravesites. For the most part, structures of the Tuluwat village that were still visible in 1913 are now gone, having been destroyed or carried away by wind and waves.

Although decimated in numbers, exiled to distant lands, and incarcerated against their will, the displaced original inhabitants of the Wiyot villages along Humboldt Bay and their descendants never lost hope of a return to their homeland and rebuilding their broken culture. In 1908, a local church group donated 20 acres of land in the Table Bluff area approximately 17 miles south of Eureka for tribal members to return to live. In 1981, the Wiyot Tribe became a federally-recognized tribe with the rancheria holdings granted sovereign land status and expanded by acquisition of adjoining lands to the 88 acres that comprise the current Table Bluff Reservation.

In 1964, the Tuluwat village site was designated a National Historic Landmark by the U.S. Department of the Interior and identified as “Gunther Island Site 67.” In the early 1990’s, Wiyot tribal members began a renewed effort to resurrect their lost heritage and repatriate Indian Island. In 1992, a public candlelight vigil was held on the anniversary of the 1860 massacre, later becoming an annual community event. This remembrance served as a catalyst for fund-raising efforts by the Tribe to reacquire the island. In March

2000, the Tribe initially purchased the 1½-acre parcel where the shipyard had been constructed. On May 20, 2004, the City of Eureka ceded title to an additional 40 contiguous acres to the Wiyot Tribe. Efforts are ongoing to acquire additional portions of the island, restore the Tuluwat village, reinstate the World Revival Ceremony, and conduct linguistic, native craft, and natural history guided interpretation events at the site.

The proposed project site has not been put into federal trust or granted sovereign status. Although the Tribe has acquired a fee or easement interest in parts of the island, the proposed project will be undertaken on non-federal trust lands owned by the Tribe in fee over which the state retains a public trust easement.

B. Site Description

Comprised primarily of supra-tidal salt marsh with elevations ranging from 0 to +14′ NGVD29, the 270-acre Indian Island is the largest of a cluster of islands situated at the northern end of the roughly 1½-mile-wide strait between the northern and southern lobes of Humboldt Bay in Humboldt County (see Exhibit Nos. 1-3). The island lies approximately one-half mile north of downtown Eureka across State Route 255, and four miles from the bay's entrance to the Pacific Ocean. Although traversed by a state highway, there is no vehicular access onto the island or to the project site.

The project site is located on the northeastern side of the island around the abandoned boat repair yard. Representing over 1,000 years of continuous human occupation dating back to 900 AD, the village site covers approximately 4.5 acres and is comprised primarily of discarded organic matter containing a variety of bivalve shells and other food wastes interspersed with interred cultural artifacts and human remains.

Vegetation cover is composed of a mixture of native coastal scrub plants and exotic species brought in by settlers to the island, including coyote brush (*Baccharis pilularis*), cow parsnip (*Heracleum lanatum*), pearly everlasting (*Anaphilis margaritacea*) Queen Ann's lace (*Daucus carota*), yarrow (*Achillea millefolium*), evergreen huckleberry (*Vaccinium ovatum*), and Himalaya blackberry (*Rubus discolor*), with scattered tree cover composed on black acacia (*Acacia melanoxylon*), red alder (*Alnus rubra*), arroyo willow (*Salix lasiolepis*), wax-myrtle (*Myrica californica*), and Sitka spruce (*Picea sitchensis*). Damper areas adjacent to the bay are vegetated with a variety of emergent saltmarsh vegetation, including pickleweed (*Salicornia virginica*), saltgrass (*Distichlis spicata*), scirpus (*Scirpus cernuus*), Chilean cordgrass (*Spartina densiflora*) and common rush (*Juncus effusus*).

The project site consists of non-federal trust land fee-simple title Tribal holdings situated within the boundaries of the City of Eureka over which the State retains a public trust easement. The project site lies within Natural Resource (NR) and Water Conservation (WC) zoning districts under the City's Coastal Zoning Regulations. The project area represents a significant Native American cultural heritage site and is listed in the National Register of Historic Places and as a threatened National Historic Landmark.

Before its destruction, the site consisted of a large shellmound, encompassing approximately 6 acres and attaining depths of up to 14 feet above Mean High Water. The village consisted of eleven house pits accommodating approximately 50 full-time residents, numerous burial plots and funereal remains, and other cremated and inhumed cultural artifacts. As one of the largest Wiyot villages, Tuluwat typified the late prehistoric period and was instrumental in outlining the prehistory of the northern California coast, especially with regard to the stylization of the stone-carved burial accompaniments, its concentration of large woodworking tool relics, and the unique presence of fired clay figurines, collectively referred to as the "Gunther Phase" or "Pattern." The site is also nationally significant for the large amount of archeological research material remaining.

C. Description of Project Approved Under CDP No. 1-03-024

To stabilize the eroded banks of the island and to prevent further coastal erosion, the Commission approved Coastal Development Permit No. 1-03-024 on June 9, 2004, which authorized the installation of a 20-25-foot-wide band of revetment materials along a 400-foot segment of the island's northeastern shoreline. The shoreline protection works are composed of a series of 12-foot-long fiberglass-polyester sheet pile bulkhead panels set to a depth of 10 feet with two feet of freeboard extending above grade. The sheet pile is buttressed on the exposed bayward face with 52 cubic yards of minimum six-inch-diameter cobble and 23 cubic yards of large woody debris anchored in front of the pilings to provide additional wave protection and to screen the panels from view. Behind the sheet pile, approximately 316 cubic yards of soil, rock, and shell fill were placed over jute mat or other geo-textile fabric in one-foot lifts with slopes equal to or less than 2V:1H. Once put in place, the backfill was planted with a variety of native plants, including Hooker's willow (*Salix hookeriana*), wax myrtle (*Myrica californica*), and saltgrass (*Distichlis spicata*) to help bind the revetment materials together.

The approved project resulted in a total of an additional 7,100 square feet of fill being placed over areas of unconsolidated supra-tidal estuarine shoreline wetlands at and above the Mean High Water Line. Although the approved fill covers this additional amount of shoreline area, the approved revetment is situated wholly above the Mean High Water line. Accordingly, none of the fill extends into the water column during the average tidal cycles on the bay. Nonetheless, the revetment is designed to allow water to flow through the sheetpile materials and the underlying geo-textile fabric to allow equalization of pore pressure exchange between the sediments behind the revetment and the adjoining tidal inundated sediments.

D. Description of Proposed Project

The currently proposed project involves tying in additional shoreline revetment to the revetment structure approved under CDP No. 1-03-024 in conjunction with implementing Phase 1 of the Tuluwat Restoration Project, which generally involves implementing site

clean-up activities, as described below. The 400-foot-long revetment structure approved under CDP No. 1-03-024 was installed from the existing bulkhead northward as well as south of the marine way runners (the site where ships historically were pulled out of the bay for repair). An approximately 130-foot-long gap in the shoreline revetment just south of the bulkhead (and adjacent to the PCP/dioxin contaminated area) was purposefully left as part of that project so that this area could be appropriately incorporated into the remediation design currently proposed. The way runner area is considered to be the most contaminated portion of the midden, based on sampling results showing PCP concentrations in the area exceeding the U.S. Environmental Protection Agency's preliminary remediation goals (PRG) for industrial soil (see Exhibit No. 7).

The specific project activities proposed in this permit application (Phase I of the Tuluwat Restoration Project) include the following:

- Placement of a temporary causeway within approximately 1,930 square feet of bay mudflats for the purpose of transferring construction materials from barges to the island during lower tides. The applicant proposes to restrict the temporary causeway to one approximately 15-foot-wide by 150-foot-long corridor extending from the bay to the island between existing eelgrass beds (see Exhibit Nos. 4 and 5). The applicant proposes to construct the temporary causeway using temporary piers and beams or rock placed over geotextile and geoweb (a cellular confinement product used to reduce lateral spreading of fill materials on non-cohesive soils). Soil compaction is proposed to be minimized by the use of geowebbing and/or mud mats to spread the load.

- Repair of the existing bulkhead: The existing bulkhead, which was constructed decades ago to support a platform used for boat repair activities, acts as an important revetment that protects the midden and helps contain contaminated sediment from mobilizing and being released into the bay. However, due to damage to the bulkhead associated with storm events during the winter of 2005/2006, the midden behind the bulkhead is experiencing significant impact from erosion, damaging the archaeological resource and releasing contaminants into the bay (see photos, Exhibit No. 6). According to the Draft EIR prepared for the project, the existing bulkhead covers approximately 2,485 square feet, including a 1,308-square-foot concrete structure and a 1,177-square-foot log structure. The concrete structure consists of a concrete footing and wall up to four feet above natural grade, reinforced and built up with large timbers, and filled with a significant amount of garbage. The log structure, which consists of a 3-foot-diameter log and associated fill, juts out perpendicular to the concrete structure and parallel to the shoreline. The existing bulkhead is situated immediately south of a portion of the revetment that was installed under CDP No. 1-03-024 and just north of the way runners.

Bulkhead repair will involve removing the trash fill and adding to the existing concrete walls from the inside of the footing so that the exterior footprint of the bulkhead would not be increased. This concrete retaining structure would expand over the existing concrete foundation to replace the wooden frame currently on top of the existing concrete foundation. The interior trash would be removed and replaced with a protective geotextile cover (woven monofilament) on the ground layer to cap remaining contaminants and protect the midden, a layer of clean gravel fill, and capped with permeable pavers (as described below for the protective soil and geotextile cover). Bulkhead fill quantities include approximately 52 cubic yards of concrete and 208 cubic yards of gravel fill (approximately 4 feet of gravel across the 1,400-square-foot area). The log portion of the bulkhead would be removed, and sheet piling as proposed below would be installed at that location (see plans, Exhibit No. 4).

The proposed shoreline revetment (see below) will connect the repaired bulkhead with the southern portion of the sheet wall revetment installed under CDP No. 1-03-024. In this way the repaired bulkhead will function as shoreline revetment and footing for the proposed geotextile and fill contamination cover without the need for its removal (which could damage the midden, lead to shoreline erosion, and significantly mobilize accumulated contaminated sediment) and replacement with sheet wall revetment. The repaired bulkhead also will be utilized for construction access to the island during higher tides (by small-sized boats only).

- Removal of debris and demolition of various dilapidated structures: When the applicant purchased the site in 2000, the area was littered with the remains of a boat drydock, boat repair facilities, and associated residences. The Tribe collected and disposed of an abundance of miscellaneous household and industrial garbage as well as hazardous material such as industrial paints, solvents, metals, batteries, and other materials. There were also 15 structures in various stages of disrepair on the site including buildings, shed, fishing shacks, a water tower, dock, bulkhead, and marine way runners. Of those, five structures were destroyed during winter storm events between 2001 and 2005. The resulting debris was removed by the Tribe. The applicant proposes to remove various debris and dilapidated structures including household waste, scrap metal, low-grade workshop waste, and the remnants of the following derelict buildings: the secondary residence, the paint shed, the shed next to the Butler building, the winch shed, and the chicken coop (see plans, Exhibit No. 4).

- Excavation of PCP-contaminated soils: Due to the cultural significance of the midden material and its contents, the site clean-up plan targets only the most contaminated soil on the project site. The applicant proposes to remove up to 17 cubic yards of the most contaminated midden in a 400- to 600-square-foot area (excavating 1 to 2 feet deep) near the paint shed and way runners (see Exhibit No. 7). The areas chosen for excavation were based on previous PCP analytical

results. The soils proposed for removal exceed 50 mg/kg of PCP, which is well above the U.S. EPA Preliminary Remediation Goal (PRG) for PCP, which is 9 mg/kg. The excavation will be conducted using hand tools and/or a small track mounted backhoe by professional archaeologists with the appropriate level of HAZWOPER training. A portion of the excavation may enter into an area below mean high water.

The interim site cleanup plan prepared for the project by the applicant's consultant, SHN Consulting Engineers & Geologists, Inc. (Exhibit No. 10), details the methods by which the contaminated soils will be excavated and removed from the area. Excavated material will be inspected by the archaeologist, and any culturally sensitive materials will be removed. Due to the sensitive nature of the site, there are no locations where excavated soils or way runner wood debris can be stockpiled prior to disposal. Thus, the excavated soils and way runner wood must be placed directly into transportation containers (17E/H 55-gallon drums or into covered metal bins) and removed from the site for disposal.

- Protective soil and geotextile cover for contaminated area: The purpose of the cover is to protect human health and limit exposure to site contamination as well as protect cultural resources. After the excavation activities described above, a permeable cap with a geo-textile fabric or geo-grid will be constructed over the majority of the upland portion of the 1.5-acre parcel as shown on Exhibit No. 4 (project plans). Approximately 34,000 square feet of the site will be covered with geo-fabric, and approximately 3,000 square feet will be covered with geo-grid. A portion of this protective cover (approximately 5,530 square feet) will be placed within existing wetlands. The cover will consist of the following:
    - A woven monofilament geotextile filter fabric or geo-grid;
    - A minimum of 12 inches of imported, clean fill placed over contaminated areas of the 1.5-acre parcel and a minimum of 6 inches of imported fill placed over non-contaminated areas of the 1.5-acre parcel (for a total of approximately 1,700 cubic yards of earthen fill); fill will be compacted to a minimum of approximately 80 percent relative compaction; and
    - Erosion control surfacing such as permeable stone pavers or equivalent surfacing in areas below an elevation of 11 feet MHHW and in areas of high use to ensure the imported fill is not washed away by tidal action or worn down by foot traffic.

  After installation of the protective cover, the applicant proposes to install native grasses, trees, and other vegetation to assist in controlling long-term erosion at the site. In areas where the midden transitions to the salt marsh, a geo grid would be used so that rooted vegetation can more easily establish to create a sound and visual buffer. This soil cover would also help to entrain the remaining

contamination and protect it from erosional forces, thus reducing potential release into the surrounding environment.

- Installation of a shoreline revetment structure: The applicant proposes to install approximately 130 lineal feet of carbon reinforced fiberglass sheet piling (installed to a depth of 4 to 6 feet) as footing to the shoreline portion of the proposed protective soil/geoweb cover described above. Approximately 29 cubic yards (780 cubic feet) of rock slope protection is proposed to be placed within wetlands on the outside (bay side) of the new revetment. The proposed shoreline revetment will link the log portion of the repaired bulkhead (see above) with the southern portion of the revetment wall installed under CDP No. 1-03-024.

The site clean-up and remediation described above has been designed so as not to preclude final site clean-up and remediation. The applicant completed a treatability study for the in-situ treatment of the remaining contamination in December 2007. The results of the study indicate that the oxidizer is effective at treating the PCP and dioxin/furan contaminated soil at the site. The applicant currently is seeking funding to develop a final site clean up work plan and to complete the clean-up.

The applicant is proposing various protocols and mitigation measures to avoid or minimize the project's impacts on coastal resources and the environment. These include the following:

- Debris disposal plan: The Tribe must differentiate between the disposal of non-regulated solid waste composed of construction debris and trash that will be removed from the bulkhead area and other areas of the site and regulated solid waste composed of soil excavated from the PCP-impacted areas of the site.

  To address the former, the Tribe has submitted a work plan, prepared by A.J. Diani Construction Co., Inc., that addresses the procedures and methods proposed for implementing clean-up of the illegal disposal site (IDS) (at the bulkhead) associated with previous commercial activities on the island (Exhibit No. 11). The work plan details mobilization and site preparation, excavation and segregation of trash and debris, loading and transport of the trash for disposal, and final clean-up and demobilization. Debris from this area is anticipated to be non-hazardous and is proposed to be taken to a local municipal landfill. The Tribe has specified using the Eureka Community Recycling Center for the disposal of non-hazardous recyclable material and the Humboldt Waste Management Authority Transfer Station for the disposal of non-hazardous solid waste that is not recyclable.

  The Site Cleanup Plan prepared by the applicant's consultant, SHN Consulting Engineers and Geologists, Inc. (Exhibit No. 10), addresses the disposal of regulated solid waste composed of soil excavated from the PCP-impacted areas. Excavated soils will be transported to either Aragonite, Utah for incineration or to Grassy Mountain, Utah for disposal in a hazardous materials landfill. The wood

that comprises the way runners will be placed in a bin and transported to Forward Landfill in Manteca for disposal.

- Non-point Source/Storm Water Pollution Prevention Plan: The applicant submitted a draft NPS/SWPPP (Exhibit No. 12), which has six main objectives: (1) to identify all pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges associated with construction activities from the project site; (2) to identify non-stormwater discharges; (3) to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the project site during construction; (4) to develop a maintenance schedule for BMPs installed during construction that will reduce or eliminate pollutants after construction is completed (post-construction BMPs); (5) to identify a sampling and analysis strategy and sampling schedule for stormwater discharges from construction activities that discharge directly into the bay; and (6) for all construction activity, to identify a sampling and analysis strategy and sampling schedule for stormwater discharges, which have been discovered through visual monitoring to be potentially contaminated by pollutants, not visually detectable in the runoff.
- Spill Prevention, Containment and Countermeasure Plan: The applicant submitted a draft SPCC Plan (Exhibit No. 13), which focuses on preventing releases of petroleum-based products or other regulated materials that are used and/or stored in significant quantities at the project site
- Preliminary revegetation plan: The applicant proposes to seed all areas of bare fill with a blend of native perennial grasses and forbs including mostly red fescue (*Festuca rubra*) with lesser amounts of tufted hair grass (*Deschampsia cespitosa*) and yarrow (*Achillea millefolium*). Seed material is proposed to be obtained from Freshwater Farms, a local native plant nursery that specializes in locally derived plant material. The applicant proposes to use Hydro-Seed technology to apply the seed if possible; if not, the seeding will be done by hand, lightly raked in, and mulched with seedless rice straw. Daily irrigation is proposed for the site using temporary mobile sprinklers until plants are established or until the rainy season begins. Fresh water will be delivered to the site by barge and stored in a 5,000-gallon storage tank. Pressure will be achieved using a portable water pump. Maintenance will be limited to noxious weed removal as necessary.
- Annual Inspections: The applicant proposes to inspect on a quarterly basis, for a period of 5 years, the area where the protective soil/geotextile cover is to be placed to monitor the effectiveness and condition of the cover and to document and remove any nonnative and/or invasive species that are identified. The Tribe proposes to submit annual inspection reports reviewing cover effectiveness and providing recommendations for future remediation and/or abatement if necessary.

In addition, the Commission notes that the applicant has been or will be issued several permits and associated authorizations for the project that contain terms and conditions for avoiding or minimizing impacts to coastal resources and the environment (see "other approvals" listed on page 2).

E. Enhancement of Water Quality

The project has been proposed, in major part, to resolve coastal water contamination problems associated with legacy contamination in the project area at the site of the old boat repair yard. The project is thereby proposed to protect and enhance water quality.

Section 30230 of the Coastal Act states:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of waste water discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantial interference with surface water flow, encouraging waste water reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.*

The project area's recent history includes over a century of industrial use during a time when there were no mandated environmental protections from hazardous materials. The 1.5-acre parcel includes the site of the former ship repair yard and dry dock. It is known that the shipworkers used various hazardous materials for maintenance and repair operations, including lead paint, creosote, acetone, petroleum-based wood preservatives, and other solvents and metals.

After the Tribe acquired the property in 2000, one and a half tons of non-hazardous materials were removed from the site including household and industrial garbage such as hardware, hand tools, small electric motors, cables, rope, chains, plastics, hoses, transmission gears, woody debris, tables, sinks, and more. As part of that effort, various flammable, corrosive, aerosol, and/or toxic hazardous material was also removed from the site, inventoried, and containerized. This included 29 lead/acid batteries, spray paint

and aerosol cleaners and solvents, fire extinguishers, zinc plates, and various other paints, solvents, varnish, resin, etc.

Between 2001 and 2005, the U.S. Environmental Protection Agency (EPA) funded a Targeted Brownfields Site Assessment of the property, which resulted in four reports (Phase I Report, Phase II Investigation Final Report, Phase II B Addendum, and the Interim Site Cleanup Plan attached as Exhibit No. 10). This assessment identified areas of concern on the property in soils and groundwater with levels of contamination that exceed federal benchmarks for total petroleum hydrocarbon as oil (TPH-o), Polynuclear Aromatic Hydrocarbons (PAHs), metals (arsenic, lead, aluminum, copper, iron, and various others), pentachlorophenol (PCP), dioxins, and other materials.

Humboldt Bay is currently listed as "impaired" for polychlorinated biphenyls (PCBs) and dioxin under Section 303(d) of the federal Clean Water Act. This status means that the bay does not meet state or federal water quality requirements, and Total Maximum Daily Load" (TMDL) waste allocations must be developed pursuant to the CWA and the Porter Cologne Act.

The Interim Site Cleanup Plan (Exhibit No. 10) was developed in consultation with the EPA and the North Coast Regional Water Quality Control Board based on the Targeted Brownfields Site Assessment findings and the cultural and historical significance of the midden material comprising the site soils. The primary objective of the interim site cleanup plan proposed under this CDP application is to remove contaminants that continue to threaten groundwater and coastal waters while taking into consideration cultural constraints (i.e., any contaminated soils excavated and removed from the site would be comprised of archaeologically sensitive midden material). Due to the cultural significance of the midden material and its contents, the site clean-up plan targets only the most contaminated soil on the project site. The applicant proposes to remove up to 17 cubic yards of the most contaminated midden in a 400- to 600-square-foot area (excavating 1 to 2 feet deep) near the paint shed and way runners (see Exhibit Nos. 7 and 10). The soils proposed for removal exceed 50 mg/kg of PCP, which is well above the U.S. EPA Preliminary Remediation Goal (PRG) for PCP, which is 9 mg/kg. The excavation will be conducted using hand tools and/or a small track mounted backhoe by professional archaeologists with the appropriate level of HAZWOPER training. Approximately 10 cubic yards of excavation may occur below mean high water. Excavated material will be inspected by the archaeologist, and any culturally sensitive materials will be removed. Due to the sensitive nature of the site, there are no locations where excavated soils or way runner wood debris can be stockpiled prior to disposal. Thus, the excavated soils and way runner wood must be placed directly into transportation containers (17E/H 55-gallon drums or into covered metal bins) and removed from the site for disposal.

The Commission's water quality supervisor, Dr. Jack Gregg, reviewed the proposed project plans and generally agrees with the conclusions and recommendations (Exhibit No. 14).

If the most contaminated portion of the site is not cleaned up as proposed, and if the shoreline revetment and bulkhead repair are not implemented, contaminated soils will continue to erode into bay waters. The proposed revetment will serve not only to protect the shoreline and midden materials from erosion, but also to sequester residual contaminated sediments on site (rather than allowing them to leach out into bay waters) until a final site cleanup plan can be developed and implemented. As a result, the quality of groundwater in the vicinity of the site and the wetlands and coastal waters that the groundwater comes in contact with will be improved, maintained, and at least partially restored, thereby maintaining and restoring biological productivity and protecting marine resources and water quality consistent with Coastal Act Sections 30230 and 30231.

To ensure that the applicant carries out the site cleanup according to the plan reviewed and approved by Dr. Gregg, the Commission attaches Special Condition No. 1. This condition requires that the applicant submit, prior to permit issuance for the review and approval of the Executive Director, a final version of the Interim Site Cleanup Plan that substantially conforms to the submitted plan (Exhibit No. 10). The condition also requires that the permittee undertake development in accordance with the approved final plan.

Although the proposed project will improve water quality and will help protect biological productivity and marine resources when completed and operational, construction of the proposed project could have short-term impacts on water quality, biological productivity and marine resources. The project involves (1) placing a temporary causeway within the bay mudflats to transfer construction materials from barges to the island during lower tides; (2) repairing the existing bulkhead to protect the midden from erosion and provide a footing for the proposed soil and geotextile cover that will cap remaining contaminants on the site (until a final cleanup plan can be developed and implemented); (3) removing debris and demolishing various dilapidated structures on the island; (4) excavating approximately 17 cubic yards of PCP-contaminated midden soils; (5) installing a protective soil and geotextile cover across the majority of the upland portion of the 1.5-acre parcel; and (6) installing a shoreline revetment structure (as a footing to the proposed protective soil/geotextile cap) consisting of ~130 lineal feet of carbon reinforced fiberglass sheet piling and ~29 cubic yards of rock slope protection on the bayward side of the new revetment. Without the implementation of proper protocols and "best management practices" (BMPs), water quality impacts could occur.

To guard against construction-related water quality impacts, the Commission attaches Special Condition No. 2. This condition lists various construction responsibilities that the permittee must adhere to during project implementation including (among others): (1) all construction materials and debris originating from the project shall be stored and/or contained in a manner to preclude their uncontrolled entry and dispersion to the waters of Humboldt Bay; (2) any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion; (3) silt screens, straw bales, coir-rolls, coffer damming, and/or water bladder walls appropriate for use in

estuary and intertidal setting applications shall be installed at the toe of the slope and around the perimeter of the area to be graded prior to the initiation of the grading activities and shall be maintained throughout project construction; (4) any fueling of construction equipment shall occur on the paved areas within the adjoining former boat yard structures on the site at a minimum of 100 feet from the Mean High High Water line of the bay; (5) fuels, lubricants, and solvents shall not be allowed to enter the waters of Humboldt Bay; and (6) revetment materials shall only be installed during lower stages of the tide.

The entrainment of sediment into the bay through stormwater runoff from construction activities is another potential project impact. Accordingly, the applicant prepared a draft Non-point Source/Storm Water Pollution Prevention Plan (Exhibit No. 12), which has six main objectives: (1) to identify all pollutant sources, including sources of sediment, that may affect the quality of stormwater discharges associated with construction activities from the project site; (2) to identify non-stormwater discharges; (3) to identify, construct, implement, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the project site during construction; (4) to develop a maintenance schedule for BMPs installed during construction that will reduce or eliminate pollutants after construction is completed (post-construction BMPs); (5) to identify a sampling and analysis strategy and sampling schedule for stormwater discharges from construction activities that discharge directly into the bay; and (6) for all construction activity, to identify a sampling and analysis strategy and sampling schedule for stormwater discharges, which have been discovered through visual monitoring to be potentially contaminated by pollutants, not visually detectable in the runoff.

To ensure that the NPS/SWPPP plan is implemented to accomplish the identified objectives and reduce erosion and sedimentation impacts, the Commission attaches Special Condition No. 3. This condition requires the applicant to submit for the review and approval of the Executive Director, a final NPS/SWPPP that substantially conforms to the submitted plan (Exhibit No. 12). This condition also requires that the permittee undertake development in accordance with the approved final plan.

The project requires the use of heavy equipment in and around coastal waters and environmentally sensitive habitat areas, and as such, the project has the potential to impact sensitive areas through an accidental spill of hazardous fluids such as fuels, concrete, etc. To address these potential impacts, the applicant prepared a draft Spill Prevention, Control, and Countermeasure (SPCC) Plan (Exhibit No. 13), which focuses on preventing releases of petroleum-based products or other regulated materials that are used and/or stored in significant quantities at the project site. The SPCC Plan sets forth, at a minimum, the following limitations and restrictions for equipment fueling and maintenance activities at the project site:

- Fuels, lubricants, and solvents shall not be allowed to enter the waters of Humboldt Bay;

- Prior to the start of any activities that could potentially result in a liquid hazardous materials spill, hazardous materials management equipment, including oil containment booms and absorbent pads, shall be available immediately on-hand at the project site;
- A registered fire-response, professional hazardous materials clean-up/remediation service shall be locally available on call to respond within two hours of being notified of a spill;
- Any accidental spill shall be rapidly contained and cleaned up;
- All heavy equipment operation in or near the water's edge shall use bio-diesel for fuel and vegetable oil and/or approved non-petroleum hydraulic fluid as hydraulic fluid
- All equipment shall be parked in a designated area, and shall have a drip pan or diaper below to catch drips;
- The Tribe shall regularly inspect construction activities to insure equipment is free of leaks and is in good working order.

To ensure that the SPCC Plan is implemented to accomplish the identified objectives and protect coastal waters from hazardous spills, the Commission attaches Special Condition No. 4. This condition requires the applicant to submit, for the review and approval of the Executive Director, a final SPCC plan that substantially conforms to the submitted plan (Exhibit No. 13) except that the final plan shall list the Coastal Commission as an agency to be notified in the event that a spill enters Humboldt Bay or threatens to impact coastal waters. In this way the Commission's staff will have the opportunity to assess the severity of a spill as it relates any necessary permits or permit amendments associated with cleanup activities or restoration of the affected area.

The water quality of coastal waters and adjoining sensitive habitats could also be adversely affected by the discharge or release of demolition debris or other construction-related debris if proper protocols are not followed. The project will generate an abundance of non-regulated and regulated solid waste such as construction debris, trash, PCP-contaminated soils, etc. To address the non-regulated solid waste debris, the Tribe submitted a work plan prepared by A.J. Diani Construction Co., Inc. (Exhibit No. 11), which addresses the procedures and methods proposed for implementing clean-up of the illegal disposal site (IDS) (at the bulkhead) associated with previous commercial activities on the island, including excavation and segregation of trash and debris, loading and transport of the trash for disposal, and final clean-up and demobilization. Debris from this area is anticipated to be non-hazardous and is proposed to be taken to a local municipal landfill. The Tribe has specified using the Eureka Community Recycling Center for the disposal of non-hazardous recyclable material and the Humboldt Waste Management Authority Transfer Station for the disposal of non-hazardous solid waste that is not recyclable. The Interim Site Cleanup Plan prepared by the applicant's consultant, SHN Consulting Engineers and Geologists, Inc. (Exhibit No. 10), addresses

the disposal of regulated solid waste composed of soil excavated from the PCP-impacted areas. Excavated soils will be transported to either Aragonite, Utah for incineration or to Grassy Mountain, Utah for disposal in a hazardous materials landfill. The wood that comprises the way runners will be placed in a bin and transported to Forward Landfill in Manteca for disposal.

To ensure that all regulated and non-regulated waste debris is prevented from entering coastal waters and is ultimately disposed of in an approved location, the Commission attaches Special Condition No. 5. This condition requires that prior to issuance of the coastal development permit, the applicant submit for the review and approval of the Executive Director, a final plan for the disposal of construction-related debris and excavated materials including any potentially hazardous materials. The plan must show stockpile locations, describe the manner by which the material would be removed from the construction site, identify all debris disposal sites that would be utilized, and demonstrate that all disposal sites are in areas where construction-related debris from the project may be lawfully disposed. Development must be undertaken in accordance with the approved final plan

Another potential impact to coastal water quality relates to the proposed placement of approximately 1,700 cubic yards of earthen fill on the site for the protective permeable cap described above. The cap is important both to protect the integrity of the midden material (e.g., protection from looting and erosion) and to help sequester residual contaminated soils (i.e., midden material) until a final cleanup plan can be implemented. If not properly secured on site, the imported borrow material could become entrained in stormwater runoff and enter the waters of Humboldt Bay. The Interim Site Cleanup Plan (Exhibit No. 10) proposes using erosion control surfacing such as permeable stone pavers or equivalent surfacing in areas below an elevation of 11 feet MHHW and in areas of high use to ensure the imported fill is not washed away by tidal action or worn down by foot traffic. The applicant proposes to plant the interstitial areas between the pavers with salt-tolerant marsh species such as salt grass (*Distichlis spicata*) and pickleweed (*Salicornia* sp.). Furthermore, the applicant proposes to seed all areas of bare fill with a blend of native perennial grasses and forbs including mostly red fescue (*Festuca rubra*) with lesser amounts of tufted hair grass (*Deschampsia cespitosa*) and yarrow (*Achillea millefolium*). Seed material is proposed to be obtained from Freshwater Farms, a local native plant nursery that specializes in locally derived plant material. The applicant proposes to use Hydro-Seed technology to apply the seed if possible; if not, the seeding will be done by hand, lightly raked in, and mulched with seedless rice straw.

In addition, the applicant proposes to conduct regular site inspections of the area where the protective soil/geotextile cover is to be placed to monitor the effectiveness and condition of the cover and to document and remove any nonnative and/or invasive species that are identified (e.g., invasive species that may be inadvertently transported to the site in the imported borrow material proposed for use in the protective soil/geotextile cover). The applicant proposes to conduct inspections quarterly for a period of five years.

To ensure that imported borrow material is secured on site, that the protective cover is effectively functioning as intended, and that site revegetation is carried out as proposed, the Commission attaches Special Condition Nos. 6 and 7. Special Condition No. 6 requires that the applicant submit, prior to permit issuance for the review and approval of the Executive Director, a final revegetation plan for the entire area disturbed by grading activity, including the area proposed for capping with permeable pavers. The plan shall demonstrate that the entire disturbed area shall be replanted with regionally appropriate native vegetation of local genetic stock. Due to the sensitivity of the surrounding bay environment, no invasive plant species shall be planted, and no rodenticides containing any anticoagulant compounds including but not limited to Bromadiolone or Diphacinone shall be used. The plan shall include provisions for a minimum of five years of annual monitoring the site to ensure that plan's specified goals and performance criteria have been met. Special Condition No. 7 requires the applicant to carry out annual inspections as proposed to monitor the effectiveness and condition of the cover and to document and remove any nonnative and/or invasive species that are identified in the area.

Finally, to enable Commission staff to monitor compliance with permit conditions and to be informed with the results of confirmation sampling required by the Regional Water Quality Control Board and its implications for any additional remediation work that might be needed in the future, the Commission attaches Special Condition No. 8 and 9. Special Condition No. 8 requires the permittee to, at least one week prior to performing any site cleanup activities, submit written notice to Commission staff of the specific dates when the site cleanup work will be performed and to offer appropriate access to Commission staff for observing field work during those activities for purposes of determining compliance with Coastal Development Permit No. 1-08-017. Special Condition No. 9 requires that the Tribe provide results of confirmation sampling and soil and groundwater monitoring required by the Regional Board to Commission staff for review and comment.

With the implementation of the above plans and BMPs during and after construction, including erosion control measures, proper debris disposal, the management of hazardous materials used in the construction process, and others, the project as conditioned will minimize the potential for construction-related pollutants to be carried by storm water runoff into nearby wetlands and the bay, thereby protecting the water quality and biological productivity of these areas. Therefore, (1) as the adverse impacts of construction on water quality will be reduced to levels of insignificance, (2) as the primary purpose of the project is to remove and sequester contaminated sediments adversely affecting the water quality of Humboldt Bay, and (3) as the proposed project will restore the biological productivity and quality of coastal waters and wetlands to maintain population of marine organisms, the Commission finds that the project as conditioned is consistent with Sections 30230 and 30231 of the Coastal Act.

F. Allowable Use for Wetland Fill

Section 30108.2 defines "fill" as the placement of earth or any other substance or material in a submerged area.

The project involves the placement of fill (geotextile fabric, soil fill, and permeable pavers as described above) within approximately ~5,530 square feet of wetlands to install protective cover/revetment materials in accordance with the interim site cleanup. Furthermore, the project involves the installation of approximately 130 lineal feet of new sheet piling within wetlands between the existing revetment and the bulkhead area. Approximately 29 cubic yards (780 cubic feet) of rock slope protection is proposed to be placed within wetlands on the outside (bay side) of the new revetment (for a wetland fill footprint of approximately 390 square feet). Finally, the applicant proposes to place a temporary causeway (constructed of temporary piers and beams or rock placed over geowebbing) within approximately 1,930 square feet of intertidal wetlands. See Exhibit No. 5 for the proposed fill in relation to delineated wetlands in the area (Note: A wetland delineation was conducted on the project site in 2002 by the applicant's consultant, Mad River Biologists).

Section 30233(a) of the Coastal Act states the following, in applicable part:

> *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> …
>
> *(1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
>
> *(2) Maintaining existing, or restoring previously dredged, depths in existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
>
> *(3) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
>
> *(4) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
>
> *(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
>
> *(6) <u>Restoration purposes</u>*

> *(7) Nature study, aquaculture, or similar resource dependent activities.* [emphases added]
>
> …

In order to be consistent with Section 30233, a proposed project involving fill is whether the fill must be for one of the seven allowable uses under Section 30233(a). Among the allowable use which most closely match the project objectives are enumerated in Section 30233(a)(6) and (7) involving fill relating to "restoration purposes," "nature study," or "similar resource dependent activities."

The installation of the proposed protective cap and shoreline revetment is being proposed in the interest of removing contaminated soils from the site and sequestering residual contaminated soils for the benefit of water quality improvement and public health protection as well as armoring the bayside edge of the shell mound to protect the structure from being further eroded by storm surge and boat wake waves generated on Humboldt Bay. As only an interim site cleanup is proposed at this time, and as the installation of the protective cap will not restore the site to natural conditions that existed prior to human disturbance, the purpose of such development is not to "restore" the site or to "restore" the eroded shoreline, only to complete a partial cleanup pending the development of a final cleanup plan while in the meantime stabilizing and protecting the site from ongoing erosion. Accordingly, the fill for the proposed development is not for "restoration purposes."

With respect to project being recognized as either "nature study" or "similar resource dependent activities" as identified in Section 30233(a)(7), the Commission notes that while the applicant has expressed plans to restore and develop the Tuluwat village site to conduct cultural dance ceremonies, tribal artistry and crafting, linguistic studies, and expositions on other pre-Columbian natural history subject matter, the permit request before the Commission at this time is solely for the development of the subject shoreline protective structures and implementation of the interim site clean-up plan. Moreover, even if the project description were to include proposals for developing other site improvements or for instituting a museum/interpretative center public assembly use at the site, the proposed fill is not functionally related to either of these development activities. Accordingly, the proposed fill for the shoreline protective device is not a form of "nature study" or "similar resource dependant activity."

Therefore, the Commission finds that the filling for the shoreline revetment structure is not for one of the allowable uses for dredging, diking, and filling of coastal waters pursuant to Section 30233(a) of the Coastal Act.

G. Conflict Resolution

As noted above, the proposed installation of the protective soil cover, the new revetment, the bulkhead repair, and the temporary causeway would encroach into wetland habitat inconsistent with the provisions of Section 30233, which require that the fill must be for

one of the seven allowable uses under Section 30233(a). However, as also noted above, to not approve the project would result in significant adverse impacts to water quality and marine resources that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act to maintain and restore marine resources and water quality.

1. The Identification of a True Conflict is Normally a Condition Precedent to Invoking a Balancing Approach

As is indicated above, the standard of review for the Commission's decision whether to approve a coastal development permit in the Commission's retained jurisdiction is whether the project as proposed is consistent the Chapter 3 policies of the Coastal Act. In general, a proposal must be consistent with all relevant policies in order to be approved. Put differently, consistency with each individual policy is a necessary, but not sufficient, condition for approval of a proposal. Thus, if a proposal is inconsistent with one or more policies, it must normally be denied (or conditioned to make it consistent with all relevant policies).

However, the Legislature also recognized that conflicts can occur among those policies (Coastal Act Section 30007.5). It therefore declared that, when the Commission identifies a conflict among the policies in Chapter 3, such conflicts are to be resolved "*in a manner which on balance is the most protective of significant coastal resources* (Coastal Act Sections 30007.5 and 30200(b))." That approach is generally referred to as the "balancing approach to conflict resolution." Balancing allows the Commission to approve proposals that conflict with one or more Chapter 3 policies, based on a conflict among the Chapter 3 policies as applied to the proposal before the Commission. Thus, the first step in invoking the balancing approach is to identify a conflict among the Chapter 3 policies.

2. Identification of a Conflict

For the Commission to use the balancing approach to conflict resolution, it must establish that a project presents a substantial conflict between two statutory directives contained in Chapter 3 of the Coastal Act. The fact that a proposed project is consistent with one policy of Chapter 3 and inconsistent with another policy does not necessarily result in a conflict. Virtually every project will be consistent with some Chapter 3 policy. This is clear from the fact that many of the Chapter 3 policies prohibit specific types of development. For example, section 30211 states that development "*shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization . . .*," and subdivision (2) of section 30253 states that new development "*shall . . . neither create nor contribute significantly to erosion . . . or in any way require the construction of protective devices . . . .*" Almost no project would violate every such prohibition. A project does not present a conflict between two statutory directives simply because it violates some prohibitions and not others.

In order to identify a conflict, the Commission must find that, although approval of a project would be inconsistent with a Chapter 3 policy, the denial of the project based on that inconsistency would result in coastal zone effects that are inconsistent with some other Chapter 3 policy. In most cases, denial of a proposal will not lead to any coastal zone effects at all. Instead, it will simply maintain the *status quo*. The reason that denial of a project can result in coastal zone effects that are inconsistent with a Chapter 3 policy is that some of the Chapter 3 policies, rather than prohibiting a certain type of development, affirmatively mandate the protection and enhancement of coastal resources, such as sections 30210 ("*maximum access . . . and recreational opportunities shall be provided . . .*"), 30220 ("*Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses*"), and 30230 ("*Marine resources shall be maintained, enhanced, and where feasible, restored*"). If there is ongoing degradation of one of these resources, and a proposed project would cause the cessation of that degradation, then denial would result in coastal zone effects (in the form of the continuation of the degradation) inconsistent with the applicable policy. Thus, the only way that denial of a project can have impacts inconsistent with a Chapter 3 policy, and therefore the only way that a true conflict can exist, is if: (1) the project will stop some ongoing resource degradation and (2) there is a Chapter 3 policy requiring the Commission to protect and/or enhance the resource being degraded. Only then is the denial option rendered problematic because of its failure to fulfill the Commission's protective mandate.

With respect to the second of those two requirements, though, there are relatively few policies within Chapter 3 that include such an affirmative mandate to enhance a coastal resource. Moreover, because the Commission's role is generally a reactive one, responding to proposed development, rather than affirmatively seeking out ways to protect resources, even policies that are phrased as affirmative mandates to protect resources more often function as prohibitions. For example, Section 30240's requirement that environmentally sensitive habitat areas "*shall be protected against any significant disruption of habitat values*" generally functions as a prohibition against allowing such disruptive development, and its statement that "*only uses dependent on those resources shall be allowed within those areas*" is a prohibition against allowing non-resource-dependent uses within these areas. Similarly, section 30251's requirement to protect "*scenic and visual qualities of coastal areas*" generally functions as a prohibition against allowing development that would degrade those qualities. Section 30253 begins by stating that new development shall minimize risks to life and property in certain areas, but that usually requires the Commission to condition projects to ensure that they are not unsafe. Even Section 30220, listed above as an affirmative mandate, can be seen more as a prohibition against allowing non-water-oriented recreational uses (or water-oriented recreational uses that could be provided at inland water areas) in coastal areas suited for such activities. Denial of a project cannot result in a coastal zone effect that is inconsistent with a prohibition on a certain type of development. As a result, there are few policies that can serve as a basis for a conflict.

Similarly, denial of a project is not inconsistent with Chapter 3, and thus does not present a conflict, simply because the project would be less inconsistent with a Chapter 3 policy than some alternative project would be, even if approval of the proposed project would be the only way in which the Commission could prevent the more inconsistent alternative from occurring. For denial of a project to be inconsistent with a Chapter 3 policy, the project must produce tangible enhancements in resource values over existing conditions, not over the conditions that would be created by a hypothetical alternative. In addition, the project must be fully consistent with the Chapter 3 policy requiring resource enhancement, not simply less inconsistent with that policy than the hypothetical alternative project would be. If the Commission were to interpret the conflict resolution provisions otherwise, then any proposal, no matter how inconsistent with Chapter 3, that offered even the smallest, incremental improvement over a hypothetical alternative project would necessarily result in a conflict that would justify a balancing approach. The Commission concludes that the conflict resolution provisions were not intended to apply based on an analysis of different potential levels of compliance with individual policies or to balance a proposed project against a hypothetical alternative.

In addition, if a project is inconsistent with at least one Chapter 3 policy, and the essence of that project does not result in the cessation of ongoing degradation of a resource the Commission is charged with enhancing, the project proponent cannot "create a conflict" by adding on an essentially independent component that does remedy ongoing resource degradation or enhance some resource. The benefits of a project must be inherent in the essential nature of the project. If the rule were to be otherwise, project proponents could regularly "create conflicts" and then demand balancing of harms and benefits simply by offering unrelated "carrots" in association with otherwise-unapprovable projects. The balancing provisions of the Coastal Act could not have been intended to foster such an artificial and manipulatable process. The balancing provisions were not designed as an invitation to enter into a bartering game in which project proponents offer amenities in exchange for approval of their projects.

Finally, a project does not present a conflict among Chapter 3 policies if there is at least one feasible alternative that would accomplish the essential purpose of the project without violating any Chapter 3 policy. Thus, an alternatives analysis is a condition precedent to invocation of the balancing approach. If there are alternatives available that are consistent with all of the relevant Chapter 3 policies, then the proposed project does not create a true conflict among Chapter 3 policies.

In sum, in order to invoke the balancing approach to conflict resolution, the Commission must conclude all of the following with respect to the proposed project before it: (1) approval of the project would be inconsistent with at least one of the policies listed in Chapter 3; (2) denial of the project would result in coastal zone effects that are inconsistent with at least one other policy listed in Chapter 3, by allowing continuing degradation of a resource the Commission is charged with protecting and/or enhancing; (3) the project results in tangible resource enhancement over the current state, rather than an improvement over some hypothetical alternative project; (4) the project is fully

consistent with the resource enhancement mandate that requires the sort of benefits that the project provides; (5) the benefits of the project are a function of the very essence of the project, rather than an ancillary component appended to the project description in order to "create a conflict; " and (6) there are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies.

An example of a project that presented such a conflict is a project approved by the Commission in 1999 involving the placement of fill in a wetland in order to construct a barn atop the fill, and the installation of water pollution control facilities, on a dairy farm in Humboldt County (CDP #1-98-103, O'Neil). In that case, one of the main objectives of the project was to create a more protective refuge for cows during the rainy season. However, another primary objective was to improve water quality by enabling the better management of cow waste. The existing, ongoing use of the site was degrading water quality, and the barn enabled consolidation and containment of manure, thus providing the first of the four necessary components of an effective waste management system. Although the project was inconsistent with Section 30233, which limits allowable fill of wetlands to eight enumerated purposes, the project also enabled the cessation of ongoing resource degradation. The project was fully consistent with Section 30231's mandate to maintain and restore coastal water quality and offered to tangibly enhance water quality over existing conditions, not just some hypothetical alternative. Thus, denial would have resulted in impacts that would have been inconsistent with Section 30231's mandate for improved water quality. Moreover, it was the very essence of the project, not an ancillary amenity offered as a trade-off, that was both inconsistent with certain Chapter 3 policies and yet also provided benefits. Finally, there were no alternatives identified that were both feasible and less environmentally damaging.

3. The Proposed Project Presents a Conflict

The Commission finds that the proposed project presents a true conflict between Chapter 3 policies of the Coastal Act. The proposed development will place fill in wetland habitat for a use not enumerated as one of the seven allowable uses listed under Coastal Act Section 30233. However, to not approve the project would result in significant adverse impacts to marine resources and water quality that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act to maintain and restore marine resources and coastal water quality.

As discussed above in Finding IV-E (Water Quality), soil and groundwater sampling conducted on the project site as part of an EPA-funded Targeted Brownfields Site Assessment revealed levels of contamination that exceed federal benchmarks for total petroleum hydrocarbon as oil (TPH-o), Polynuclear Aromatic Hydrocarbons (PAHs), metals (arsenic, lead, aluminum, copper, iron, and various others), pentachlorophenol (PCP), dioxins, and other materials. The Interim Site Cleanup Plan (Exhibit No. 10) was developed with the primary objective of removing the most contaminated soil on the project site, which exceeds 50 mg/kg of PCP, which is well above the U.S. EPA Preliminary Remediation Goal (PRG) for PCP, which is 9 mg/kg. The proposed plan will

remove contaminants that continue to threaten groundwater and coastal waters while taking into consideration cultural constraints (i.e., any contaminated soils excavated and removed from the site would be comprised of archaeologically sensitive midden material)

Although the proposed project is inconsistent with the requirements of Section 30233 that any fill placed in coastal waters or wetlands be for one of the seven listed allowable uses, the project will also enable the cessation of ongoing resource degradation. The project is fully consistent with Section 30230's and 30231's mandates to maintain and restore marine resources and coastal water quality, and the project offers to tangibly enhance water quality over existing conditions. Thus, denial would result in impacts that would be inconsistent with Section 30230's and 30231's mandates for protection of marine resources and improved water quality. Moreover, it is the very essence of the project, not an ancillary amenity offered as a trade-off, that is both inconsistent with certain Chapter 3 policies and yet also provides benefits. Finally, as discussed below, there are no alternatives identified that were both feasible and less environmentally damaging.

Alternatives Analysis

As noted above, a true conflict among Chapter 3 policies would not exist if there are feasible alternatives available that are consistent with all of the relevant Chapter 3 policies. Alternatives that have been identified include (a) installation of geo-grid matresses, (b) alternative configurations of shoreline revetment, and (c) the "no project" alternative. These various alternatives are discussed below.

(a) Complete Removal of All Contaminated Soils

This alternative would involve excavating and removing all contaminated soils from the area, which would accomplish the objective of avoiding further leaching of contaminants into the bay. Under this alternative, there would be no need to fill wetlands for the protective cap or for anchoring shoreline revetment. However, this alternative clearly is infeasible, because it would obliterate the extremely important archaeological resource (CA-HUM-67; see Finding IV-M below) without mitigation for these adverse effects. Therefore, complete removal of all contaminated soils on site would not be a feasible alternative that is consistent with all Chapter 3 polices of the Coastal Act, particularly with Section 30244.

(b) Alternative Configurations of Shoreline Revetment

The Commission considered alternative configurations for the proposed protective cap and revetment including (1) reducing the area of tidelands that would be covered by the cap and limiting the encroachment of the cap and shoreline revetment that will anchor the cap to a line in the tidelands that coincides with the ends of the two revetment walls approved under CDP No. 1-03-024, and (2) extending the cap and anchoring the perimeter of the shell midden area bayward of the proposed configuration to fully protect the midden.

Aligning the cap and anchoring revetment to more directly connect the two revetment walls approved under CDP No. 1-03-024 would reduce the amount of wetland fill required. However, this configuration is problematic for two reasons. First, if new shoreline revetment were to be installed directly in route with the previously installed revetment, it would have to cut across the most contaminated portion of the midden in the way runner area. Installation of revetment in this area potentially could mobilize highly contaminated pollutants such as PCP/dioxins into bay waters. Furthermore, installing revetment in this area could compromise future cleanup plans for the area, since the proposed soil excavation in this area is only an interim measure to remove some, but not all, of the most contaminated soils from the area. The proposed shoreline revetment configuration skirts the edge of the most contaminated soils around the way runner area based on analytical sampling results (see Exhibit No. 7). Second, a more linear alignment of the cap and revetment to more directly connect the two revetment walls approved under CDP No. 1-03-024 would necessitate the removal of the existing bulkhead structure, which is problematic. The existing bulkhead consists of a concrete perimeter foundation of unknown footing. The existing bulkhead is situated atop contaminated midden material, and its removal could both damage the midden and mobilize contaminated sediments into bay waters. Additionally, repair of the existing bulkhead is necessary to implement the construction activities associated with protecting the midden structure and cleaning up the site as proposed.

The Commission also considered an alternative shoreline revetment configuration whereby revetment would be installed at the perimeter of the shell midden area bayward of the proposed configuration to fully protect the midden structure. However, such a configuration is problematic because the existing shell midden, which is up to 14 feet below ground surface, extends well below the mean high water line. Thus, this alternative configuration would result in the reclamation of a significant area of intertidal bay habitat and even more wetland fill than proposed.

Therefore, the Commission finds that installing the proposed new protective cap and anchoring revetment in a more linear configuration (directly through the way runner area and across the existing bulkhead area) or more bayward than currently proposed (to protect the entire midden structure, including the portion currently under intertidal bay habitat) would have significant impacts to coastal resources that would be inconsistent with Section 30231's mandate to maintain and improve water quality for the protection of organisms and human health, and/or inconsistent with the requirements of Section 30233 that fill can only be approved where there is no feasible less environmentally damaging alternative. Therefore, placing the protective cap and anchoring revetment in a different configuration is not a feasible alternative that is consistent with all Chapter 3 policies.

(c) "No Project" Alternative

The proposed protective cap and anchoring revetment will serve to sequester residual contaminated sediments on site (rather than allowing them to leach out into bay waters)

until a final site cleanup plan can be developed and implemented. Without the implementation of the proposed site cleanup plan and installation of the proposed shoreline revetment, contaminated soils will continue to erode into bay waters. Additionally in its approval of CDP No. 1-03-024, the Commission found that the "no project" alternative would not provide any protection of the shell midden/village site from continued bluff erosion. The same is true for the current proposed shoreline revetment. Without any protection, the shell mound will continue to be directly damaged during each winter storm season. Since the Tuluwat village site is of substantial importance as an archeological, historical, cultural, and educational resource, the loss of the shell mound and the artifacts and burial remains it contains would be a significant loss to both the Wiyot Tribe and the people of California.

Therefore, the Commission finds that the "no project" alternative would have significant impacts to coastal resources that would be inconsistent with Section 30231's mandate to maintain and improve water quality for the protection of organisms and human health. Therefore, the "no project" alternative is not a feasible alternative that is consistent with all relevant Chapter 3 policies.

Conclusion

As discussed above, none of the identified alternatives to the proposed project would be both feasible and consistent with all relevant Chapter 3 policies. The Commission further finds that based on the alternatives analysis above, the proposed project is the least environmentally damaging feasible alternative, and therefore the project is consistent with the requirements of Section 30233(a) that the proposed fill project has no feasible less environmentally damaging alternative.

4. Conflict Resolution

After establishing a conflict among Coastal Act policies, Section 30007.5 requires the Commission to resolve the conflict in a manner that is on balance most protective of coastal resources.

In this case, the Commission finds that the impacts on coastal resources from not constructing the project would be more significant than the project's wetland impacts. Denying the project because of its inconsistency with Section 30233 would avoid a net increase of wetland fill of approximately 7,850 square feet. However, it must be noted that approximately 5,530 square feet of this area consists of highly contaminated soils, which are proposed for removal. Furthermore, the applicant proposes to use permeable pavers atop the clean fill placed in this area to allow colonization by salt-tolerant marsh species such as salt grass (*Distichlis spicata*) and pickleweed (*Salicornia* sp.). The 390 of fill associated with the proposed shoreline revetment and associated RSP is necessary to contain residual contamination on site as well as protect the archaeological resource from further erosion. In addition, only temporary fill impacts will occur to the approximate 1,930-square-foot area proposed for the temporary causeway corridor. By

mooring barges below the MLLW line and using the temporary causeway for construction access to the site, the project will avoid impacts to environmentally sensitive eelgrass habitat.

Approving the development would eliminate the on-going water quality and habitat degradation resulting from the leaching of contaminants into the bay. The Commission finds that the improvements to water quality and the elimination of avoidance of contamination of the area would be more protective of coastal resources than the impacts on wetland habitat from the proposed fill.

As discussed above in Finding IV-E (Enhancement of Water Quality), to ensure that the water quality benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, the Commission attaches Special Condition Nos. 1 through 9. These conditions require that the applicant submit various final plans, prior to permit issuance for the review and approval of the Executive Director, including a final Interim Site Cleanup Plan, a final NPS/SWPPP, a final Spill Prevention, Control, and Countermeasure Plan, a final debris disposal plan, and a final revegetation plan for the site. Additionally, Special Condition No. 2 requires that the applicant carry out the project in accordance with various construction protocols to ensure the protection of coastal waters and wetlands, Special Condition No. 7 requires the permittee to conduct regular inspections of the site to monitor the effectiveness and condition of the cover and to document and remove any nonnative and/or invasive species that are identified, Special Condition Nos. 8 requires the permittee to notify Commission staff prior to site cleanup activities and to facilitate staff access to the site for the purpose of determining permit condition compliance, and Special Condition No. 9 requires the Tribe to submit results of confirmation sampling to the Executive Director for review and comment before project completion. The Commission finds that without Special Condition Nos. 1 through 9, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

H. Feasible Mitigation Measures

Section 30233 of the Coastal Act requires in part that filling, diking, or dredging in coastal waters only be allowed when feasible mitigation measures have been provided to minimize significant adverse environmental impacts.

Depending on the manner in which the proposed project is constructed and maintained, the development could have potential significant adverse effects on the wetland habitat and the project site environs by: (1) filling approximately 5,920 square-feet of wetlands (tidelands) from construction and placement of the protective cap and the anchoring shoreline revetment; (2) disturbing the sensitive eelgrass beds that exist in the intertidal area offshore of the island: (3) polluting coastal waters and estuarine aquatic fish and wildlife habitat with sediment, debris, or hazardous materials originating from the project; (4) planting of exotic invasive plant species in areas disturbed by construction or construction activities that foster the spread of potentially rare plant population; and (5)

using certain rodenticides that could deleteriously bio-accumulate in predator bird species.

1. Filling of Wetlands

The project involves the construction of a protective cap and an anchoring revetment over portions of the shell midden to sequester residual contaminants that are not proposed to be removed as part of the project and to also protect the midden from further tidal erosion. The project also involves the placement of fill in intertidal wetlands for construction of a temporary causeway to allow for construction access to the site at lower tides. A total of 7,850 square feet of tidelands would be filled.

The habitat values of the affected wetlands are, for the most part, insignificant. Much of the area in which the new fill would be placed is currently composed of a mixture of bivalve shell fragments, cobbles, and sand inter-layered with bay mud and silt fines of varying depth, and flotsam debris extending approximately 10 to 20 feet inland from the bay edge. This type of substrate is not utilized for spawning or forage area by fish, which instead prefer the eelgrass beds offshore in the bay from the project site. Similarly, because of the size of the sediments and the high-energy environment to which these materials are exposed, the sediments do not provide habitat for intertidal species such as Pacific mussels (*Mytilus trossulus*) and barnacles (*Balanus* sp.), razor clams (*Siliqua patula*), or geoduck clams (*Panope generosa*), fat innkeeper worms (*Urechis caupo*), or other benthic macro-invertebrates who prefer either consolidated rocky substrate, well-sorted sandy beaches or uniform mud flat materials. Additionally, the project is designed to allow for tidal action to continue to flow over portions of the cap, which will be planted with native salt marsh plants such as salt grass and pickleweed. Furthermore, the proposed fill for the construction causeway will be temporary and completely removed upon project completion. Therefore, the Commission finds that the adverse effects of the direct fill to be placed on wetland habitat are insignificant.

2. Impacts to Eelgrass

The project has the potential to adversely affect eelgrass. Eelgrass (*Zostera marina*) is a flowering plant that extends long rhizomes (roots) an average of 1.5 – 8 inches below the substrate from which the turions (stems) sprout with long, green blades (leaves). Eelgrass patches or "beds" thrive under particular conditions in protected coastal waters with sandy or muddy bottoms. Eelgrass beds are considered to be an environmentally sensitive habitat area (ESHA) worthy of protection because they function as important shelter and foraging habitat for a variety of fish and wildlife species. For example, black brant (*Branta bernicla nigricans*), small migratory geese, feed almost exclusively on eelgrass. In addition, eelgrass beds provide cover for juvenile fish, and in some locations serve as a spawning ground for herring. Anadromous fish species that may occur in Humboldt Bay include federally listed threatened and endangered salmonids including Coho salmon (*Oncorhynchus kisutch*), Chinook salmon (*O. tshawytscha*), and Steelhead trout (O. *mykiss*). Essential Fish Habitat (EFH) has been designated under the

Magnuson-Stevens Fishery Conservation and Management Act and includes those waters and substrates necessary for fish to spawn, breed, feed, or grow to maturity.

As part of the federal Clean Water Act Section 404 permitting process, the U.S. Army Corps of Engineers initiated an informal consultation with NOAA-Fisheries. NOAA-Fisheries indicated that the project would have negligible effects to Pacific salmonids and EFH.

The applicant completed an eelgrass survey for the project in June of 2008 (Exhibit No. 8). The survey found that a band of eelgrass beds occur fairly consistently throughout the lower slopes of the site, straddling the line of Mean Lower Low Water (MLLW). Additionally, patches were detected between the bulkhead and the MLLW line.

Potential impacts to eelgrass could occur as a result of construction activities from sedimentation. Sediment could adversely impact eelgrass by settling on and shading out plants, thereby slowing growth. The Commission attached various special conditions described above in Finding IV-E to address erosion and sediment control. Special Condition No. 2 guards against construction-related water quality impacts by requiring the permittee to comply with various construction responsibilities, including, among others, the use of silt screens, straw bales, coir-rolls, coffer damming, and/or water bladder walls appropriate for use in estuary and intertidal settings around the perimeter of the area to be graded, installing revetment materials only at low tide, etc. Special Condition No. 3 requires submittal of a final Non-point Source/Storm Water Pollution Prevention Plan. Special Condition No. 6 requires submittal of a final revegetation plan for the entire area disturbed by grading activity, including the area proposed for capping with permeable pavers.

Eelgrass impacts also could occur as a result of the installation of the temporary causeway. If the causeway were to be placed on top of eelgrass, plants could be crushed and damaged, along with any other marine resources (such as sensitive fish species) using the beds as habitat. Additionally, the barges proposed for transport of construction equipment to the site could impact eelgrass if the boats were to rest against the mudflats, crushing and damaging plants and associated marine resources. The applicant is proposing to avoid eelgrass impacts by (1) placing the temporary causeway between identified beds (Exhibit Nos. 4 and 5), and (2) limiting the mooring of barges to at least 20 feet bayward of the MLLW line (Exhibit Nos. 4 and 5). To ensure that eelgrass is avoided as proposed, the Commission attaches Special Condition No. 11. This condition requires that the applicant submit, prior to permit issuance for the review and approval of the Executive Director, a final plan for the protection of eelgrass beds in the project vicinity, which demonstrates that eelgrass beds in the project area shall be delineated with floating buoys prior to commencement of construction, and equipment shall operate outside the delineated eelgrass beds at all times. Grounding and direct contact of the barge with eelgrass beds shall be avoided at all times. No propellers, anchors, construction equipment, or piles shall be dragged over the mudflats or eelgrass beds.

3. Water Quality

As discussed in Finding IV-E above, the project is designed to improve water quality, and the impacts of construction on water quality will be adequately mitigated as conditioned.

4. Introduction of Exotic Invasive Plants

The use of non-invasive plant species adjacent to environmentally sensitive habitat areas (ESHAs) is critical to protecting such areas from disturbance. If invasive species are planted adjacent to an ESHA they can displace native species and alter the composition, function, and biological productivity of the ESHA.

The applicant proposes to seed all areas of bare fill with a blend of native perennial grasses and forbs including mostly red fescue (*Festuca rubra*) with lesser amounts of tufted hair grass (*Deschampsia cespitosa*) and yarrow (*Achillea millefolium*). Seed material is proposed to be obtained from Freshwater Farms, a local native plant nursery that specializes in locally derived plant material. The applicant proposes to use Hydro-Seed technology to apply the seed if possible; if not, the seeding will be done by hand, lightly raked in, and mulched with seedless rice straw. The project also proposes to plant native species such as salt grass and pickleweed in between permeable pavers on the protective cap that is to be installed in the way runner area.

To assure that the biological integrity of the project area is maintained, the Commission attaches Special Condition No. 6, which requires that the entire disturbed area shall be replanted with regionally appropriate native vegetation. The vegetation to be replanted shall be of local genetic stock, if available. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be installed or allowed to naturalize or persist on the site. Furthermore, no plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property

5. Use of Anticoagulant-based Rodenticides

To help in the establishment of vegetation, rodenticides are sometimes used to prevent rats, moles, voles, and other similar small animals from eating the newly planted saplings. Certain rodenticides, particularly those utilizing blood anticoagulant compounds such as brodifacoum, bromadiolone and diphacinone, have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/wildland areas. As the target species are preyed upon by raptors or other environmentally sensitive predators and scavengers, these compounds can bio-accumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species.

To avoid this potential cumulative impact to environmentally sensitive wildlife species, Special Condition No. 6 contains a prohibition on the use of such anticoagulant-based rodenticides.

Conclusion

Therefore, as proposed and further conditioned as described above, the Commission finds that feasible mitigation is included within the project design to minimize all significant adverse impacts associated with the proposed filling of coastal waters consistent with the mitigation requirements of Section 30233 of the Coastal Act.

I. Protection of Environmentally Sensitive Habitat Areas

Section 30240 of the Coastal Act states:

> *(a) Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*
>
> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

Coastal Act Section 30107.7 defines "environmentally sensitive area" as meaning:

> *…any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Section 30240(b) of the Coastal Act requires that development in areas adjacent to environmentally sensitive habitat areas (ESHA) shall be sited and designed to prevent impacts which would significantly degrade the ESHA and that development shall be compatible with the continuance of the adjacent ESHA. The proposed project would occur adjacent to various types of environmentally sensitive habitat for sensitive plants, wildlife, and fish species. Each sensitive habitat is discussed separately below.

Sensitive Plant Species

The proposed project involves development activities in proximity to irregularly flooded saltmarsh habitat on the adjacent island areas. The condition of the saltmarsh vegetation habitat on Indian Island in the vicinity of the project was analyzed in botanical analysis prepared in 2001 and 2002 by Botanist Annie L. Eicher. Additional endangered and threatened vegetation inventory work for listed plant species was also completed by Mad

River Biologists as part of the wetland delineation conducted during the summer of 2002. In summary, this information indicates that the eastern half of Indian Island (which includes the Tuluwat site) is heavily hydrologically modified by the drainage ditching & diking and associated land uses of the past, and has since been in a very gradual ecological recovery. These studies found several rare saltmarsh plant species on the upland portions of the island, including Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtiensis*), Point Reyes bird's beak (*Cordylanthus maritimus* ssp. *palustris*), and an outcropping of a rare pteridophyte, possibly either bog club-moss (*Lycopodiella inundatum*) and/or running pine (*Lycopodium clavatum*). All of these rare plant occurrences are located several hundred feet from the development site, at higher elevations on the island, and are not associated with the project's estuarine edge setting.

The Commission thus finds that the sensitive plant ESHA adjacent to the development would be protected against any significant disruption of habitat values, and only uses dependent on those resources would be developed within those areas. In addition, the proposed development has been sited and designed to prevent impacts that would significantly degrade environmentally sensitive areas, and would be compatible with the continuance of those habitat areas.

Sensitive Wildlife Species

The EIR prepared for the Tuluwat Restoration Project identified two sensitive animal species with the potential to be impacted by the proposed activities. These include Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) and Black-capped chickadee (*Poecile atricapillus*).

Townsend's big-eared bat is a federal and a California Species of Concern whose distribution in Humboldt County is poorly understood. The EIR identified potential habitat for the bat in the proposed project area in the form of abandoned buildings, which the bats may use as roost sites. The applicant proposes to demolish five abandoned structures on the upland areas of the site including the secondary residence, the paint shed, the shed next to the Butler building, the winch shed, and the chicken coop. The demolition of these structures would result in the destruction of potential Townsend's big-eared bat habitat and disturb and/or kill any bats using the structures as roost sites.

Black-capped chickadee is on the California Department of Fish and Game's "Watch List," which is reserved for those species that are facing population declines and/or threats such as habitat loss on their breeding and wintering grounds, or with limited geographic ranges. The EIR identified the species as having the potential to occur within upland habitats of the project area. Impacts to the bird's breeding habitat could result from vegetation removal for the proposed installation of the protective soil/geotextile cap across the 1.5-acre site.

To ensure that impacts to any sensitive species of roosting bats and nesting birds in the project area are avoided, the Commission attaches Special Condition No. 10. This

condition requires that prior to construction activities the applicant submit, for the review and approval of the Executive Director, the results of a bat and bird survey conducted by a qualified biologist(s), which demonstrates that the buildings proposed for demolition and the vegetation proposed for clearing have been surveyed by a qualified biologist in consultation with the California Department of Fish and Game for the presence of active nesting habitat of Black-capped chickadee and active roosting habitat of Townsend's big-eared bat. The condition requires that any sensitive species habitat located in areas of potential impact shall be avoided.

Conclusion

Therefore, the Commission finds that the project, as conditioned, has been sited and designed to prevent impacts which would significantly degrade environmentally sensitive habitat areas and that development shall be compatible with the continuance of the adjacent ESHA consistent with Coastal Act Section 30240(b).

J. Protection of Visual Resources

Coastal Act Section 30251 requires permitted development to be designed and sited to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas.

There are views of the site from State Route 255, from the easternmost portions of the paths within the City of Eureka's Waterfront Park, and from the waters of Humboldt Bay. However, consistent with Section 30251, the project as designed and sited would not significantly obstruct any views to or along the ocean and the Humboldt Bay estuary. The proposed development would not rise appreciably above the existing grade in a manner that would block views.

The proposed project as sited and designed would also not result in any appreciable alteration of any landforms. Although the project involves a certain amount of grading and excavation to remove the contaminated soils and install the shoreline protective works, the proposed development would not significantly alter the shape and form of the island shoreline from that that currently exists at the site.

The shoreline revetment that the applicant is proposing to install will connect two segments of existing shoreline revetment totaling 400 lineal feet authorized by the Commission under CDP No. 1-03-024. The proposed revetment will be 130 lineal feet of carbon reinforced fiberglass sheet piling (installed to a depth of 4 to 6 feet) installed as footing to the shoreline portion of the proposed protective soil/geoweb cover described above (Section IV-D).

The applicant has not provided plans for the new sheet piling to be installed, so it is unknown what its final height will be, what materials and design it will have, and other

details. If not properly designed to blend with the surrounding area, it is possible that new sheet piling could lead to visual impacts either by being constructed with reflective materials that cause glare, inappropriate colors, or designed to stand out so that public views to the surrounding bay environment are impacted. Therefore, the Commission attaches Special Condition No. 12. This condition requires that the applicant submit, prior to permit issuance for the review and approval of the Executive Director, sheet pile design and material plans, including cross sectional plans, demonstrating that the new sheet piling will match the materials approved under CDP No. 1-03-024 or otherwise blend with the island bank materials and with the character of the surrounding estuary.

Therefore, the Commission finds that the proposed development, as conditioned, will protect views to and along the ocean and scenic coastal areas, minimize the alteration of landforms, and be compatible with the character of the surrounding area consistent with Section 30251 of the Coastal Act.

K. Public Access & Coastal Recreational Opportunities

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions.

Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety.

In applying Sections 30211 and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

Although one can reach Indian Island by boat, there is no vehicular access to the island and the island is not generally open to public recreational use. As discussed in Finding Section IV.D above, the proposed development entails the construction of a shoreline revetment structure along a portion of the shoreline of Indian Island in Humboldt Bay, the cleanup of contaminated soils on the site, and the installation of a permeable cap to protect the culturally sensitive shell midden. The project as designed will not result in any significant adverse impact on public access. Due to its location in the middle of Humboldt Bay rather than on the open coast, the island is not surrounded by a sandy beach. Although areas immediately adjacent to portions of the eroding bank edge are built up with shell fragments eroded by storm surge from the shell mound, the shell

fragments overlie and are mixed within mudflat rather than overlying a sandy beach. The mudflats around the island do not provide significant recreational opportunities such as a sandy beach would. Thus, armoring the shell mound will not result in the loss of recreational beach area, either by the displacement of the area that the revetment will occupy or by halting the establishment of any new potential beach area. Therefore, the Commission finds that the proposed project as conditioned, which does not include substantial new public access, is consistent with the public access policies of the Coastal Act.

L. Geologic Stability

The Coastal Act contains policies to assure that new development provides structural integrity, minimizes risks to life and property in areas of high flood hazard, and does not create or contribute to erosion. Section 30253 of the Coastal Act states in applicable part:

> *New development shall:*
>
> (l) *Minimize risks to life and property in areas of high geologic, flood, and fire hazard*.
>
> (2) *Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.* [emphasis added]

Coastal Act Section 30253 requires the project to assure long-term stability and structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. This requirement is particularly relevant to the proposed project given the dynamic shoreline environment within which the proposed project would be placed. Since hydraulic forces increase with the square of the water height, a small increase in water depth and wind wave height can cause a significant increase in wave energy and potential structural damage. Thus, a small rise in tidal waters can expose bay front development to increased live and static hydraulic forces associated with inundation, scour, and wave attack.

The project would involve construction activities along the banks of Indian Island within Humboldt Bay, the second largest estuary in California. Although the currents generated on the bay by tidal flood and flow can be substantial, especially in areas in proximity to Humboldt Bay's relatively narrow entrance, typical tidal velocities in the shoreline areas adjacent to the Middle Channel offshore of the site are much less, estimated at approximately 0.6 feet/second. In addition, being situated on the leeward side of the island with respect to prevailing storm wind direction, the site is exposed to less intense storm surge, generally not exceeding two feet in wave height.

The proposed revetment will tie in to the shoreline revetment approved by the Commission under CDP No. 1-03-024. To ensure that the approved revetment would be designed to withstand these storm surge forces, the Tribe contracted civil and geo-technical engineering investigations for the project, which found that the revetment was adequately designed to withstand the hydraulic forces it would be subject to at the project site. As discussed above in Finding IV-J (Visual Resources), Special Condition No. 12 requires the applicant to submit, prior to permit issuance for the review and approval of the Executive Director, final design and material plans for the proposed revetment. In this way, the Commission will be able to verify that the new revetment will be of the same design and materials as the revetment approved under CDP No. 1-03-024.

The project, as conditioned, would assure stability and structural integrity, primarily because the revetment has been designed with site-specific conditions taken into account, utilizing established design principles to ensure the structure can adequately withstand the tidal and stormwater forces they would be exposed to during the economic lifespan of the improvements. Notwithstanding the relative degree of insulation of the project as designed from geologic hazards, the applicant is proposing to construct development that would be located in an area subject to hazards from outflanking, wave uprush, flooding, and other geologic hazards. Therefore, Special Condition No. 13 requires the applicant to assume the risks of extraordinary geologic hazards of the property and waive any claim of liability on the part of the Commission. Given that the applicant has chosen to implement the project despite these risks, the applicant must assume the risks. In this way, the applicant is notified that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand hazards.

Therefore, the Commission finds the project as conditioned would minimize risks to life and property in areas of high geologic and flood hazard, and assure stability and structural integrity of the site and its surroundings so that the need for further or additional shoreline protective works would be avoided, as required by Section 30253.

M. Protection of Archaeological Resources

Section 30244 of the Coastal Act states the following:

> *Where development would adversely impact archeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.*

Indian Island is located in the central portion of Wiyot ancestral territory and is the spiritual center of the Wiyot universe. The Wiyot people and their ancestors have inhabited Indian Island and the land around Humboldt Bay for over 1,000 years. Two Wiyot villages were known to have existed on the island; Tuluwat (CA-HUM-67) and Etpidol-wotperol (CA-HUM-68). The first recorded Euro-American settlement of Indian

Island occurred in 1858. On February 26, 1860, settlers massacred an estimated 180 Wiyot people gathered for the World Renewal Ceremony at the Tuluwat village site. Beginning in 1861, land reclamation activities were initiated to increase the amount of pasture and farmland on Indian Island. Between 1870 and approximately 1990, a ship repair yard with a drydock and marine ways, plus other structures, was established and operated on CA-HUM-67 in the subject project area.

Archaeological fieldwork and excavation began on the Tuluwat shellmound in 1913. In 1964, the 6-acre Tuluwat shellmound was designated a National Historic Landmark ("Gunther Island Site 67") by the U.S. Department of the Interior. As discussed in the above Findings (see Section IV-A), for the most part, structures of the Tuluwat village that were still visible in 1913 are now gone, having been destroyed or carried away by wind, waves, and unauthorized excavations and looting. Before its destruction, the site consisted of a large shellmound encompassing approximately 6 acres and attaining depths of up to 14 feet above Mean High Water. The village consisted of eleven house pits accommodating approximately 50 full-time residents, numerous burial plots and funereal remains, and other cremated and inhumed cultural artifacts. As one of the largest Wiyot villages, Tuluwat typified the late prehistoric period and was instrumental in outlining the prehistory of the northern California coast, especially with regard to the stylization of the stone-carved burial accompaniments, its concentration of large woodworking tool relics, and the unique presence of fired clay figurines, collectively referred to as the "Gunther Phase" or "Pattern." As a National Historic Landmark, the site is significant at the national level for (1) the representative nature and the role the site has played in the development of the discipline of archaeology; (2) the research value of information still contained in the site; and (3) the site's importance as an ethnographic Wiyot village and ceremonial center and as the scene of the infamous 1860 Wiyot massacre.

The proposed project involves removing a portion of the midden for the purposes of the interim cleanup of the contamination, which is an issue that has been carefully considered during the project's CEQA and permitting processes. As part of the U.S. Army Corps of Engineers permitting process pursuant to the provisions of Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 106 of the National Historic Preservation Act, the Corps, the California State Historic Preservation Officer (SHPO), and the Tribe executed a Memorandum of Agreement (MOA), which stipulates various measures and protocols to properly handle and to minimize adverse impacts to sensitive archaeological resources in the area. These measures include having cultural monitors and professional archaeologists on site for all excavation and ground disturbing activities, the cultural monitors/archaeologists have the ability to temporarily halt excavations to investigate finds and recover significant data using hand tools and more fine-tuned instruments, allowing the archaeological team to screen and/or inspect soils to the extent feasible to recover and document diagnostic artifacts and sensitive findings, appropriate procedures to follow in the event that Native American burials or other sensitive finds are discovered, and reporting requirements. Additionally, as part of the CEQA process, the City of Eureka, as the lead agency, prepared an Environmental Impact Report and Mitigation Monitoring and Reporting Program (MMRP), which

stipulates additional mitigation measures to reduce the project's impacts to a less than significant level. These include (see Exhibit No. 9), among others, (1) requiring the Tribe to implement the provisions stipulated by the MOA described above (which is a confidential document); (2) using only low ground pressure tracked equipment at the project site to minimize disturbance to the archaeological deposit; (3) re-interring cultural resources unearthed during excavation and removal of contaminated material directly back into soils on site only if dioxin levels are demonstrated (to the satisfaction of the North Coast Regional Water Quality Control Board) to be at or below naturally occurring background dioxin levels for the Humboldt Bay Area; and (4) only re-interring unearthed cultural resources with suspected or confirmed dioxin levels above naturally occurring background levels back into the soil on site if first placed in a waterproof stainless steel container deemed acceptable and sufficient by the NCRWQCB.

As the proposed project would greatly reduce the most significant contamination on the site while only removing a limited volume of the midden material and providing a cap and revetment for the protection of the midden material that remains, the Commission finds that the project strikes an appropriate balance between the need to protect the resource and the need to cleanup the contamination.

To ensure that reasonable mitigation measures have been provided to minimize impacts to archaeological resources consistent with Coastal Act Section 30244, the Commission attaches Special Condition No. 14. This condition requires that the permittee undertake development in accordance with the protocols and measures of the MOA and MMRP (Exhibit No. 9), as summarized above.

Therefore, the Commission finds that the project, as proposed and conditioned, is consistent with Coastal Act Section 30244, as reasonable mitigation measures have been provided to minimize impacts to archaeological resources.

N. Other Agency Approvals

The development requires review and approval by the U.S. Army Corps of Engineers, the North Coast Regional Water Quality Control Board, and the Humboldt Bay Harbor, Recreation, and Conservation District. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps, the Board, and the Bay District is the same as the project authorized herein, the Commission attaches Special Condition Nos. 15, 16, and 17, which require the applicant to submit to the Executive Director evidence of the agencies' approvals of the project prior to the commencement of construction (for the Corps' approval) and prior to permit issuance (for the Board's and Bay District's approvals). The conditions require that any project changes resulting from the other agencies'

approvals not be incorporated into the project until the applicant obtains any further necessary amendments to this coastal development permit.

O. Waiver of Application Fee

The applicant has requested that the Commission waive the application fee for the permit request. The applicant states that the proposed project is entirely funded by public grant funds, and at the time that the applicant applied for those funds, the Commissions fee schedule listed the filing fee for the development as much lower than the current fee.

Pursuant to Section 13055(a) of the Commission's regulations, the permit application fee in this case is eight thousand dollars ($8,000). Prior to the recent change to the Commission's application fee schedule, which went into effect on March 17, 2008, the application filing fee for the proposed development would have been two thousand dollars ($2,000).

As a general rule, the Commission does not support application fee waiver requests. The Commission's fee schedule is not directly structured for "at-cost" recovery of the staff time actually spent on applications, and thus tends to charge applicants less than the amount of the Commission resources that are expended in processing an application. In other words, application fees are already generally lower than the amount it costs the Commission to process the application. In part, this is in recognition of the larger public service being provided to the people of the State, including applicants, for a public airing and debate regarding proposed projects in the coastal zone.

In this particular unique case, however, the Commission finds that as (a) the proposed project is necessary to prevent the ongoing degradation of the public resources of Humboldt Bay by removing contaminated sediments and sequestering residual contaminants that adversely affect Humboldt Bay water quality and habitat; (b) the proposed project is funded entirely by public agency grant funds, and (c) when applying for the subject grant funds the applicant did not anticipate the significant increase to the Commission's application fee schedule, the Commission hereby directs that the permit application fee for CDP No. 1-08-017 be reduced to two thousand dollars ($2,000), which is what the filing fee was at the time that the applicant applied for the public grant funds that are supporting the proposed project. The Commission attaches Special Condition No. 18 to require that the applicant submit the appropriate fee prior to permit issuance.

P. California Environmental Quality Act

The City of Eureka acted as the lead agency for this project, and as such it prepared an Environmental Impact Report for the Tuluwat Restoration Project (SCH # 2004122022). The Draft EIR was published in May 2007, and the Final EIR was published in August 2007.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of coastal development permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. Those findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Assessor's Parcel Map
4. Preliminary Construction Plans
5. Wetland Impacts
6. May 2008 Photos of Bulkhead
7. Known Areas of Soil Contamination
8. 2008 Eelgrass Survey Results
9. CEQA Archaeological Resources Mitigation Measures
10. Interim Site Cleanup Plan, March 2006
11. Debris Disposal Plan for Non-Regulated Solid Waste
12. Draft Non-point Source/Storm Water Pollution Prevention Plan
13. Draft Spill Prevention, Containment and Countermeasure Plan
14. Memo from Dr. Jack Gregg, Water Quality Supervisor

APPENDIX A

STANDARD CONDITIONS

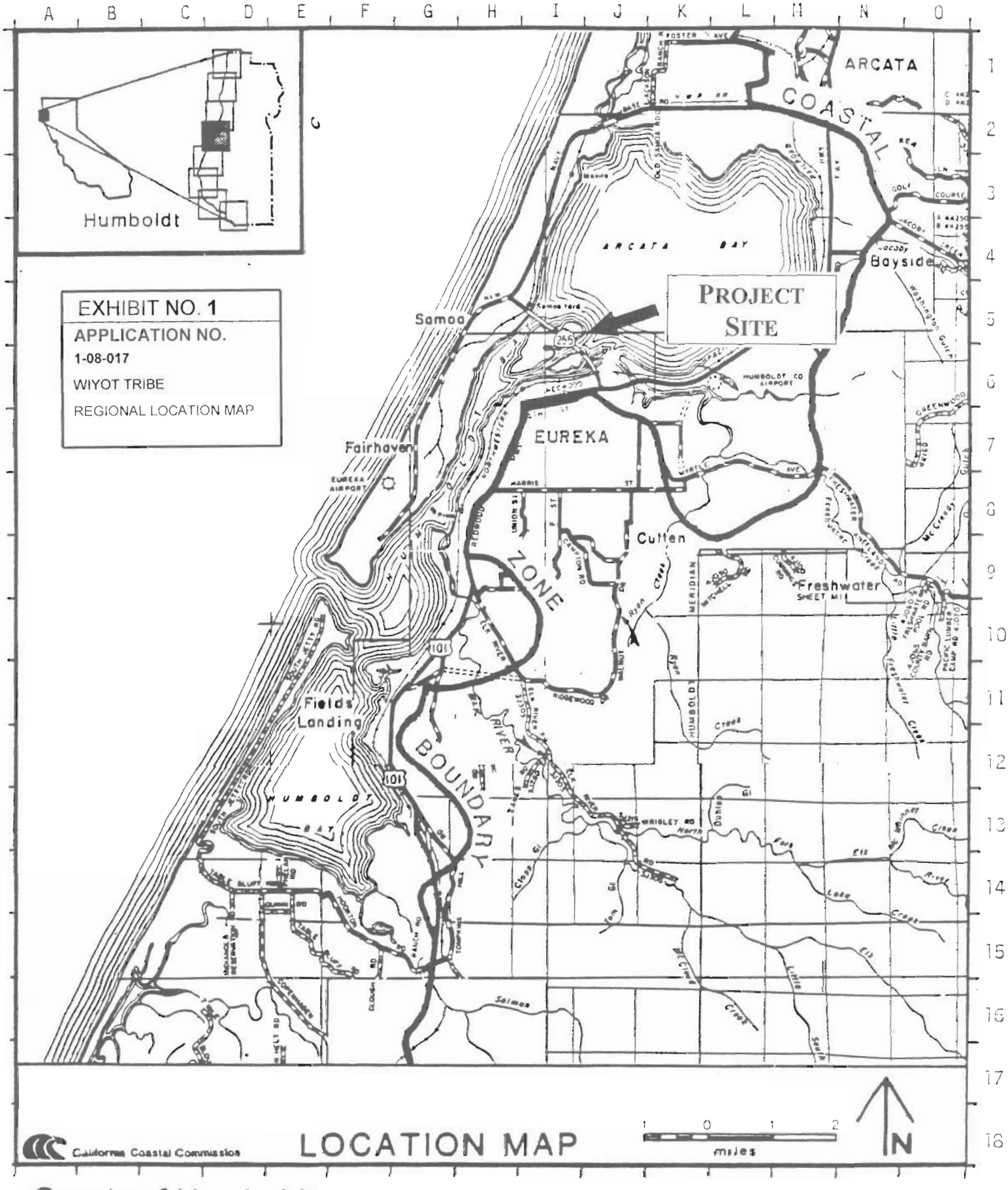
1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.


Humboldt
EXHIBIT NO. 1
APPLICATION NO.
1-08-017
WIYOT TRIBE
REGIONAL LOCATION MAP
PROJECT SITE
ARCATA
COASTAL
ZONE
BOUNDARY
EUREKA
Samoa
Fairhaven
Cutten
Freshwater
Bayside
Fields Landing
HUMBOLDT BAY
ARCATA BAY
HUMBOLDT CO AIRPORT
EUREKA AIRPORT
Salmon
LOCATION MAP
California Coastal Commission
miles
N
County of Humboldt

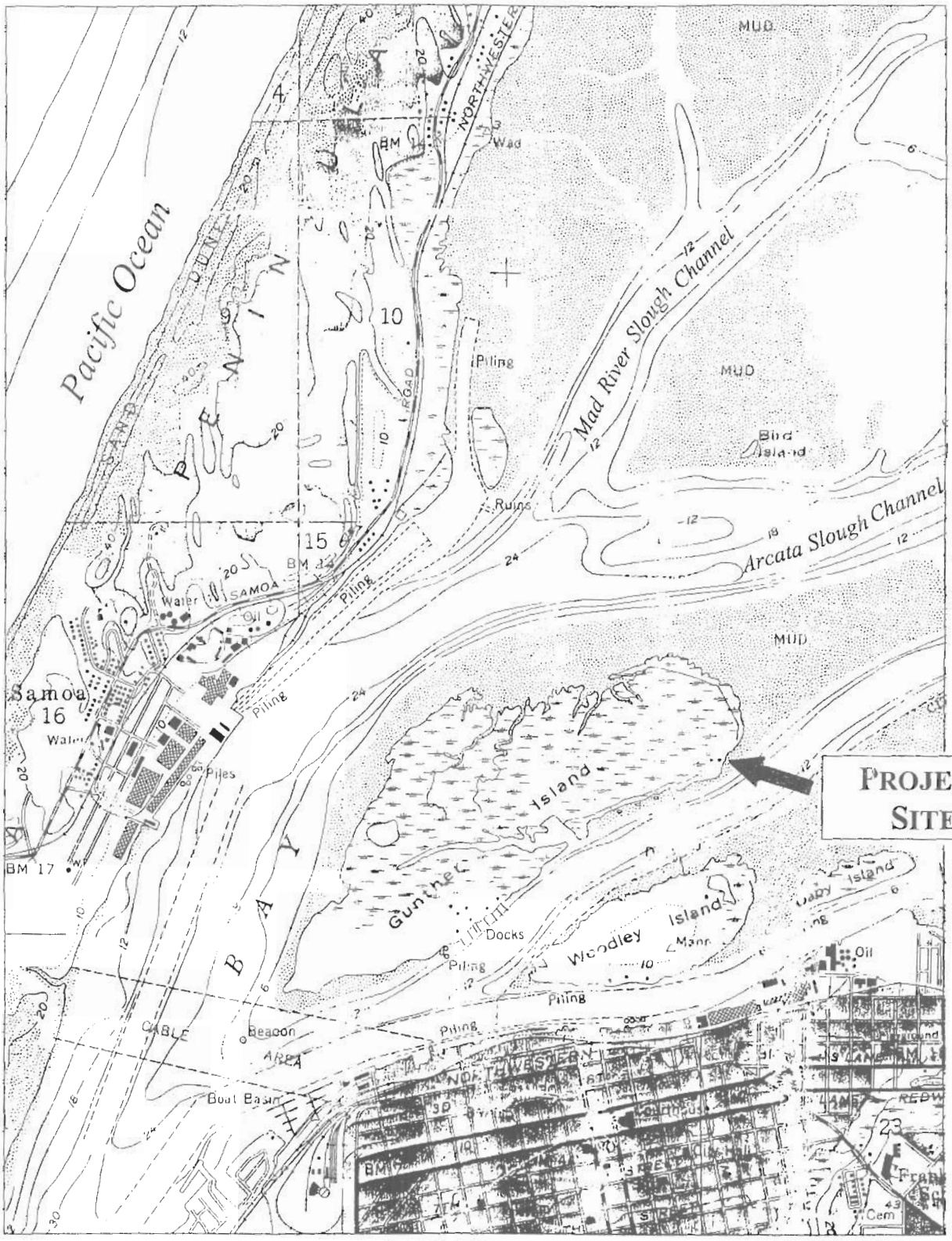


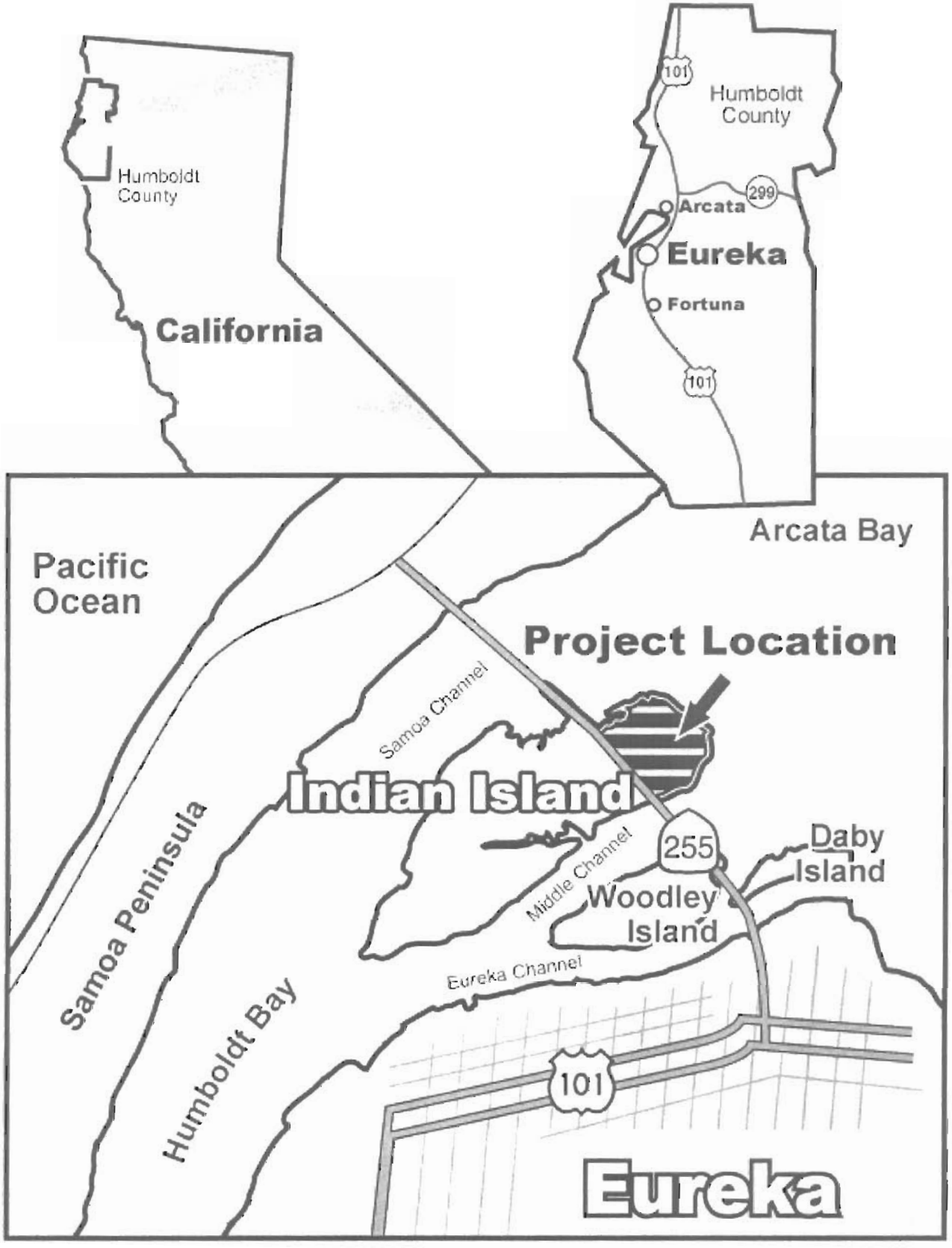
EXHIBIT NO. 2

APPLICATION NO.

1-08-017

WIYOT TRIBE

VICINITY MAP (1 of 2)


Humboldt
County
California
101
Humboldt
County
299
Arcata
Eureka
Fortuna
101
Arcata Bay
Pacific
Ocean
Project Location
Samoa Channel
Indian Island
Samoa Peninsula
Humboldt Bay
255
Middle Channel
Daby
Island
Woodley
Island
Eureka Channel
101
Eureka

2-42

PTN SECS 15,16,21 & 22 T5N,R1W H.B.& M. 405-01

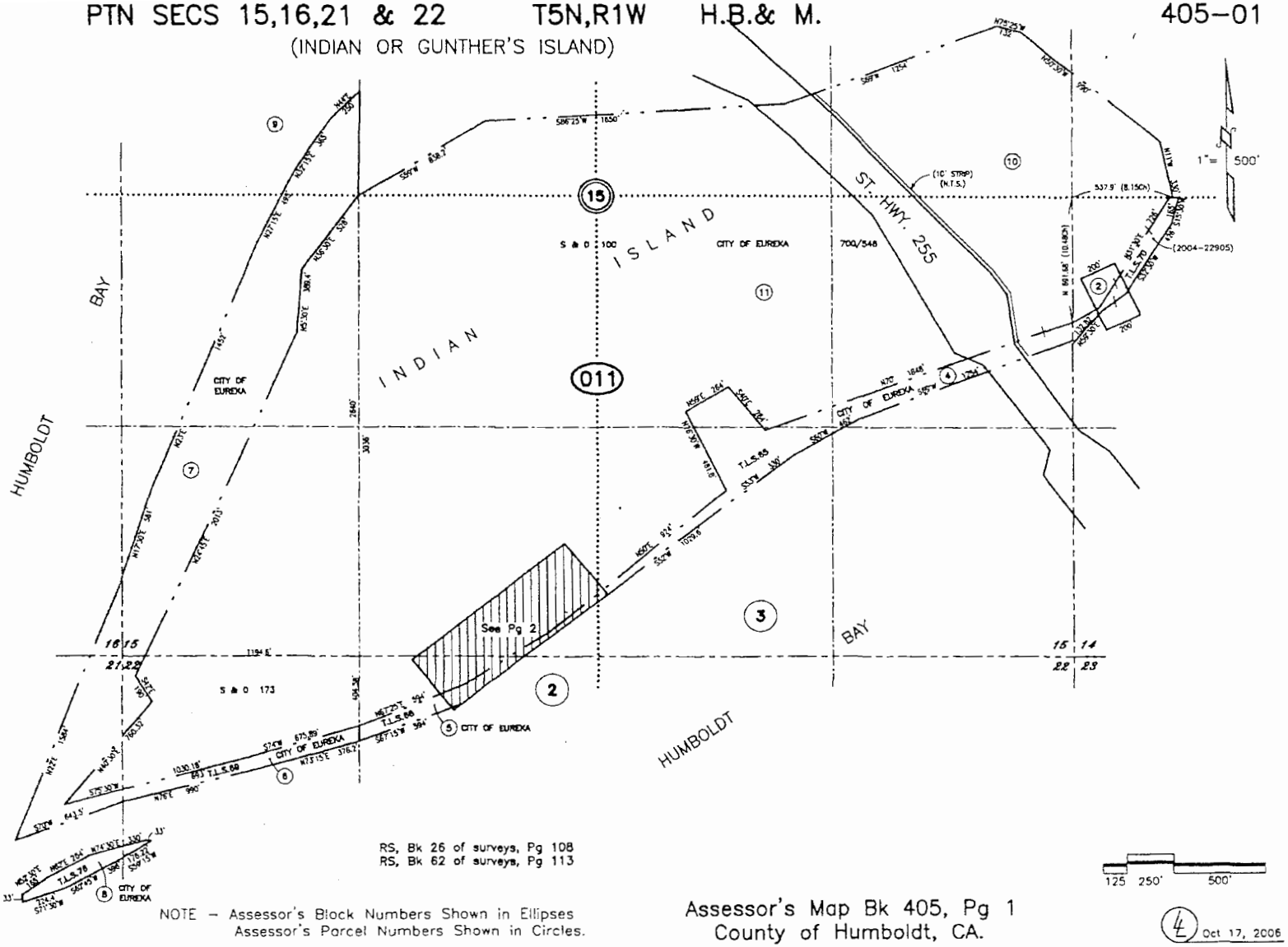
(INDIAN OR GUNTHER'S ISLAND)

EXHIBIT NO. 3

APPLICATION NO. 1-08-017

WIYOT TRIBE

ASSESSOR'S PARCEL MAP



ASSESSOR'S PARCEL MAP

1. THIS MAP WAS PREPARED FOR ASSESSMENT PURPOSES ONLY.
2. NO LIABILITY IS ASSUMED FOR THE ACCURACY OF THE DATA SHOWN.
3. ASSESSOR'S PARCELS MAY NOT COMPLY WITH LOCAL LOT-SPLIT OR BUILDING SITE ORDINANCES.

RS, Bk 26 of surveys, Pg 108
RS, Bk 62 of surveys, Pg 113

NOTE – Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles.

Assessor's Map Bk 405, Pg 1
County of Humboldt, CA.

125 250' 500'

4 Oct 17, 2006

CONSTRUCTION PLANS

PHASE I, II, AND III
OF THE
WIYOT TRIBE
TULUWAT VILLAGE RESTORATION SITE

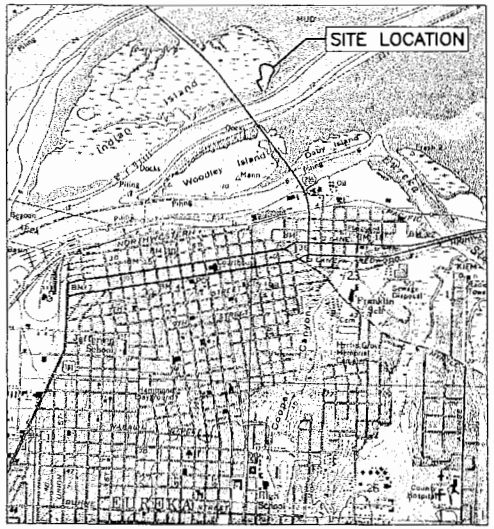
INDIAN ISLAND
EUREKA, CA

PREPARED BY:

SHN

JUNE 2008

VICINITY MAP
NTS



LOCATION MAP
NTS

APPROVALS

MIKE FOGET, P.E. — PROJECT ENGINEER
SHN CONSULTING ENGINEERS AND GEOLOGISTS, INC.

INDEX OF SHEETS

SHT	DWG	TITLE
1	G-1	COVER SHEET
2	G-2	STANDARD ABBREVIATIONS AND LEGENDS
3	C-1	DEMOLITION AND EXCAVATION PLAN
4	C-2	SITE PLAN AND DETAILS
5	C-3	SITE GRADING PLAN
6	C-4	CAPPING PLAN SECTION AND DETAILS
7	C-5	BULKHEAD PLAN SECTIONS AND DETAILS
8	C-6	PIER PLAN PROFILE AND DETAILS
9	C-7	PIER DETAILS

EXHIBIT NO. 4
APPLICATION NO.
1-08-017
WIYOT TRIBE
PRELIMINARY CONSTRUCTION PLANS FOR PHASE I ACTIVITIES (1 of 8)

PRELIMINARY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

SHN
CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501
(707)441-8855
FAX (707)441-8877

NO	DATE	REVISION	BY

DSGN JJL
DR RDW/CDN
CHK LKS
APVD

WIYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

COVER SHEET

DRAWING G-1
SHT 1
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/23/2008 2:15 PM LSTRIANE; PLOTTED: 6/23/2008 2:32 PM LISA K. STRIANE
J:\2004\004178\001\004178-100-GEN-PLAN.dwg

ABBREVIATIONS

A

ABN — ABANDON
ABS — ACRYLONITRILE-BUTADIENE-STYRENE
AB — ANCHOR BOLT, AGGREGATE BASE
AC — ASPHALTIC CONCRETE
ACP — ASBESTOS CEMENT PIPE
ACI — AMERICAN CONCRETE INSTITUTE
ADJ — ADJUSTABLE
AGGR — AGGREGATE
AISC — AMERICAN INSTITUTE OF STEEL CONSTRUCTION
AL — ALUMINUM
ALT — ALTERNATE
APPROX — APPROXIMATELY
ARCH — ARCHITECTURAL
ASTM — AMERICAN SOCIETY FOR TESTING & MATERIALS
AUTO — AUTOMATIC
AUX — AUXILIARY
@ — AT

B

BC — BEGIN CURVE
BCR — BEGIN CURB RETURN
BD — BOARD
BF — BLIND FLANGE
BFV — BUTTERFLY VALVE
BK — BOOK OR BACK
BLDG — BUILDING
BM — BENCH MARK, BEAM
BOT — BOTTOM
BRG — BEARING
BTWN — BETWEEN
BV — BALL VALVE
BVC — BEGINNING OF VERTICAL CURVE
BW — BACK OF WALK

C

C — CHANNEL (STRUCTURAL SHAPE)
CATV — CABLE TELEVISION
CB — CATCH BASIN
CEIL — CEILING
CFM — CUBIC FEET PER MINUTE
CFS — CUBIC FEET PER SECOND
CHEM — CHEMICAL
CI — CAST IRON
CIP — CAST IRON PIPE
C.I.P. — CAST IN PLACE
CJ — CONSTRUCTION JOINT
CLR — CLEAR
℄ — CENTERLINE
CMP — CORRUGATED METAL PIPE
CMU — CONCRETE MASONRY UNIT
CTSK — COUNTERSINK
CO — CLEANOUT
COL — COLUMN
CONC — CONCRETE
CONT — CONTINUOUS OR CONTINUED
COORD — COORDINATE
CPLG — COUPLING
CRS — COLD ROLLED STEEL
CTR — CENTER
CU — CUBIC
CU FT — CUBIC FEET
CV — CHECK VALVE
CW — COLD WATER
CY — CUBIC YARD

D

° — DEGREE (ANGLE)
d — PENNY (NAIL SIZE)
DB — DISTRIBUTION BOX
DBL — DOUBLE
DF — DOUGLAS FIR
DI — DROP INLET OR DUCTILE IRON
DIA — DIAMETER
DIAG — DIAGONAL
DIM — DIMENSION
DMJ — DUCTILE IRON MECHANICAL JOINT
DIP — DUCTILE IRON PIPE
DET — DETAIL
DWG — DRAWING
D/W — DRIVEWAY

E

(E) — EXISTING
EA — EACH
EC — END CURVE
ECR — END CURB RETURN
EF — EACH FACE
EFL — EFFLUENT
EL — ELBOW
ELEC — ELECTRIC OR ELECTRICAL
ELEV — ELEVATION
ENGR — ENGINEER
EP — EDGE OF PAVING
EQ — EQUAL
EQUIP — EQUIPMENT
ER — EDGE OF ROAD
EVC — END OF VERTICAL CURVE
EW — EACH WAY
EWF — EACH WAY, EACH FACE
EXC — EXCAVATE
EXP — EXPOSED OR EXPANSION
EXP JT — EXPANSION JOINT
EXIST — EXISTING
EXT — EXTERIOR

F

FC — FLEXIBLE COUPLING OR FACE OF CURB
FCA — FLANGED COUPLING ADAPTER
FD — FLOOR DRAIN
FDN — FOUNDATION
FF — FINISH FLOOR
FG — FINISHED GRADE
FH — FIRE HYDRANT
FIG — FIGURE
FIN — FINISH
FL — FLOW LINE
FLG — FLANGE
FLR — FLOOR
FLTR — FILTER
FOC — FACE OF CONCRETE
FT — FOOT OR FEET
FT² — SQUARE FEET
FT³ — CUBIC FEET
FTG — FOOTING

G

G — GAS
GA — GAGE
GALV — GALVANIZED
GIP — GALVANIZED IRON PIPE
GPD — GALLONS PER DAY
GPH — GALLONS PER HOUR
GPM — GALLONS PER MINUTE
GRD — GRADE OR GROUND
GSP — GALVANIZED STEEL PIPE
GV — GATE VALVE
GYP — GYPSUM

H

HB — HOSE BIBB
HDR — HEADER
HDW — HARDWARE
HP — HORSEPOWER, HIGH POINT
HORIZ — HORIZONTAL
HR — HOUR
HT — HEIGHT
HW — HOT WATER
HWR — HOT WATER RETURN
HWS — HOT WATER SUPPLY

I

ID — INSIDE DIAMETER
IN — INCH
INFL — INFLUENT
INSUL — INSULATE OR INSULATION
INT — INTERIOR
INV — INVERT

J

JT — JOINT
JP — JOINT POLE

K

KIP — THOUSAND POUNDS
KW — KILOWATT

L

∠ — ANGLE (DEGREES)
L — ANGLE (STRUCTURAL SHAPE)
LB — POUND
LF — LINEAR FEET
LG — LONG
LH — LEFT HAND
LP — LOW POINT
LPG — LIQUIFIED PETROLEUM GAS
LR — LONG RADIUS
LT — LEFT
LONG — LONGITUDINAL

M

MATL — MATERIAL
MAX — MAXIMUM
MECH — MECHANICAL
MF — MEGA-FLANGE PIPE JOINT
MFR — MANUFACTURER
MGD — MILLION GALLONS PER DAY
MH — MANHOLE
MIN — MINIMUM OR MINUTE
MISC — MISCELLANEOUS
MJ — MECHANICAL JOINT
MTL — METAL
MWS — MAXIMUM WATER SURFACE

N

(N) — NEW
NC — NORMALLY CLOSED
NIC — NOT IN CONTRACT
NF — NON-FREEZE
NO — NUMBER OR NORMALLY OPER
NOM — NOMINAL
NPT — NATIONAL PIPE THREAD
NTS — NOT TO SCALE
— NUMBER

O

OC — ON CENTER
OD — OUTSIDE DIAMETER
OG — ORIGINAL GROUND
OVFL — OVERFLOW
OZ — OUNCE
OH — OVERHEAD

P

PC — POINT OF CURVE
PCF — POUNDS PER CUBIC FOOT
PE — PLAIN END
PERF — PERFORATED
PEP — POLYETHELENE PIPE
PI — POINT OF INTERSECTION
PL — PLATE
PL — PROPERTY LINE
PLCS — PLACES
PLYWD — PLYWOOD
PMP — PERFORATED METAL PIPE
POC — POINT ON CURVE
PP — POWER POLE
PRC — POINT OF REVERSE CURVE
PREFAB — PREFABRICATED
PRELIM — PRELIMINARY
PRESS — PRESSURE
PROP — PROPERTY
PSF — POUNDS PER SQUARE FOOT
PSI — POUNDS PER SQUARE INCH
PSIG — POUNDS PER SQUARE INCH, GAUGE
PT — POINT OF TANGENCY, POINT
PV — PLUG VALVE
PVC — POLYVINYL CHLORIDE PLASTIC
PVMT — PAVEMENT

Q

QTY — QUANTITY

R

R — RADIUS
RCP — REINFORCED CONCRETE PIPE
RD — ROAD
RDCR — REDUCER
RWD — REDWOOD
REF — REFER OR REFERENCE
REINF — REINFORCED, REINFORCING OR REINFORCE
REQD — REQUIRED
RET — RETURN
RH — RIGHT HAND
RM — ROOM
RO — ROUGH OPENING
RSP — ROCK SLOPE PROTECTION
RT — RIGHT OR RING TIGHT
R/W — RIGHT OF WAY
RWL — RAIN WATER LEADER

S

S — SEWER
SL — SLOPE
SCHED — SCHEDULE
SD — STORM DRAIN
SECT — SECTION
SHT — SHEET
SIM — SIMILAR
SP — SPACE OR SPACES
SPEC — SPECIFICATIONS
SQ — SQUARE
SQ FT — SQUARE FOOT
SQ IN — SQUARE INCH
SS — SANITARY SEWER
SST — STAINLESS STEEL
STA — STATION
STD — STANDARD
STL — STEEL
STR — STRUCTURAL
STRUCT — STRUCTURE
SUSP — SUSPENDED
SYMM — SYMMETRICAL

T

TAN — TANGENT
T&B — TOP AND BOTTOM
T&G — TONGUE AND GROOVE
TBM — TEMPORARY BENCH MARK
TC — TOP OF CURB
TCE — TEMPORARY CONSTRUCTION EASEMENT
TEL — TELEPHONE
TELEM — TELEMETRY
TEMP — TEMPERATURE OR TEMPORARY
THD — THREAD
TOC — TOP OF CONCRETE
TOG — TOP OF GRATE
TOW — TOP OF WALL
TP — TURNING POINT, TOP OF PAVEMENT OR TELEPHONE POLE
TRANSV — TRANSVERSE
TS — TUBE, STRUCTURAL
TYP — TYPICAL

U

UBC — UNIFORM BUILDING CODE
UOS — UNLESS OTHERWISE SPECIFIED
UG — UNDERGROUND
UTIL — UTILITY

V

V — VOLT
VAC — VACUUM
VC — VERTICAL CURVE
VCP — VITRIFIED CLAY PIPE
VERT — VERTICAL
VPI — VERTICAL POINT OF INTERSECTION

W

W — WATER OR WIDE FLANGE
W/ — WITH
W/O — WITHOUT
WP — WORK POINT
WS — WATER SURFACE, WATER STOP
WWF — WELDED WIRE FABRIC

X

XFMR — TRANSFORMER

Y

YD — YARD
YD² — SQUARE YARD
YD³ — CUBIC YARD

UTILITIES LEGEND

PROPOSED	EXISTING	
⋈	⊘	GATE VALVE
⋈	⊗ PV	PLUG VALVE
⋈	⊗ BV	BALL VALVE
⋈	⊗ BFV	BUTTERFLY VALVE
⋈ E	⊗ E	AUTOMATICALLY OPERATED VALVE (P= PNEUMATIC, E= ELECTRIC, S= SOLENOID, H= HYDRAULIC, D= DIAPHRAGM ACTUATOR)
⋈	⋈	3-WAY VALVE
⋈	⋈	GLOBE VALVE
⋈	⋈	ANGLE VALVE
⋈	⋈	PRESSURE REGULATING VALVE
⋈	⋈	PRESSURE RELIEF VALVE
⋈	⋈	CHECK VALVE
⋈	⋈	AIR OR VACUUM RELEASE VALVE
⋈ AV	⋈ AV	AIR AND VACUUM VALVE
⋈ CA	⋈ CA	COMBINATION AIR VALVE
⋈	⋈	FLOW METER
⋈	⋈ NF	HOSE BIBB (NF= NON-FREEZE)
▬◁	▷▷	REDUCER
⋈	⋈	FIRE HYDRANT
▣	▣	DROP INLET
●—	○	MANHOLE
—◀	—◁	CLEANOUT
—E—	— E —	UNDERGROUND ELECTRICAL
OH —E—	OH — E —	OVERHEAD ELECTRICAL
—TV—	— TV —	CABLE TELEVISION
—J—	— J —	JOINT UTILITIES
—TM—	— TM —	UNDERGROUND TELEMETRY LINE
OH —TM—	OH — TM —	OVERHEAD TELEMETRY LINE
— T —	— T —	UNDERGROUND TELEPHONE LINE
OH — T —	OH — T —	OVERHEAD TELEPHONE LINE
— W —	— W —	WATER LINE
— SS —	— SS —	SANITARY SEWER LINE
— SD —	— SD —	STORM DRAIN LINE
— G —	— G —	GAS LINE
—▶FM—	—○FM—	FORCE MAIN AND DIRECTION OF FLOW
		CULVERT
●—○	○—○	POLE MOUNTED ROADWAY LUMINAIRE
	NOT USED	ITEM TO BE REMOVED
		ITEM TO BE ABANDONED IN PLACE
	—□	WATER SERVICE
□³	PB □	PULL BOX AND DESIGNATION
⊢R4-4	⊢	SIGN AND DESIGNATION

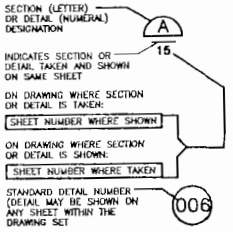
SIZE AND MATERIAL OF EXISTING PIPING MAY BE SHOWN WHEN KNOWN.

SIZE AND MATERIAL OF NEW PIPING MAY BE SHOWN ON PLAN OR IN PROFILE.

TOPOGRAPHIC LEGEND

PROPOSED	EXISTING	
△	△	P.I. (POINT OF INTERSECTION)
NOT USED	×	TEMPORARY BENCH MARK
47.55	NOT USED	FINISH GRADE ELEVATON
NOT USED	42.6 x	ELEVATION OF ORIGINAL GROUND
+	+	RADIAL POINT
		FLOW LINE AND DIRECTION
		TOP OF CUT
		TOP OF FILL
		TOE OF CUT OR FILL
200	180	CONTOUR LINE
		CONCRETE (IN PLAN)
		CONCRETE (IN SECTION)
		PAVEMENT
NOT USED		ROCKS
NOT USED		STUMPS
		TREES
		ROADS
	TP	UTILITY POLE (PP=POWER POLE, TP= TEL POLE, JP=JOINT POLE)
		GUY WIRE
		FENCE
—℄—	—℄—	BOUNDARY LIMITS, W/DESIGNATION
		CENTERLINE
NOT USED		MARSH
		WETLAND
NOT USED		SPRING
TP-4	TP-4	TEST PIT AND DESIGNATION
		EXPLORATION BORE HOLE
●	○	PROPERTY CORNER
⊙	◎	SURVEY MONUMENT
▲	△	CONTROL POINT
		DRIVEWAY

DETAIL AND SECTION DESIGNATION



NOTES

1. CONTACT THE ENGINEER FOR SYMBOLS NOT LISTED
2. THIS IS A STANDARD SHEET, THEREFORE, SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET WHICH DO NOT APPEAR ON THE PLANS.
3. SITE AND UTILITY SYMBOLS SHOWN ON THIS SHEET ARE NOT INTENDED TO REPRESENT THE PHYSICAL SCALE OR SHAPE OF ANY ITEMS. WHERE LARGE-SCALE PLANS ARE PRESENTED, THE SYMBOLS SHOWN HEREON MAY BE REPLACED BY DETAILS MORE SUITED TO THE DRAWING SCALE.

CURVE DATA

R (RADIUS)
L (LENGTH)
Δ (DELTA)
T (TANGENT)

PRELIMINARY

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501
(707)441-8855 FAX (707)441-8877

NO.	DATE	REVISION	BY

DSGN JLL
DR CDN
CHK LKS
APVD

WIYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

STANDARD ABBREVIATIONS AND LEGENDS

DRAWING G-2
SHT 2
DATE 6/2008
PROJ. NO. 004178.100

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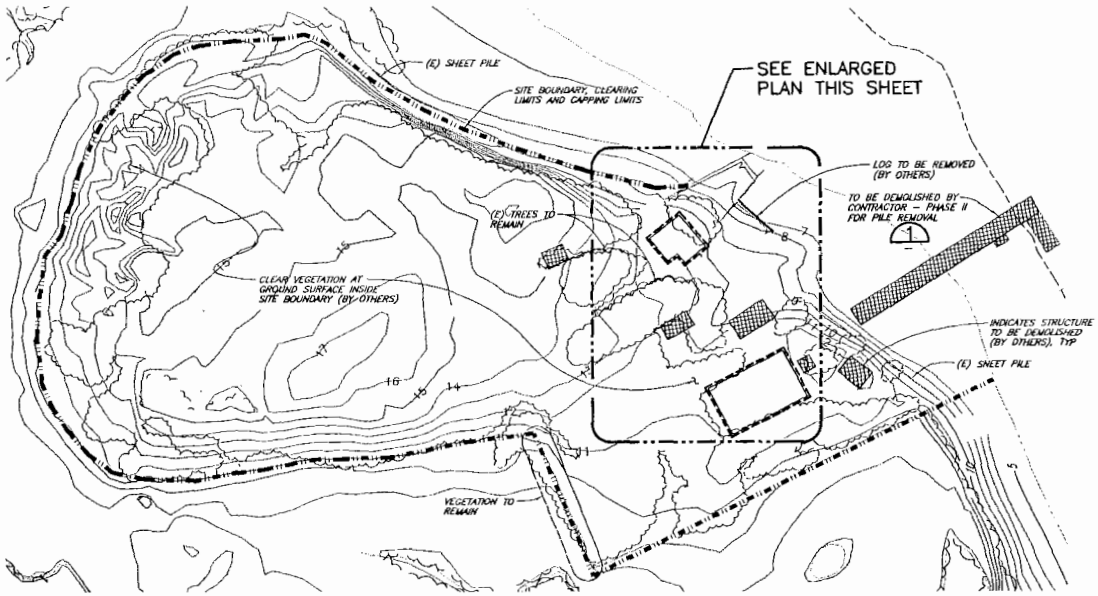
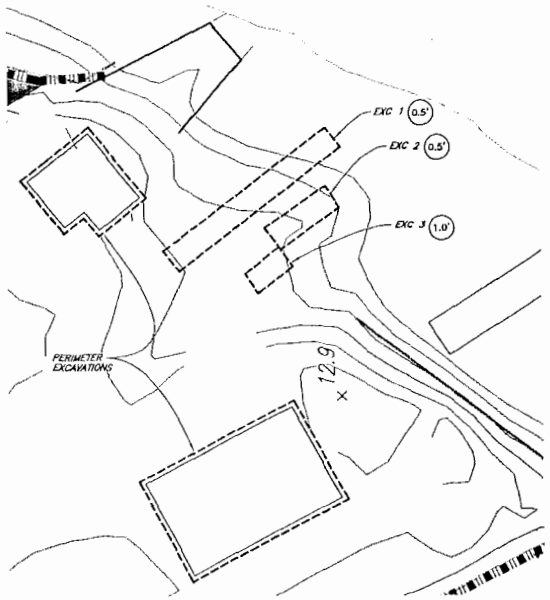


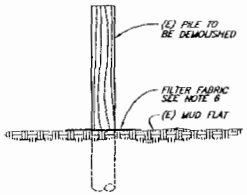
PLAN
1"=40'



ENLARGED PLAN
1"=20'

NOTES:

1. PERIMETER EXCAVATIONS TO EXTEND 1.5' FROM BUILDING AND 0.5' DEEP.
2. SOIL FROM PERIMETER EXCAVATIONS TO BE STOCKPILED SEPARATELY FROM PCP AND DIOXIN IMPACTED SOIL.
3. EXC 1, 2, AND 3 CONTAIN PCP AND DIOXIN CONTAMINATED SOIL. THE EXCAVATED SOIL IS TO BE STOCKPILED SEPARATE FROM THE PERIMETER EXCAVATED SOIL AND PLACED IN 55 GALLON DRUMS.
4. ALL EXCAVATION WORK WILL BE PERFORMED BY OTHERS UNDER THE SUPERVISION OF A REGISTERED PROFESSIONAL ARCHEOLOGIST.
5. DEPTH OF EXCAVATION SHOWN AS: (0.5')
6. PLACE FILTER FABRIC AROUND SOIL SURROUNDING PILES TO BE DEMOLISHED PRIOR TO PILE REMOVAL. SEE CONSTRUCTION SWPPP FOR MORE DETAILS.



DETAIL 1
NTS

PRELIMINARY

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash
Eureka, CA 95501
(707)441-8855
FAX (707)441-8877

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

NO.	DATE	REVISION	BY

DSGN JJL
DR RDW/CDN
CHK
APVD

WIYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

DEMOLITION AND EXCAVATION PLAN

DRAWING C-1
SHT 3
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/23/2008 2:34 PM LSTROMME, PLOTTED: 6/23/2008 2:34 PM LISA K. STROMME
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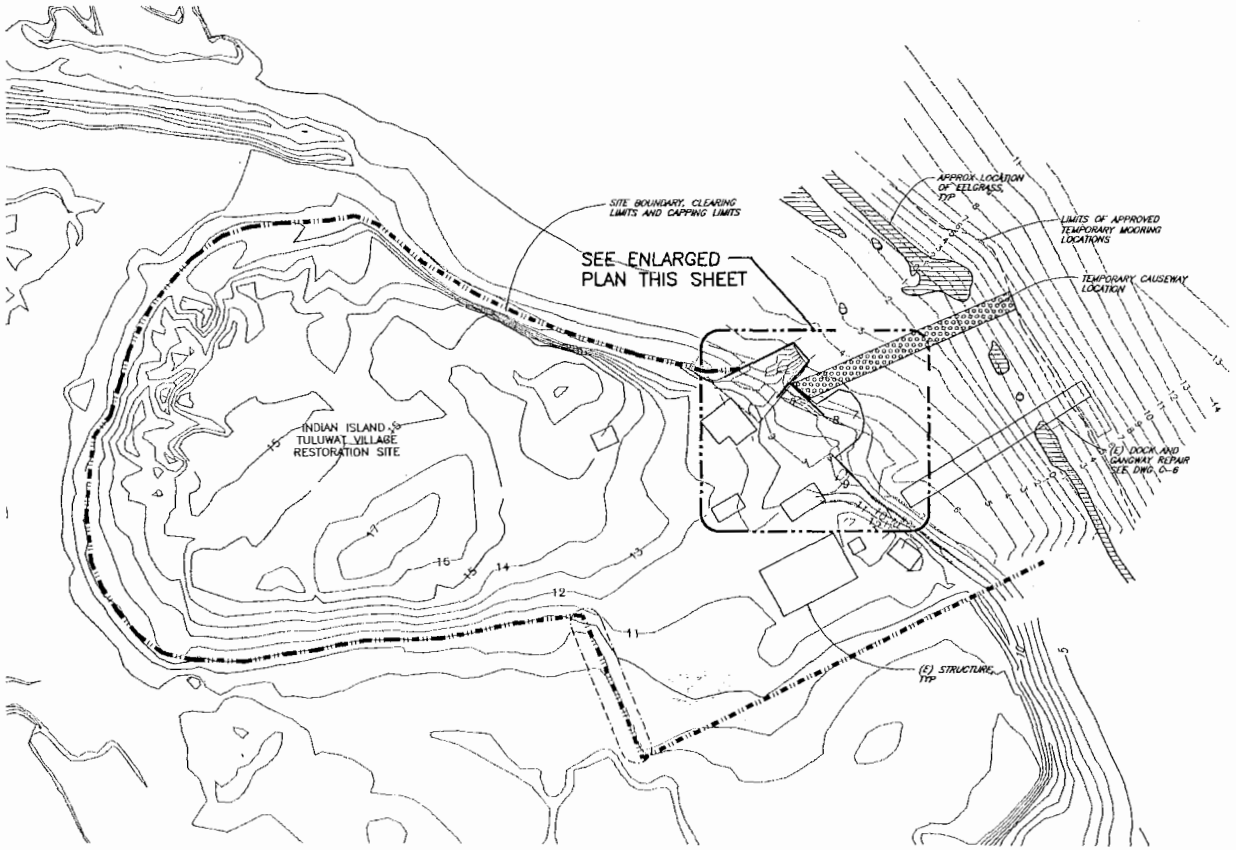
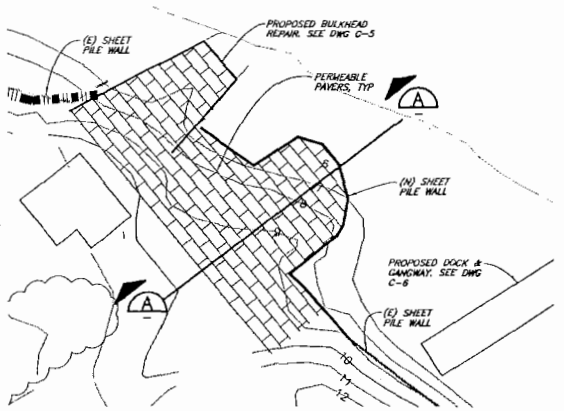


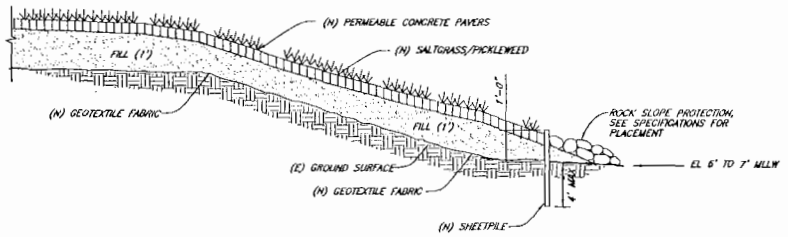
SITE PLAN
1"=40'



ENLARGED PLAN
1"=20'

GENERAL NOTES

1. SOILS AT THIS SITE MAY BE CONTAMINATED WITH PENTACHLOROPHENOL (PCP), DIOXINS AND FURANS AND/OR METALS. CONTRACTOR SHALL HAVE ALL LICENSES PERTAINING TO HANDLING HAZARDOUS MATERIALS. REFER TO SPECIFICATION SECTION 02213.
2. ALL CONTRACTOR EMPLOYEES TRAINING SHALL MEET HEALTH AND SAFETY REQUIREMENTS FOR HAZARDOUS WASTE SITE OPERATIONS. REFER TO SPECIFICATION SECTION 02213.
3. THIS SITE HAS ARCHAEOLOGICAL ARTIFACTS PRESENT IN SUB-SURFACE SOILS AND THEREFORE MUST BE TREATED AS A SENSITIVE AREA. DISTURBANCE OF SITE SOILS MUST BE KEPT TO A MINIMUM.
4. THE WYOT TRIBE WILL BE RESPONSIBLE FOR CLEARING, SITE DEMOLITION AND EXCAVATION.



SECTION A
NTS

PRELIMINARY

VERIFY SCALES BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET ADJUST SCALES ACCORDINGLY

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812 W. Wabash
Eureka, CA 95501
TEL (707)441-8855
FAX (707)441-8877

NO.	DATE	REVISION	BY

DSGN JLL
DR RDW/CDH
CHK
APVD

WYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

SITE PLAN AND DETAILS

DRAWING C-2
SHT 4
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/23/2008 2:34 PM LSTROHAVE PLOTTED: 6/23/2008 3:19 PM LISA K. STROHAVE
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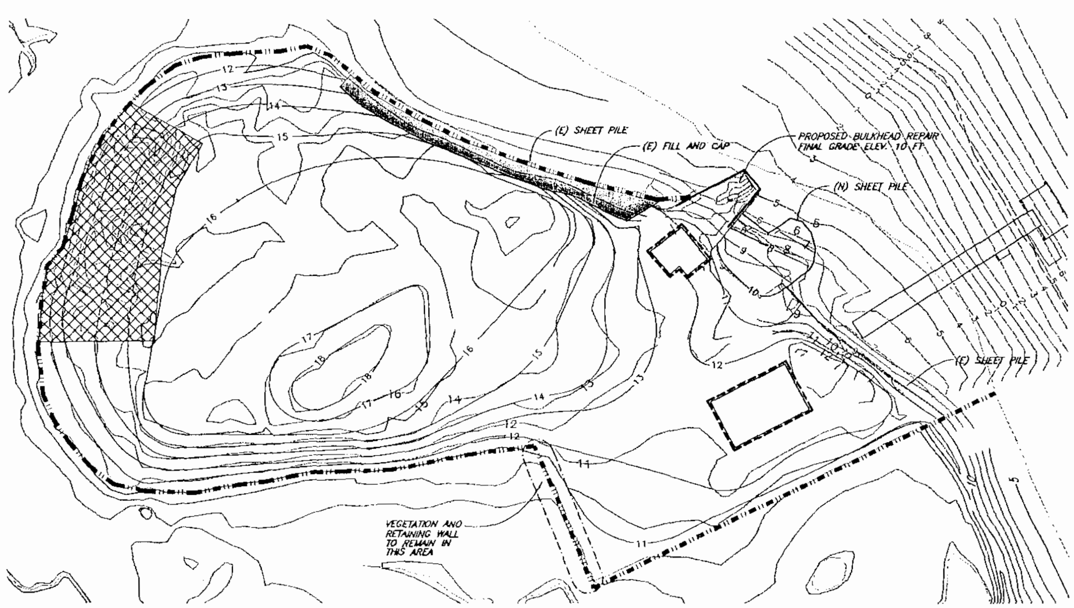

OWNER: WIYOT TRIBE
REPRESENTATIVE: JON MOONEY, (707) 733-5055
APN: 405-011-002 AND -010

PLAN
1"=40'

NOTES:

1. CONTOURS SHOWN ON THIS SHEET ARE APPROXIMATE.
2. THIS SITE GRADING PLAN IS PENDING APPROVAL FROM THE CITY OF EUREKA AND, THEREFORE, IS SUBJECT TO CHANGE.
3. ALL VEHICLES ON THE SITE SHALL BE LOW PRESSURE, TRACK MOUNTED AND FUELED BY BIODIESEL. IN ADDITION, ALL HYDRAULIC FLUID SHALL BE VEGETABLE OIL.
4. NO SITE GRADING WILL OCCUR UNTIL AFTER THE ENGINEER HAS INSPECTED AND HAS APPROVED THE INSTALLATION OF THE GEOFABRIC/GEOGRID.
5. THE ENGINEER WILL BE ON-SITE DURING ALL GRADING ACTIVITIES TO DIRECT THE PLACEMENT OF FILL MATERIAL AND FINAL CONTOURS.
6. MICROTOPOGRAPHY SHOULD FOLLOW THE NATURAL GROUND UNDULATIONS AND NEED NOT BE SMOOTH.
7. NEW SOIL PLACEMENT SHALL MATCH TO EXISTING GRADE AT EXISTING FILL AND CAP LOCATIONS.
8. CONTOURS SHOWN ON THIS SHEET ARE APPROXIMATE ONLY. FILLING SHALL PROCEED IN THE FOLLOWING ORDER:
   (A) PLACE GEOFABRIC OVER EXISTING GROUND AT LARGE, UNDULATING AREAS AND PLACE IMPORTED FILL ON TOP OF GEOFABRIC.
   (B) PLACE GEOGRID ON TOP OF IMPORTED FILL AND PLACE FINAL FILL CAP PER "TYPICAL CAPPING SECTION", SHEET C-3.
9. THE CONTRACTOR SHALL IMPLEMENT EROSION AND SEDIMENT CONTROL MEASURES AS OUTLINED IN THE PROJECT STORM WATER POLLUTION PREVENTION PLAN.

EXPLANATION (THIS SHEET ONLY)

- AREA OF LARGE, DEEP UNDULATIONS
- AREA OF PREVIOUS FILL
- SITE BOUNDARY AND CLEARING LIMITS

PRELIMINARY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 — 1"
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NO.	DATE	REVISION	BY

DSGN JLL
DR RDW/CDN
CHK
APVD

WIYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

SITE GRADING PLAN

DRAWING C-3
SHT 5
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/23/2008 2:34 PM LSTROMME, PLOTTED: 6/23/2008 2:34 PM LISA K. STROMME
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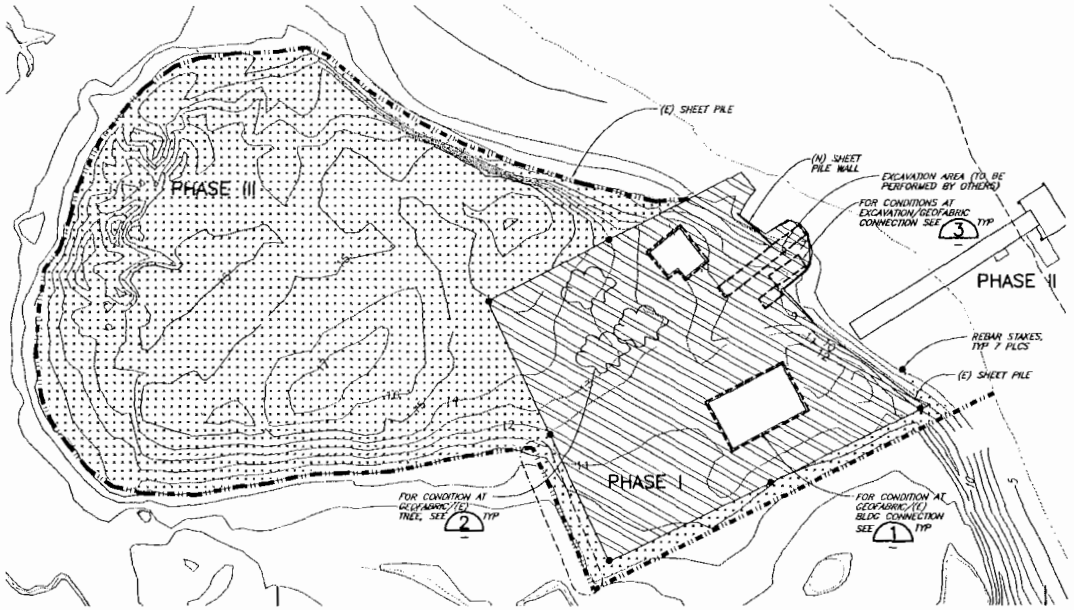


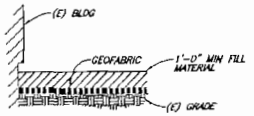
CAPPING PLAN
1"=40'

CAPPING LEGEND

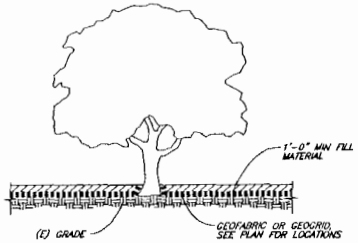
8 OZ. WOVEN GEOFABRIC, U.S. PRODUCT NO. 230 OR EQUAL

GEOGRID, U.S. PRODUCT NO. 5E200 OR EQUAL

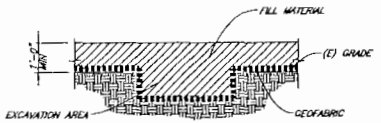
PHASE I
EXCAVATION: 17 CUBIC YARDS
FILL: 1,600 CUBIC YARDS



DETAIL 1
NTS



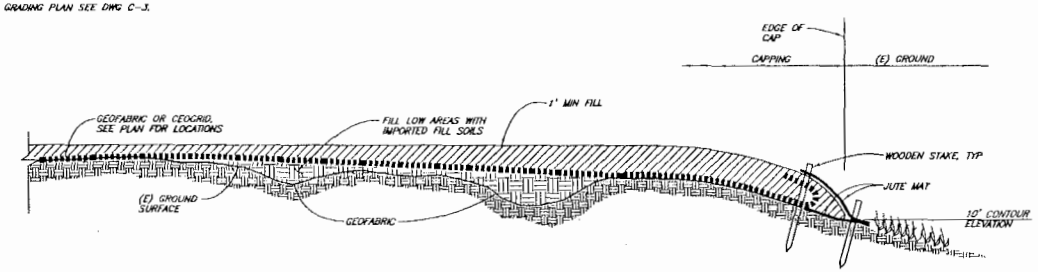
DETAIL 2
NTS



DETAIL 3
NTS

NOTES:

1. INSTALL GEOFABRIC AND GEOGRID PER MANUFACTURER'S SUGGESTED METHOD.
2. THE SITE IS A NATIVE AMERICAN CULTURALLY SENSITIVE SITE. DO NOT DISTURB SITE SOILS. NO SOIL IS TO BE EXCAVATED WITHOUT THE DIRECT OVERSITE OF A REGISTERED PROFESSIONAL ARCHEOLOGIST.
3. FILL LOW AREAS OF THE SITE WITH THE (E) STOCKPILED SOILS OR IMPORTED FILL SOIL TO THE EXTENT NECESSARY TO FACILITATE INSTALLATION AND ENSURE THE INTEGRITY OF THE GEOFABRIC/GEOGRID. FIRST LAY GEOFABRIC DOWN ON NATIVE SOILS PRIOR TO FILLING THE DEPRESSION, TO DELINEATE THE CONTACT OF NEW/NATIVE SOILS. THEN FILL IN DEPRESSION TO (E) GRADE, AS NEEDED, PRIOR TO CAP INSTALLATION.
4. FOR FINAL GRADING PLAN SEE DWG C-3.



NOTE: (E) GROUND SURFACE AND SOILS SHALL NOT BE DISTURBED

TYPICAL CAPPING SECTION
NTS

PRELIMINARY

VERIFY SCALES
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NO.	DATE	REVISION	BY

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DR RDW/CDN
CHK
APVD

WIYOT TRIBE
TUIWAT VILLAGE
EUREKA, CALIFORNIA

CAPPING PLAN SECTION AND DETAILS

DRAWING C-4
SHT 6
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/23/2008 2:34 PM LSTROMAC, PLOTTED: 6/23/2008 2:34 PM LISA K. STROMME
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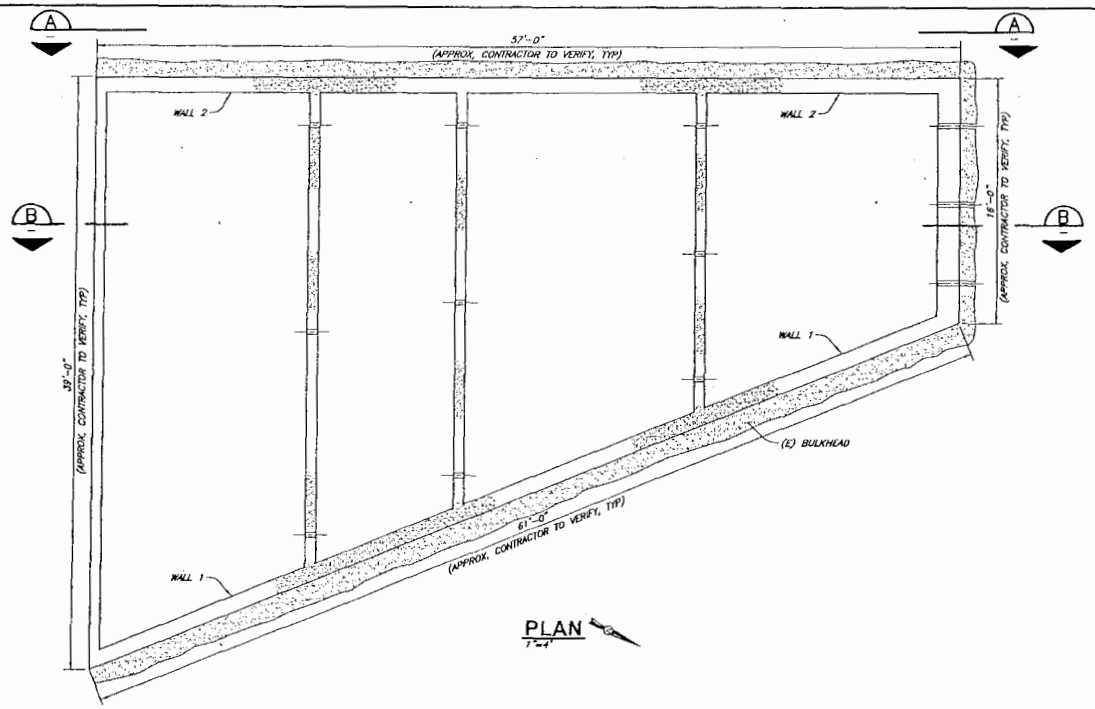
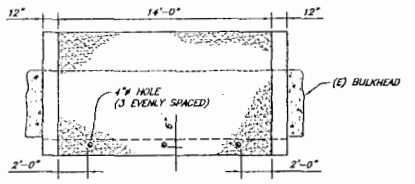
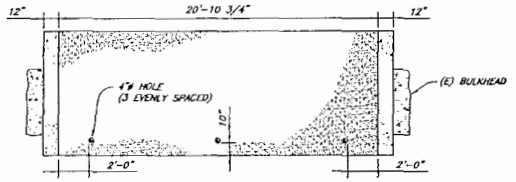


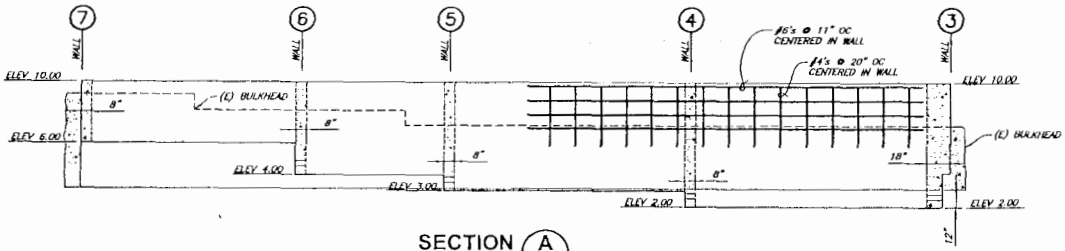
PLAN
1"=4'



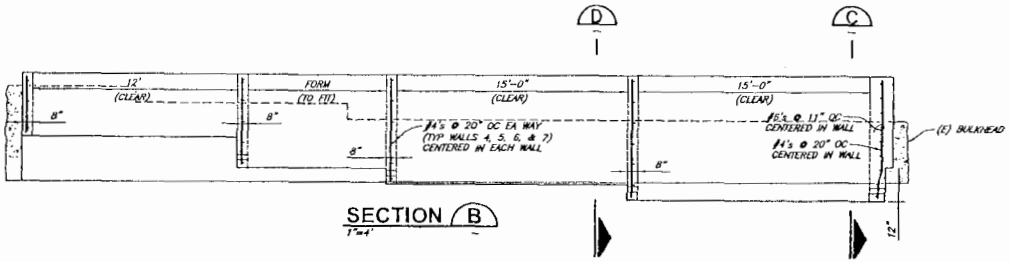
SECTION C
NTS



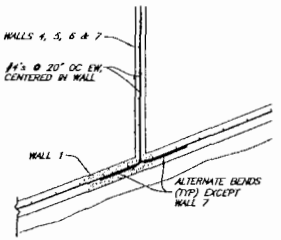
SECTION D
NTS

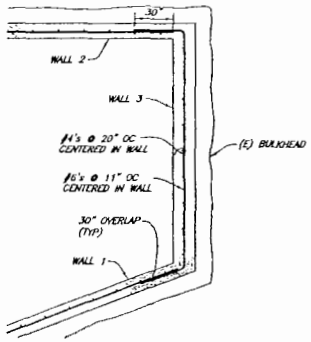


SECTION A
1"=4'



SECTION B
1"=4'





CORNER REBAR
NTS

PRELIMINARY

VERIFY SCALES
BAR IS ONE INCH ON ORIGINAL DRAWING
0 1"
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NO.	DATE	REVISION	BY

DSGN JLL
DR MJ/CDN
CHK
APVD

WIYOT TRIBE
TULUWAT VILLAGE
EUREKA, CALIFORNIA

BULK HEAD PLAN SECTIONS AND DETAILS

DRAWING C-5
SHT 7
DATE 6/2008
PROJ. NO. 004178.100

SAVED: 6/19/2008 4:13 PM CNEWELL PLOTTED: 6/19/2008 4:13 PM CHRIS D. NEWELL
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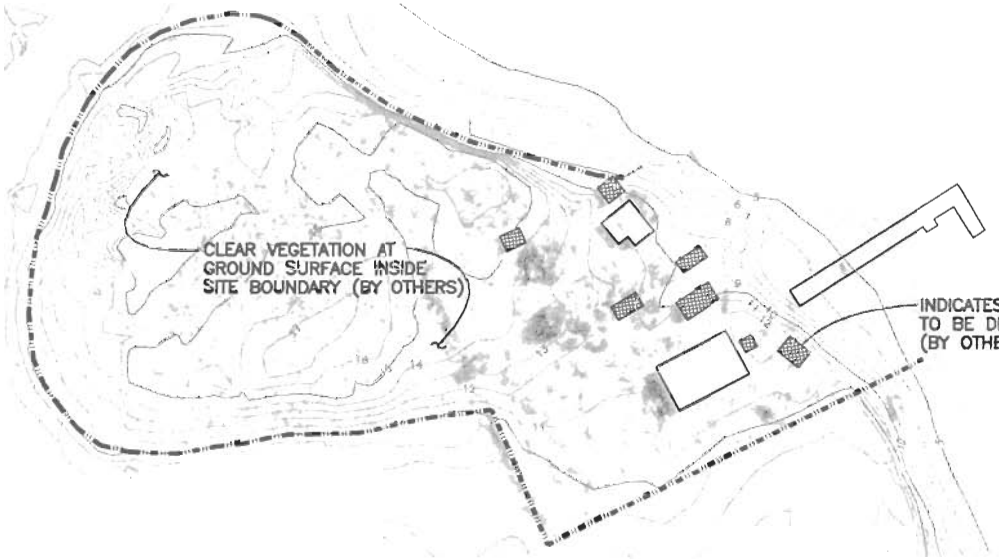

DEMOLITION PLAN

PRELIMINARY

VERIFY SCALES
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812 W. Wabash
Eureka, CA 95501
(707) 441-8855
FAX (707) 441-8877

NO.	DATE	REVISION	BY

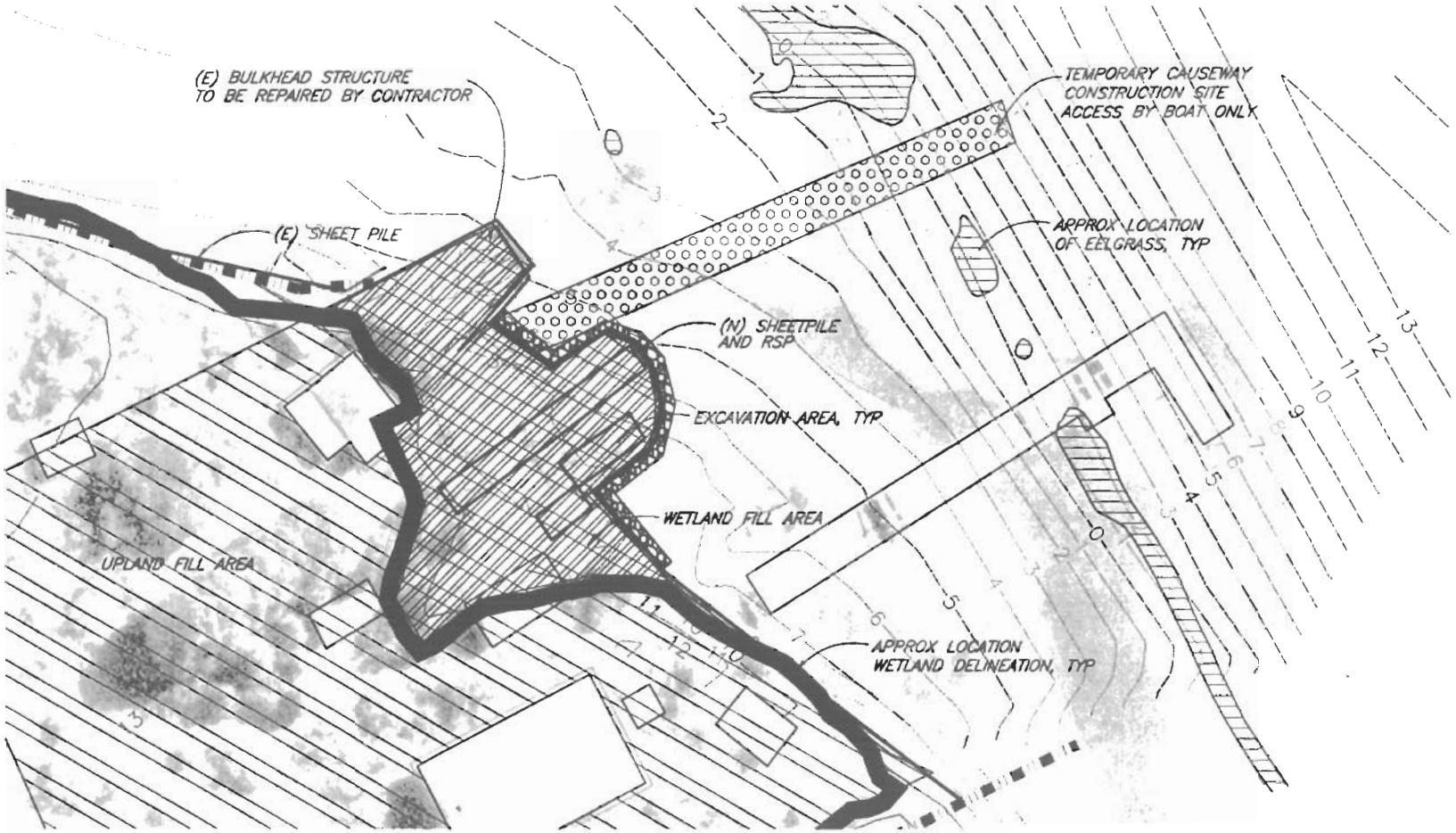
DESIGN
DR
CHK
APP'D

WIYOT TRIBE TULUWAT VILLAGE
EUREKA, CALIFORNIA

DEMOLITION PLAN

DRAWING
D-1
SHT 2 OF 4
DATE
PROJ. NO.
004178.100

D-1



EXPLANATION

EXISTING STRUCTURE

SITE BOUNDARY
AND CLEARING LIMITS

EXHIBIT NO. 5

APPLICATION NO.

1-08-017

WIYOT TRIBE

WETLAND IMPACTS

0 30

1"=30'

SHN Consulting Engineers & Geologists, Inc.

Indian Island
Eureka, California

Site Plan

SHN 004178.100

June 2008 | 004178-100-WETLANDFILLMAP | Figure 2

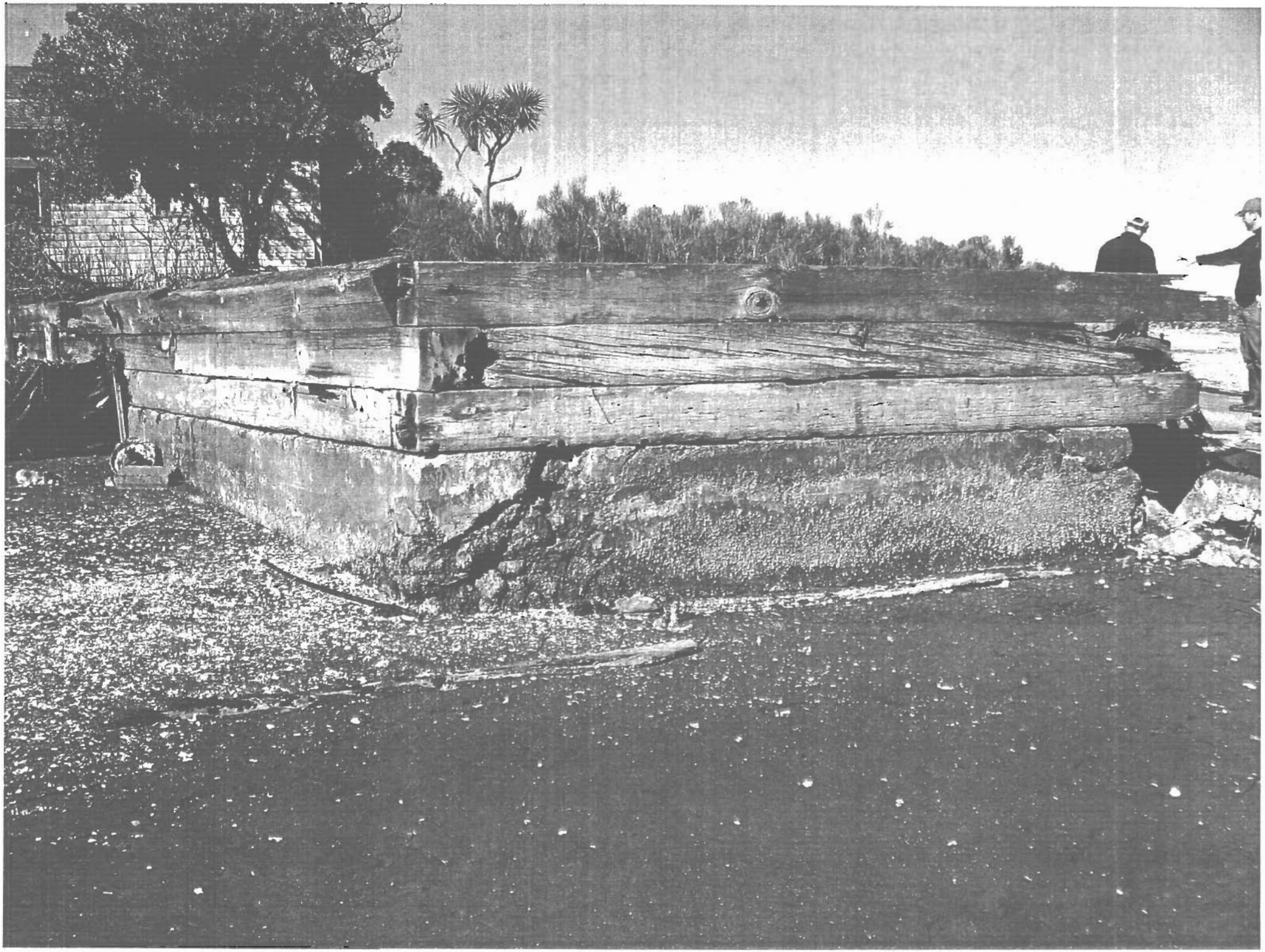
EXHIBIT NO. **6**

APPLICATION NO.

1-08-017

WIYOT TRIBE

MAY 2008 PHOTOS OF
BULKHEAD (1 of 5)



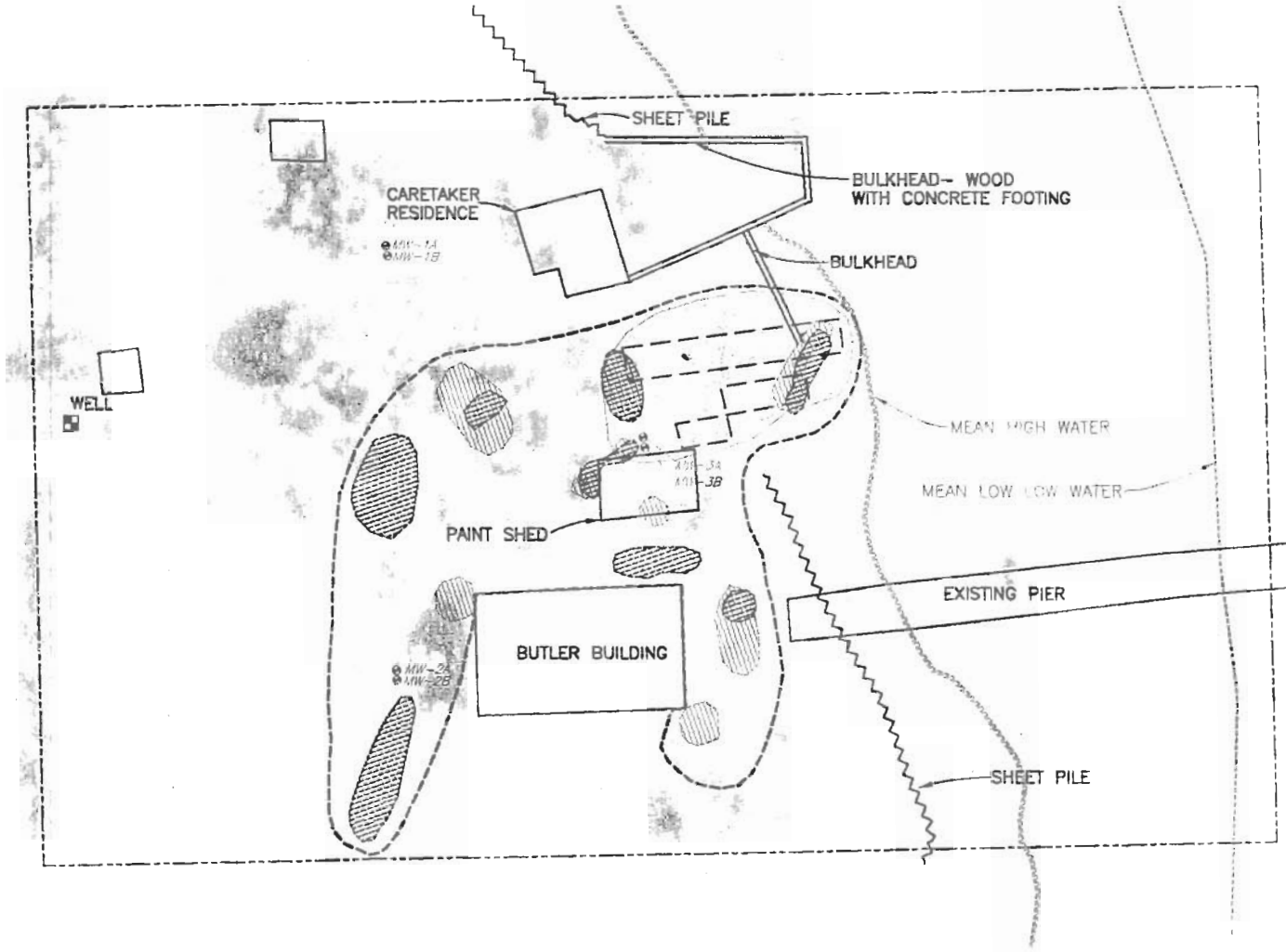


EXHIBIT NO. 7
APPLICATION NO.
1-08-017
WIYOT TRIBE
KNOWS AREAS OF SOIL CONTAMINATION

EXPLANATION

- PROPOSED EXCAVATION AREA (APPROXIMATE)
- METAL CONCENTRATION EXCEEDS EPA PRG FOR INDUSTRIAL SOIL (APPROXIMATE EXTENTS)
- ARSENIC NOT SHOWN WHERE BELOW BACKGROUND
- PAH CONCENTRATION EXCEEDS EPA PRG FOR INDUSTRIAL SOIL (APPROXIMATE EXTENTS)
- PCP CONCENTRATION EXCEEDS EPA PRG FOR INDUSTRIAL SOIL (APPROXIMATE EXTENTS)
- ESTIMATED AREA OF IMPACTED MIDDEN
- MONITORING WELL LOCATION AND DESIGNATION

ALL LOCATIONS APPROXIMATE

1" = 30'
0 30

Consulting Engineers & Geologists, Inc.

Indian Island
Eureka, California

Known Areas of Soil Contamination

001178.100

December 2006 | 001178.100 MW CONT ALL | Figure 4

Eelgrass (*Zostera marina*) Survey for Tuluwat Restoration Project
June 4th 2008, 8-11 am & June 5th 2008 8-10 am

Surveyors: Dylan Gray, Environmental Specialist, Wiyot Tribe
Tim Nelson, Environmental Technician, Wiyot Tribe

Site: Tuluwat Village Shoreline, Indian Island, Humboldt Bay

Introduction

On June 4th and 5th 2008, Wiyot staff surveyed portions of the Tuluwat Village Shoreline on Indian Island for populations of native eelgrass (*Zostera marina*). The purpose of the surveys was to determine eelgrass locations and patch densities prior to initiation of restoration activities intended to take place on Indian Island this year. The designed restoration activities, which include reconstruction of a dock and bulkhead, will include use of heavy machinery and may potentially impact the mud flats at the project site. The sites most likely to be impacted during the restoration activities include the areas under and surrounding the old dock, as well as the area surrounding and down-slope of the bulkhead. Given this, the surveys were targeted to overlap these areas.

Survey Design

The survey was split up into two different phases to take place on consecutive days during the lowest tides of the year. On Wednesday June 4th, the site was surveyed by foot at parallel transects coinciding with the shore contours, starting at the water's edge and moving upslope; transects were kept at an interval not more than 20 feet apart. Where *Z. marina* patches were encountered, their locations were recorded using a Magellan Explorist 650 hand-held GPS unit and marked on a site map. Additionally, populations of smaller patches were estimated or, if possible, counted. Patch diameters or other relevant dimensions were measured using a 200' reel-type fiberglass tape measure. Finally, the locations of patches were further defined by recording distance relative to some fixed landscape feature (i.e., a retaining wall), the location of which was also recorded using GPS. Low tide on the morning of June 4th was at approximately 7:10 am, at a height of 2.4 feet below MLLW (mean low low water); high tide was at approximately 2:16 pm at a height of 5.5 feet above MLLW.

On Thursday June 5th, the site was surveyed by boat, a 17' 10" North River Mariner. This time, patches detected the day before that straddled the waterline were delineated on the down-slope direction (i.e., underwater in the Middle Channel). The same mapping methods noted above were used to record *Z. marina* patch locations. Low tide on the morning of June 5th was at approximately 7:59 am, at a height of 2.4 feet below MLLW (mean low low water); high tide was at approximately 12:58 pm at a height of 5.6 feet above MLLW.

Results

Z. marina patches were encountered fairly consistently throughout the lower slopes of the site, straddling the MLLW line (see Figure 1, Tuluwat Restoration Project – Eelgrass Location Map). Additionally, patches were detected between the bulkhead and the MLLW line. In all cases, patch density was greater below MLLW than above. For details regarding *Z. marina* patches and reference locations see Table 1, Tuluwat Restoration Project – Eelgrass Locations – Point Coordinates and Descriptions; and Table 2, Tuluwat Restoration Project – Eelgrass Locations – Distances Between Relevant Points.

The areas of greatest concern (as regards potential impact during restoration activities) are:

- the area under and within 20 feet of the old dock, and
- the area within 20 feet of the old bulkhead, and the slope below it.

For the area around the old dock, the following detections were made:

1) A small patch of approximately 17 leaf-bearing stems about 8 feet from the dock and approximately 5.5' in diameter, located just east of the dock at the MLLW line (ZMG-3)
2) A large patch beginning five feet to the west of the dock and continuing west along the MLLW line. This was divided into two patches – the less dense upslope population (ZMG-5) which contained approximately 30 leaf-bearing stems within 20' of the old dock, and the more dense down-slope patch (ZMG-4), covering an area of approximately 75 square feet within 20' of the dock

For the area around and down-slope of the bulkhead, the following detections were made:

1) A small (8' diameter), sparse patch of 4 small plants, located 38' down-slope of the bulkhead (ZMG-6)
2) A small (10' diameter) patch of 9 small plants, located down-slope and slightly east of the bulkhead, near the 1' elevation contour (ZMG-7)
3) An extensive patch located approximately 100' directly down-slope of the bulkhead and straddling the Middle Channel edge on to the northeast (ZMG-1). This patch is broadest (approximately 30') in width directly below the bulkhead; it thins to a width of approximately 12' as it extends to the northeast. If the access path of the bulkhead reconstruction is 40' wide and oriented directly down-slope of the bulkhead (through the thickest area of ZMG-1), a gross estimate of the eelgrass area intersected would be approximately 700 square feet. However, if that path were directed slightly to the east, the area of eelgrass intersected would be approximately 480 square feet. If this path were selected, ZMG-7 would be directly intersected; also, care would have to be taken to orient the path so that it did not intersect another very large patch that begins mid slope and continues northeast (ZMG-8).

Conclusion

Z. marina patches were detected in the anticipated work areas or access paths of the planned dock and bulkhead reconstruction phases of the Tuluwat Restoration Project. It must be noted that, due to the habitat proclivities of *Z. marina*, the bulk of the patches encountered at the project site are situated along the MLLW contour; furthermore, the contour interval steepens rapidly below MLLW, where the greatest patch density of *Z. marina* occurs. In all cases of project design and execution where boat access is concerned, accessing the site during high tides should be the preferred method as this will help avoid impacts to the plants located down-slope/underwater.

Depending on the specific design of the dock and requirements of the construction process, the *Z. marina* patches located near the dock may not be disturbed by restoration activities: they are located on a narrow band straddling the MLLW line, and none are located directly under the dock structure. Similarly, the method of access and reconstruction of the bulkhead could limit the disturbance of the *Z. marina* patches down-slope of the bulkhead; orienting the access path optimally and accessing the site during high tides would eliminate nearly all disturbances, except potentially for patch ZMG-6, comprised of 4 small plants.

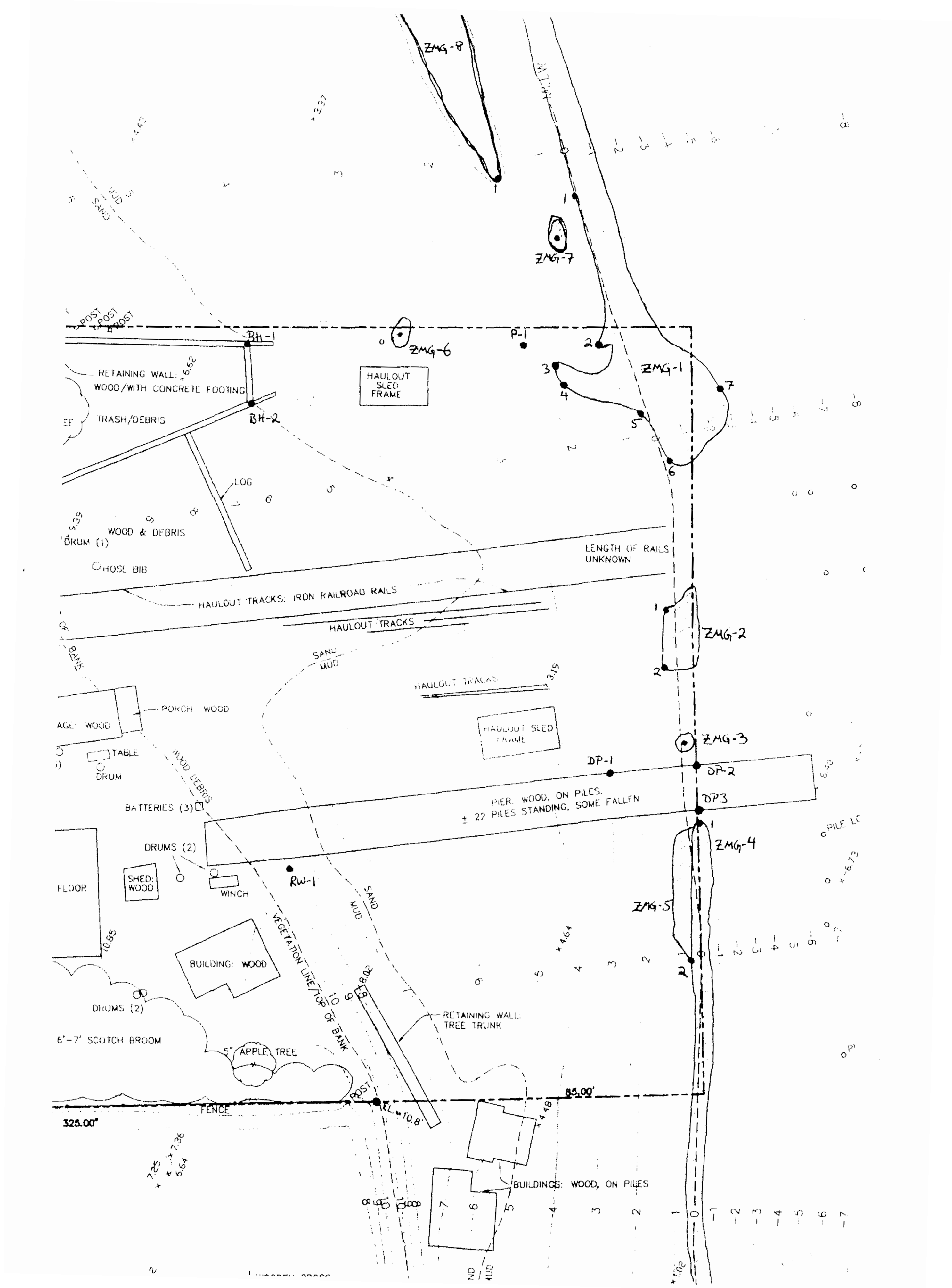
Dylan Gray
Environmental Specialist, Wiyot Tribe
1000 Wiyot Drive
Loleta, CA 95551
ph 707.773.5055/fx .5601
dylan@wiyot.com

Tuluwat Restoration Project
Eelgrass (*Zostera marina*) Locations
Point Coordinates and Descriptions

Feature Name	Code	Point #	Latitude	Longitude	Feature Description
Zostera marina Group 1	ZMG-1	1	40° 48.928'N	124° 09.427'W	A large, elongate *Z. marina* patch that straddles elevation contour where slope goes from gentle on mudflat to steep into the Humboldt Bay Middle Channel, although this slope change is more gradual at south end of patch (the reason the population is broader there). Upslope portions of patch are less dense than at center contour and below. The width of the patch is around 12' at Point 1, and about 40' from Point 3 to Point 7.
		2	40° 48.924'N	124° 09.437'W	
		3	40° 48.924'N	124° 09.441'W	
		4	40° 48.924'N	124° 09.442'W	
		5	40° 48.919'N	124° 09.440'W	
		6	40° 48.917'N	124° 09.443'W	
		7	40° 48.916'N	124° 09.436'W	
Zostera marina Group 2	ZMG-2	1	40° 48.913'N	124° 09.449'W	A moderately sized (22' long by 8' wide) *Z. marina* patch situated between old haul-out rails and old dock, straddling edge of mudflat drop-off into Middle Channel.
			40° 48.912'N	124° 09.453'W	
Zostera marina Group 3	ZMG-3	1	40° 48.911'N	124° 09.455'W	A small (5.5' diam) *Z. marina* patch of appx. 17 leaf-bearing stems, located near the old dock.
Zostera marina Group 4	ZMG-4	1	40° 48.909'N	124° 09.459'W	A dense, narrow (~5' width), elongate *Z. marina* patch bordering and downslope of the 0 MLLW contour dropping into the Middle Channel.
		2	40° 48.904'N	124° 09.468'W	
Zostera marina Group 5	ZMG-5	1	40° 48.909'N	124° 09.459'W	A sparse, narrow (~5' width), elongate *Z. marina* patch just upslope of ZMG-5 (actually part of the same patch, but much less dense). About 30 leaf-bearing stems in this patch are within 20' of the old dock.
		2	40° 48.904'N	124° 09.468'W	
Zostera marina Group 6	ZMG-6	1	40° 48.931'N	124° 09.444'W	A sparse, small (8' diam) *Z. marina* patch comprised of 4 small plants, 38' downslope from bulkhead.
Zostera marina Group 7	ZMG-7	1	40° 48.927'N	124° 09.434'W	A sparse, small (10' diam) *Z. marina* patch of 9 small plants, 30' (@ 42° bearing) from solo piling.
Zostera marina Group 8	ZMG-8	1	40° 48.929'N	124° 09.433'W	A large, elongate *Z. marina* patch that extends NE from point ZMG-8-1.
Piling, solo	P	1	40° 48.925N	124° 09.440W	solo piling downslope from bulkhead
Bulkhead	BH	1	40° 48.936N	124° 09.448W	northeast corner of bulkhead
		2	40° 48.935N	124° 09.450W	southeast corner of bulkhead
Dock Pilings	DP	1	40° 48.908N	124° 09.460W	piling supports for old dock
		2	40° 48.910N	124° 09.456W	
		3	40° 48.913N	124° 09.458W	
Retaining Wall	RW	1	40° 48.925N	124° 09.472W	point on fiberglass composite retaining wall, ~ 5' from dock

Tuluwat Restoration Project
Eelgrass (*Zostera marina*) Locations
Distances Between Relevant Points

Population	Point A	Point B	Distance (feet)	Notes
ZMG-1	1	6	97	
	3	7	40	
	BH-2	population edge	100	distance measured in line with southwest wall of bulkhead
ZMG-2	1	2	22	
ZMG-3	Diameter	n/a	5.5	
	1	dock	8	
	1	DP-1	20	
ZMG-4	1	2	50	
	1	DP-3	5	
	1	RW-1	109	
ZMG-5	1	DP-3	5	
ZMG-6	Diameter	n/a	8	
	1	BH-1	38	distance measured in line with northeast wall of bulkhead
ZMG-7	1	P-1	30	distance measured at 42° bearing from solo piling



ZMG-8
ZMG-7
ZMG-6
ZMG-1
ZMG-2
ZMG-3
ZMG-4
ZMG-5
BH-1
BH-2
P-1
DP-1
DP-2
DP3
RW-1
POST
RETAINING WALL: WOOD/WITH CONCRETE FOOTING
TRASH/DEBRIS
HAULOUT SLED FRAME
LOG
WOOD & DEBRIS
DRUM (1)
HOSE BIB
LENGTH OF RAILS UNKNOWN
HAULOUT TRACKS: IRON RAILROAD RAILS
HAULOUT TRACKS
SAND
MUD
PORCH WOOD
TABLE
DRUM
WOOD DEBRIS
BATTERIES (3)
PIER. WOOD, ON PILES. ± 22 PILES STANDING, SOME FALLEN
DRUMS (2)
SHED: WOOD
WINCH
FLOOR
BUILDING: WOOD
VEGETATION LINE/TOP OF BANK
RETAINING WALL: TREE TRUNK
6'-7' SCOTCH BROOM
5" APPLE TREE
FENCE
EL. = 10.8'
85.00'
325.00'
BUILDINGS: WOOD, ON PILES
PILE LC

Exhibit "

Statement of
Mitigation Monitoring and Reporting Programs

Tuluwat Restoration Project
State Clearinghouse Number 2004122022
April 14, 2008

This Mitigation Monitoring and Reporting Program (MMRP) has been prepared for the project described below in conformance with Section 21081.6 of the California Environmental Quality Act (CEQA) and Section 15097 of the CEQA Guidelines.

EXHIBIT NO. 9
APPLICATION NO.
1-08-017
WIYOT TRIBE
CEQA ARCHAEOLOGICAL RESOURCES MITIGATION MEASURES (EXCERPT) (1 of 4)

SCH #: 2004122022

PROJECT TITLE: ***Tuluwat Restoration Project***

PROJECT APPLICANT: Table Bluff Reservation – Wiyot Tribe

CASE NO: C-04-011

PROJECT LOCATION: Indian Island east of Highway 255, APN 405-011-002, -010

ZONING & GENERAL PLAN DESIGNATION: Natural Resources

PROJECT DESCRIPTION: The Wiyot Tribe is working to renew their cultural connection to Indian Island and Tuluwat, and proposes to construct a ceremonial place where the Tribe can conduct a variety of cultural activities including the World Renewal Ceremony, as well as cultural and environmental education activities for the tribal and regional community. The project includes implementation of an interim site cleanup plan for contaminated soil (including dioxin contamination), construction of tribal gathering areas such as a dance house, as well as a caretaker's residence, restored dock and bulkhead, vault toilet and camp kitchen, all in the setting of a restored native environment which will include trails and native landscaping.

LEAD AGENCY: City of Eureka, 531 "K" Street, Eureka, CA 95501-1165

CONTACT PERSON: Lisa D. Shikany; *phone*: (707) 268-5265; *fax*: (707) 441-4202; *e-mail*: lshikany@ci.eureka.ca.gov

INTRODUCTION: On April 14, 2008, the above described project was approved by the Planning Commission of the City of Eureka; mitigation measures were made a condition of project approval. The purpose of this MMRP is to ensure that the mitigation measures adopted in connection with project approval are effectively implemented. This MMRP establishes the framework that the City of Eureka and others will use to implement the adopted migration measures and the monitoring and/or reporting of such implementation.

CEQA provides that the City of Eureka may choose whether the MMRP will monitor mitigation, report on mitigation, or both. "Reporting" generally consists of a written compliance review that is

3.1 CULTURAL RESOURCES

3.1.1 Archaeological impacts from cleanup and treatment of contaminated soil.

Mitigation 3.1.1a: The Tribe shall implement the provisions stipulated by the MOA between the Wiyot Tribe, USACE, and SHPO that prescribes measures to avoid or minimize adverse effects to CA-HUM-67 (The MOA is a confidential document that is on file with the City of Eureka). The MOA stipulates implementation of the Historic Property Treatment Plan for Recovery of Significant Archaeological Data at CA-HUM-67 for the Tuluwat Restoration Project (HPTP), which sets forth an archaeological data recovery plan for the "targeted excavation area" involving treatment of contaminated soil in the vicinity of the way runners. The provisions of HPTP shall also be implemented for ground-disturbing activities in other areas of the project site. The HPTP prescribes proper protocol for protecting cultural resources, including but not limited to: the requirement that all field and laboratory work be directed by a qualified Principal Investigator, assisted by one or more Cultural Monitors designated by the Wiyot Tribe; proper field methodology; protocol for discovery of Native American burials or other sensitive finds, including proper notifications; and protocol for post-review discoveries and unanticipated effects.

Timing/Milestones – Implementation of the MOA shall begin prior to any ground disturbing activities associated with soils remediation activities and/or construction, and shall occur throughout these activities and beyond as dictated by the MOA.

Responsibility for Oversight – City of Eureka Building and Community Development Departments

Implementation of Mitigation Measure – Pursuant to the MOA, the Army Corps of Engineers is charged with ensuring that adverse effects to archeological resources associated with CA-HUM-67 are resolved by implementing and completing the Historic Property Treatment Plan for Recovery of Significant Archaeological Data at CA-HUM-67 for the Tuluwat Restoration Project (HPTP). Any correspondence or reports provided to the ACOE or SHPO by the Wiyot Tribe, or prepared by the ACOE or SHPO associated with the implementation of the HPTP shall also be provided to the Community Development Department. The Wiyot Tribe shall provide notification to the Community Development Department five days prior to the beginning of any work subject to the MOA, and shall provide documentation that all work subject to the MOA was completed in accordance with said document, including the report required in Section IV of the MOA.

Responsibility for Implementation – Wiyot Tribe and contractor(s)

. . . . . .

Mitigation 3.1.1b: If, during construction, subsurface archaeological resources (or materials that may be considered to be archaeological resources) are encountered, in addition to notification protocol identified in the HPTP, City staff shall be notified immediately.

Timing/Milestones – Throughout the construction process, including soil remediation, building construction, and any other activities involving soil disturbance

Responsibility for Oversight – City of Eureka Building and Community Development Departments

Implementation of Mitigation Measure –The Building and Community Development Departments shall be notified immediately of any archaeological resources discoveries, in a manner agreed upon prior to the start of any excavation work. The Building and Community Development Departments shall be empowered to enforce and shall enforce any required work stoppages at the location of the find as determined by the MOA and/or existing state or local regulations. Work in the vicinity of the find shall not recommence until specifically authorized by the MOA and with the approval of the Community Development Department.

Responsibility for Implementation – Wiyot Tribe and contractor(s)

. . . . . .

Mitigation 3.1.1c: Only low ground pressure tracked equipment will be employed at the project site to minimize disturbance to the archaeological deposit.

Timing/Milestones – Throughout the construction process, including soil remediation, building construction, and any other activities involving soil disturbance.

Responsibility for Oversight – City of Eureka Building and Community Development Departments

Implementation of Mitigation Measure – As required for all mitigation measures, this measure shall be part of construction and design documents, which shall specify compliance with this measure. City inspectors shall ensure that equipment utilized onsite is in compliance with this measure.

Responsibility for Implementation – Wiyot Tribe and contractor(s)

. . . . . .

Mitigation 3.1.1d: Cultural resources such as artifacts or human remains unearthed during the excavation and removal of contaminated material may be re-interred on-site and in compliance with the MOA under the following conditions:

A. Cultural resources with dioxin levels at or below naturally occurring background dioxin levels for the Humboldt Bay Area, as demonstrated to the satisfaction of the North Coast Regional Water Quality Control Board (NCRWQCB) prior to re-internment of these resources, may be re-interred directly into on-site soils.

B. Cultural resources with suspected or confirmed dioxin levels above naturally occurring background levels may be re-interred on-site by placing them in a waterproof stainless steel container deemed acceptable and sufficient by the NCRWQCB to protect the environment from contact with the contaminated contents of any such container now and into perpetuity. A material other than stainless steel may be substituted if deemed culturally acceptable by the Wiyot Tribe and if approved by the NCRWQCB to be at least functionally equivalent to stainless steel in regard to protection of the surrounding environment from contaminated resources. Any such container shall be re-interred in an area already impacted by dioxin contamination, to the extent feasible.

C. The Tribe shall obtain City and NCRWQCB approval of the location of any cultural resource re-internment sites prior to re-internment. Re-internment shall be conducted using only hand tools (i.e. no mechanized equipment), unless re-internment will occur in areas where heavy equipment has been allowed for construction purposes.

Timing/Milestones – Throughout the construction process, including soil remediation, building construction, and any other activities involving soil disturbance.

Responsibility for Oversight – City of Eureka Building and Community Development Departments

Implementation of Mitigation Measure – The Community Development shall be notified of any cultural resource discoveries as noted above, and of the Tribe's intent to re-inter cultural resources. Prior to any re-interment any such cultural resources, the Wiyot Tribe shall submit to the Community Development Department written documentation from the NCRWQCB indicating that the NCRWQCB finds the re-interment will be in compliance with the terms of this mitigation measure. No re-interment shall occur until the Community Development Department notifies the Wiyot Tribe of the City's determination that the re-interment is in compliance with this measure.

Responsibility for Implementation – Wiyot Tribe and contractor(s)

3.1.2 Archaeological impacts from development activities and visitor use.

Same as *Mitigation 3.1.1a-d* N/A

Mitigation 3.1.2a: The Tribe shall develop and implement a Management Plan that includes measures to protect cultural resources from direct or indirect disturbance from site visitors. Measures may include, but are not limited to, controlling the time of visits, the number of visitors, the areas visitors can access, and visitor activities.

Timing/Milestones – Prior to issuance of a certificate of occupancy and ongoing for the life of the project

Responsibility for Oversight – City of Eureka Building and Community Development Departments

Implementation of Mitigation Measure – The Management Plan shall be submitted to the Community Development Department for administrative approval based on a determination by the Department that the plan meets the intent of this measure. It is anticipated this Plan will be incorporated into the Site Use Management Plan required by Mitigation Measure 3.4.1c.

Responsibility for Implementation – Wiyot Tribe

. . . . . .

Mitigation 3.1.2b: Landscaping vegetation (on the midden) shall be limited to those species that

Site Cleanup Plan

Tuluwat Village, Indian Island
Eureka, California

Prepared for:

Table Bluff Reservation
Wiyot Tribe

SHN Consulting Engineers & Geologists, Inc.
812 W. Wabash
Eureka, CA 95501-2138
707-441-8855

March 2006
004178.100

CONSULTING ENGINEERS & GEOLOGISTS, INC.
812 W. Wabash • Eureka, CA 95501-2138 • 707-441-8855 • Fax 707-441-8877 • info@shn-eureka.com

Reference: 004178.100

March 15, 2006

Bonnie Rolandelli
Regional Water Quality Control Board, North Coast Region
5550 Skylane Blvd., Suite A
Santa Rosa, CA 95403

Subject: Site Cleanup Plan, Tuluwat Village; Indian Island, Eureka, California

Dear Ms. Rolandelli:

Enclosed please find a copy of the Site Cleanup Plan for the Tuluwat Village Site, Indian Island, Eureka, Humboldt County, California. This plan includes a description of the activities used for profiling soils and way runners and recommendations for soil and wood disposal. Also included is a brief discussion of the excavation and proposed permeable cap to be installed at the site.

Please don't hesitate to contact me if you have any questions.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Michael K. Foget, P.E.
Project Manager

MKF/RMR:lms
Enclosure: Report
copy w/encl: Susanne Perkins, EPA
Gail Jones, EPA
Andrea Davis, Table Bluff Reservation, Wiyot Tribe
copy w/o encl: Jim Clark, HCDEH
Mike Wilson, HWR

Reference: 004178.100

Site Cleanup Plan

Tuluwat Village, Indian Island
Eureka, California

Prepared for:

Table Bluff Reservation
Wiyot Tribe

Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash
Eureka, CA 95501-2138
707-441-8855

March 2006

QA/QC: FBL___

Site Cleanup Plan

Table Bluff Reservation
Wiyot Tribe
Tuluwat Village, Indian Island
Eureka, California

Approvals

Michael K. Foget, P.E., Senior Engineer Director of Environmental Services	Date
Frans Lowman, CHG Project Quality Assurance Officer	Date
EPA Project Officer	Date
EPA QA Manager	Date

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Abbreviations and Acronyms

mg/Kg	milligrams per Kilogram
mg/L	milligrams per Liter
pg/g	picograms per gram
ppm	parts per million
ug/g	micrograms per gram
ug/Kg	micrograms per Kilogram
<	denotes a value that is "less than" the method detection limit
>	denotes a value that is "greater than" the method reporting limit

a-BHC	alpha-Benzene Hexachloride
Ag	Silver
As	Arsenic
ASTM	American Standard Test Method
B	Benzene
Ba	Barium
b-BHC	beta-Benzene Hexachloride
Be	Beryllium
BGS	Below Ground Surface
CAM	California Assessment Manual
Cd	Cadmium
Co	Cobalt
Cr	Chromium
Cu	Copper
DOT	Department of Transportation
EDR	Environmental Data Resources, Inc.
EPA	U.S. Environmental Protection Agency
Hg	Mercury
ITSI	Innovative Technical Solutions Inc.
Mo	Molybdenum
Ni	Nickel
PAHs	Polynuclear Aromatic Hydrocarbons
Pb	Lead
PCBs	Polychlorinated Biphenyls
PCP	Pentachlorophenol
PRG	Preliminary Remedial Goal
QAPP	Quality Assurance Project Plan
RWQCB	California Regional Water Quality Control Board, North Coast Region
Sb	Antimony
SCP	Site Cleanup Plan
Se	Selenium
SHN	SHN Consulting Engineers & Geologists, Inc.
SSL	Soil Screening Levels
SVOCs	Semivolatile Organic Compounds
TEQ	Toxicity Equivalent Quotient
Tl	Thallium
TPH-O	Total Petroleum Hydrocarbons as Oil
Tribe	Table Bluff Reservation, Wiyot Tribe
USCS	Unified Soil Classification System
Vn	Vanadium
VOCs	Volatile Organic Compounds
WR-#	Way Runner sample-number
Zn	Zinc

1.0 Introduction

SHN Consulting Engineers & Geologists, Inc. (SHN) has been retained by the Table Bluff Reservation Wiyot Tribe (Tribe) to prepare and implement this Site Cleanup Plan (SCP). This SCP describes the soil profiling and proposed field program at the Tuluwat Village (site), located on Indian Island, Eureka, California. A boat dry dock and boat repair facility operated sporadically on the site from 1870 to 1990 (ITSI, January 2002).

The Tuluwat Village is a culturally sensitive area located within an ancient shell mound that covers approximately 6 acres and is approximately 14 feet thick. The mound contains Wiyot ancestral remains along with other sacred artifacts. Due to the sensitive nature of the site, there are no locations where excavated soils or way runner wood debris can be stockpiled prior to disposal. In this unique situation, the excavated soils and way runner wood must be placed directly into transportation containers and removed from the site for disposal. To properly dispose of the generated materials, they were profiled in accordance with the guidelines set up by the facilities that will accept these materials. Therefore, both the soil and way runner wood were profiled before the removal work is to be conducted. As part of this field effort, soil and wood will be removed and disposed. Also included is a conceptual design for a permeable cap for the site.

1.1 Report Organization

The information in this work plan is presented in seven sections. This section serves as an introduction and discusses a brief background of the site, including a site description. Section 2.0 presents the objective and scope of work. Section 3.0 describes the field program. Section 4.0 presents the proposed soil excavation and Section 5.0 describes the permeable cap. Section 6.0 lists a proposed schedule, and Section 7.0 lists cited references.

1.2 Project Personnel

Table 1 shows the list of project personnel.

Table 1
Project Personnel
Tuluwat Village, Indian Island, Eureka, California

Title/Responsibility	Name	Phone Number
EPA[1] Project Manager	Susanne Perkins	415-972-3208
RWQCB[2] Project Manager	Bonnie Rolandelli	707-576-2220
Tribal Representative	Andrea Davis	707-733-5055
Project Manager	Mike Foget	707-441-8855
Staff	Roland Rueber	707-441-8855
	Aaron Melody	707-441-8855
	Chris Fisher	707-441-8855
Quality Assurance Manager	Frans Lowman	707-441-8855
Analytical Laboratories	North Coast Laboratories, Inc. Frontier Analytical	707-822-4649 916-934-0900

1. EPA: Environmental Protection Agency
2. RWQCB: Regional Water Quality Control Board, North Coast Region

1.3 Statement of Specific Problem

The site is a 1.5-acre parcel of land on the southeast portion of Indian Island located in Humboldt Bay, Eureka, California. The site is part of a 6-acre shell mound known as the Wiyot Tribe's Tuluwat Village. Between 1870 and 1990, the site was used as a dry dock for boat repair and maintenance. Hazardous materials, consisting of paints, solvents, metals, petroleum products, and various other chemicals used in ship maintenance and repair, are known to have been used on the site. In 2000, a contractor removed approximately 1,300 pounds of identifiable hazardous wastes from the site (Weston, 2002). Soil samples collected from the site indicate that hazardous materials remain in site soils (Weston, 2003 and 2005). Recommendations for site remediation by Weston (2005) included removing the treated wood that comprise the way runners and define the full horizontal and vertical extent of Pentachlorophenol (PCP) contaminated soil in the vicinity of the way runners.

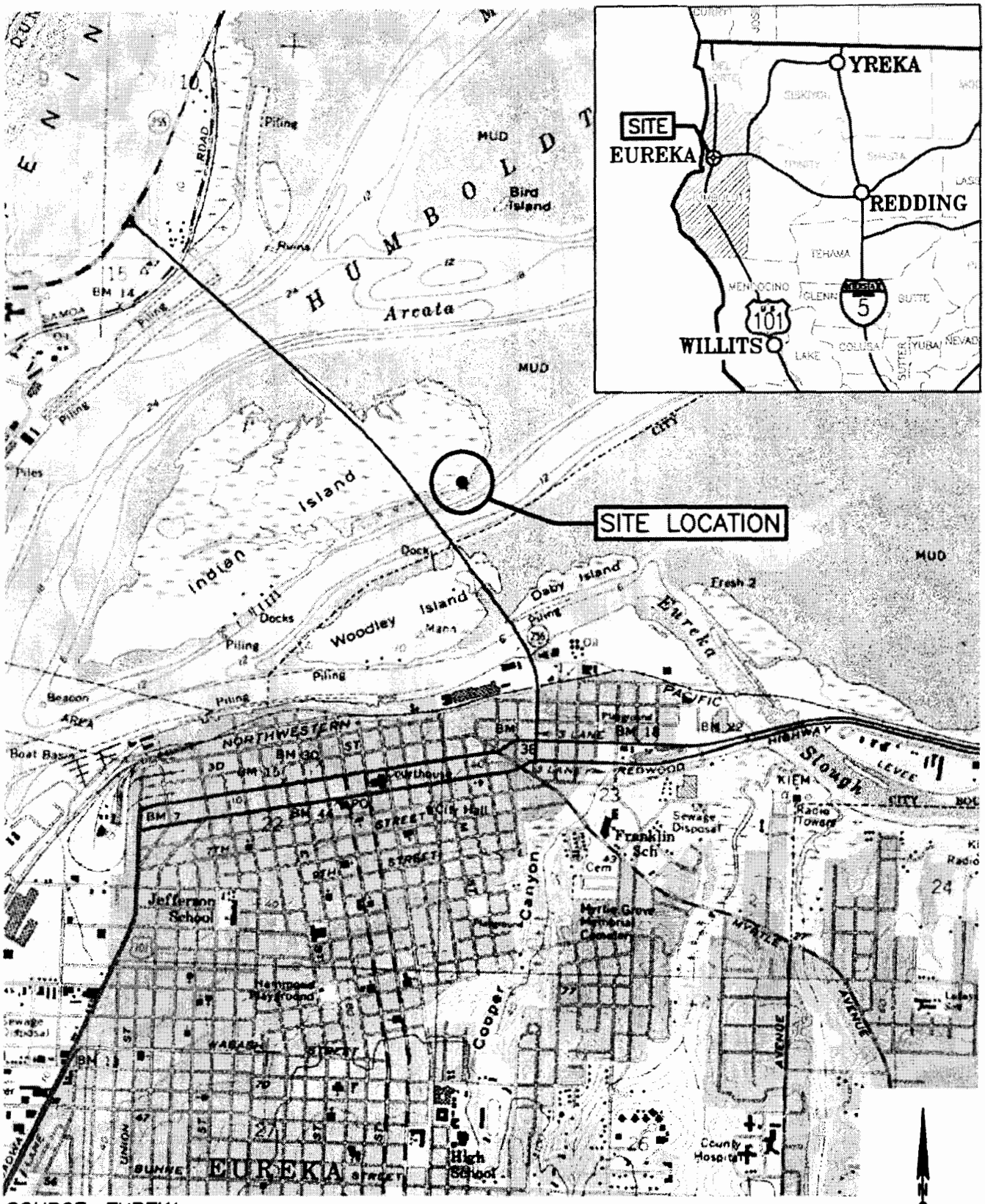
1.4 Background

1.4.1 Location and Description

The site is located on the southeast portion of Indian Island (Figure 1). Indian Island is the largest of 3 islands within Humboldt Bay, approximately 0.5 miles off the north shoreline of the City of Eureka, Humboldt County, California (Latitude 40° 48' 55" North, Longitude 124° 9' 29" West). Not including tidelands, the island is approximately 273 acres. The site is bordered to the north by the historic shell mound of the Tribe's Tuluwat Village site, followed by salt marshlands, and then the Samoa Channel of Humboldt Bay. The site is bordered to the south by the Middle Channel of Humboldt Bay. The eastern boundary of the site is the historic shell mound of the Tribe's Tuluwat Village, followed by Humboldt Bay, and the salt marshlands of the island border the site to the west. The site itself is located within the shell mound that is approximately 14 feet deep. The mound is composed of human remains, tools, and other cultural artifacts, some of which have been carbon dated to approximately 900 A.D. (ITSI, 2002). A stand of cypress trees, which is a site of an Egret rookery, is located near the center of the island, and several residential properties are located along the southern shore. Currently, structures, equipment, and debris from an abandoned boat dry dock and boat repair facility occupy the Indian Island site (Weston, 2005). A site plan is included as Figure 2.

1.4.2 Operational History

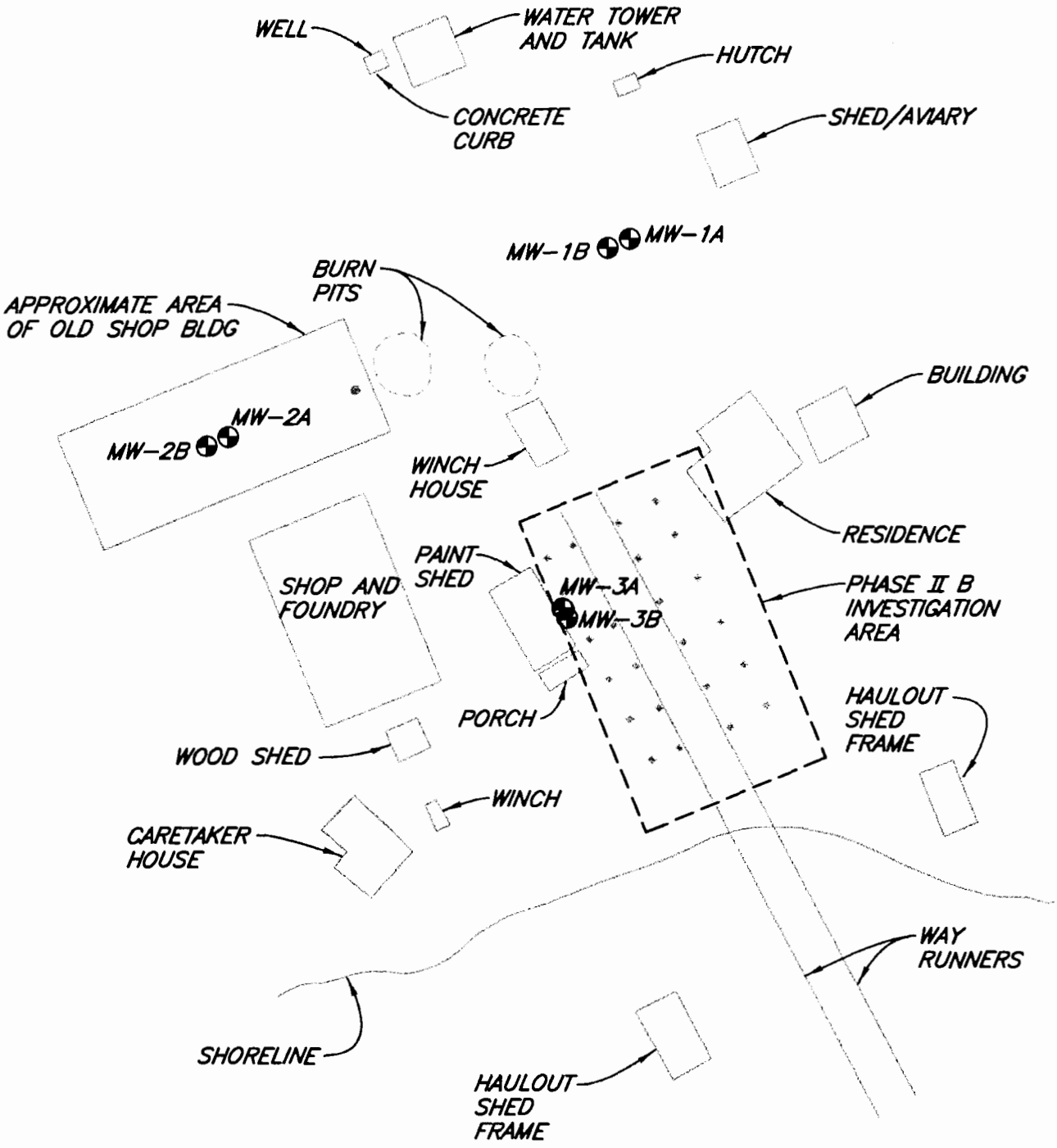
The summary of the operational history of the site was taken from the Weston, 2002 Phase II Investigation Sampling and Analysis Plan. From prehistoric times through 1860, the Wiyot Tribe occupied the island. The shell mound, which includes and surrounds the site, is the historical location of the Tuluwat Village as well as a sacred dance site in which the tribe celebrated their annual dance called the "World Renewal Ceremony." The village was believed to contain six to nine houses, including a sweathouse. In February 1860, a massacre occurred at the village during the "World Renewal Ceremony" and numerous members of the Wiyot Tribe were killed. Following the massacre, the surviving Wiyot people were removed from the island and relocated to reservations. From 1860 to 1924, the island was owned by Robert Gunther, and subsequently became known as "Gunther Island." To enlarge the island, Gunther constructed a series of dikes and used the land to raise cattle and vegetables. In the late 1860s and early 1870s, Gunther sold parcels of land along the southern shoreline of the island, during which several lumber mills were constructed. In 1870, a marine way and dry dock were constructed at the southeastern portion of



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'±

SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Site Location Map SHN 004178.100	
	APRIL 2005	004178.100-LOCATION	Figure 1



EXPLANATION

STRUCTURES

MW-1A MONITORING WELL LOCATION AND DESIGNATION

NOTE: BASE MAPPING BY: WESTON SOLUTIONS

1"=40'±

SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Site Plan SHN 004178.100	
	June, 2005	004178.100-SITE	Figure 2

the island. The dry dock was built on the subject site location. In 1886, a 410-foot marine railway was connected to the site; in 1894, a new and larger marine way and marine railway were built across the peninsula in Humboldt Bay. Other structures were also constructed during Gunther's ownership; however, none are believed to be standing at this time. In 1912, Gunther destroyed the dikes and allowed saltwater to flood the land. By 1962, the City of Eureka had purchased approximately 252 acres of the island, and the remaining 21 acres were privately owned. In 1970, the City of Eureka officially changed the name of the island to "Indian Island." By 1960, the site belonged to the Kay family, who continued to operate the boat works on the site until approximately 1990. The Kay family sold the site property to the Wiyot Tribe in March 2000.

Hazardous materials (consisting of paints, solvents, metals, petroleum products, and various other chemicals used in ship maintenance and repair) are known to have been used on the site. Throughout the boat dry dock and repair facility history, several structures were used for various operations conducted on the site. A wooden paint shed previously stored paints, coatings, and thinners used in the boat works operations. A small wooden winch house contains the apparatus used to pull vessels onto shore for repair, including a 6-cylinder engine. A metal-sided building was used as a shop and foundry, in which two kilns were used for foundry operations. The shop was also used to store turpentine and oil. Areas surrounding the shop and foundry building were used to store zinc plates and other containers. A wooden shop building, previously located behind the shop and foundry building, is believed to have also been used for the foundry operations. A wood burn pit, thought to have burned oil, was used to heat a boiler connected to a steam box, located behind the winch house. The area in which the way runners were used to move vessels onto land for repairs is believed to be where the ship painting and repair activity occurred. There are two other buildings on the site that are used as residential housing; a water tower and water well also exist on the site. The residence located at the southeastern end of the site may have been built with asbestos-containing materials. A majority of the structures located on site are still standing. Staining and burn areas are visible throughout the buildings and outside areas, and the site is littered with miscellaneous equipment and debris. Since 2000, the Tribe has removed a majority of the miscellaneous equipment and debris.

1.4.3 Previous Investigations and Regulatory Involvement

In 2000, an investigation was conducted for the Samoa Bridge Seismic Retrofit Project to characterize soil, sediment, and groundwater that would be encountered during the retrofit activities. Sediment samples were collected from six locations in the Middle Channel of Humboldt Bay. Analytical results indicated that metals (inorganics), Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), pesticides, Polychlorinated Biphenyls (PCBs), and dioxins were not detected. Arsenic was detected slightly above the United States Environmental Protection Agency (EPA) Industrial Soil Preliminary Remedial Goal (PRG) of 2.7 parts per million (ppm), but the levels were considered to be similar to background concentrations (Weston, 2002).

In 2001, a Phase I Targeted Brownfields Assessment was conducted on the site by Innovative Technical Solution, Inc. (ITSI, 2002). An electronic database search was conducted for the Phase I investigation by Environmental Data Resources, Inc. (EDR). According to the EDR report, the site was not listed in any state or federal databases. No sampling was conducted on the site.

In December 2002, as part of a Phase II Targeted Brownfields Site Investigation, Weston Solutions collected 20 soil, eight groundwater, and two building material samples. Complete results are included in the *Indian Island Phase II Targeted Brownfields Site Assessment* final report (Weston, 2003).

The following summary is from Weston's 2002 report.

- Analytical results indicate that soil and groundwater at the site have been impacted by historic site use. Total Petroleum Hydrocarbons as Oil (TPH-O) contamination in the soil is elevated above the action level in several areas; however, groundwater contamination was not evident from analytical data collected at the corresponding groundwater sample locations. TPH-O soil sample results exceeded the action level in the following areas: the north and southeast corners of the metal-sided shop and foundry building, the east and west sides of the adjacent wooden shed, around the perimeter of the paint shed, in the vicinity of the way runners, and around/underneath the winch house. Several Polynuclear Aromatic Hydrocarbons (PAHs) associated with petroleum contamination exceeded action levels in the same areas. PCP is present in soil significantly above its action level and corresponding PRGs in samples collected near the paint shed and way runners. Concentrations of alpha-Benzene Hexachloride (a-BHC), beta-Benzene Hexachloride (b-BHC), and dieldrin were detected above the EPA Soil Screening Levels (SSLs) in several samples collected throughout the site, but below EPA Residential PRGs. None of the SVOCs or pesticides present in the soil samples was detected in groundwater. Additionally, no VOC contamination was detected in the groundwater.
- Analytical results indicate the presence of dioxins in soil collected in areas around the way runners. The term "dioxins" is applied to a family of related compounds that have different toxicity values. To estimate the toxicity of dioxins that are found, a toxicity equivalency factor is applied to the dioxin-related compounds so that a Toxicity Equivalent Concentration (TEQ) for dioxins can be calculated. Using the dioxin TEQs that were calculated for dioxins found at the site, it appears that dioxins are present in soils near the way runners at concentrations above the EPA Industrial PRGs.
- Analytical results indicate the presence of several metals in the soil above action levels and background concentrations. The highest concentrations of aluminum, antimony, copper, and nickel were detected in an area of bluish-stained soil located within the footprint of the old shop building. It is likely that this material is a remnant of the foundry operations that occurred in this area. Concentrations of barium, cadmium, chromium, and silver were detected at several locations above action levels and background concentrations; however, all were below the EPA Residential PRGs. Arsenic and lead were detected throughout the site at concentrations exceeding EPA Residential PRGs. Iron and zinc were also detected above action levels and background concentrations. In addition to exceeding action levels, the highest concentrations of aluminum, copper, iron, and lead exceeded EPA Industrial PRGs at some locations.

In 2004, Weston Solutions conducted an additional Phase II targeted Brownfields site assessment. Soil samples were collected, the majority of which were from the vicinity of the way runners. Approximately 1 cubic yard of soil was excavated near the former shop and foundry, and below the former old shop building. Six groundwater-monitoring wells were installed and groundwater samples were collected from each well. Complete and final results and site maps from the *Phase II Targeted Brownfields Site Assessment, Indian Island, Eureka, California Phase II B Addendum* (Weston, 2005) are included in Appendix A. Analytical results indicate that soils contaminated with PCP and metals occur primarily in the surface soils (less than 6 inches Below Ground Surface [BGS]) and generally were not detected at depths greater than 2 feet BGS.

2.0 Site Profiling Program

2.1 Objective

The objective of this work was to profile the PCP contaminated soil and wooden way runners prior to their actual removal and disposal. The profiling will minimize impacts to this culturally sensitive area by eliminating the need to stockpile soil and way runner debris. As previously stated, this site is unique in that there is no place on site where material can be stockpiled.

As part of the site profiling work, soil samples were collected from temporary borings. Samples of the wood from the way runners and soil in the vicinity of the way runners were collected to determine a proper method and location for disposal. All work was conducted in accordance with the Sampling and Analysis Plan, the Quality Assurance Project Plan (QAPP), and the Site Safety Plan developed for this project (SHN, 2005). A site map showing the soil profile sample locations along with the Weston 2004 site investigation sample locations is presented as Figure 3.

2.2 Scope of Work

The scope of work included:

- installing 10 temporary soil borings at the site using a hand auger;
- collecting 14 soil samples for laboratory analysis;
- collecting two, three-point composite wood samples from the timbers that comprise the way runners;
- submitting soil and wood samples for laboratory analysis; and
- profiling materials for disposal using collected information.

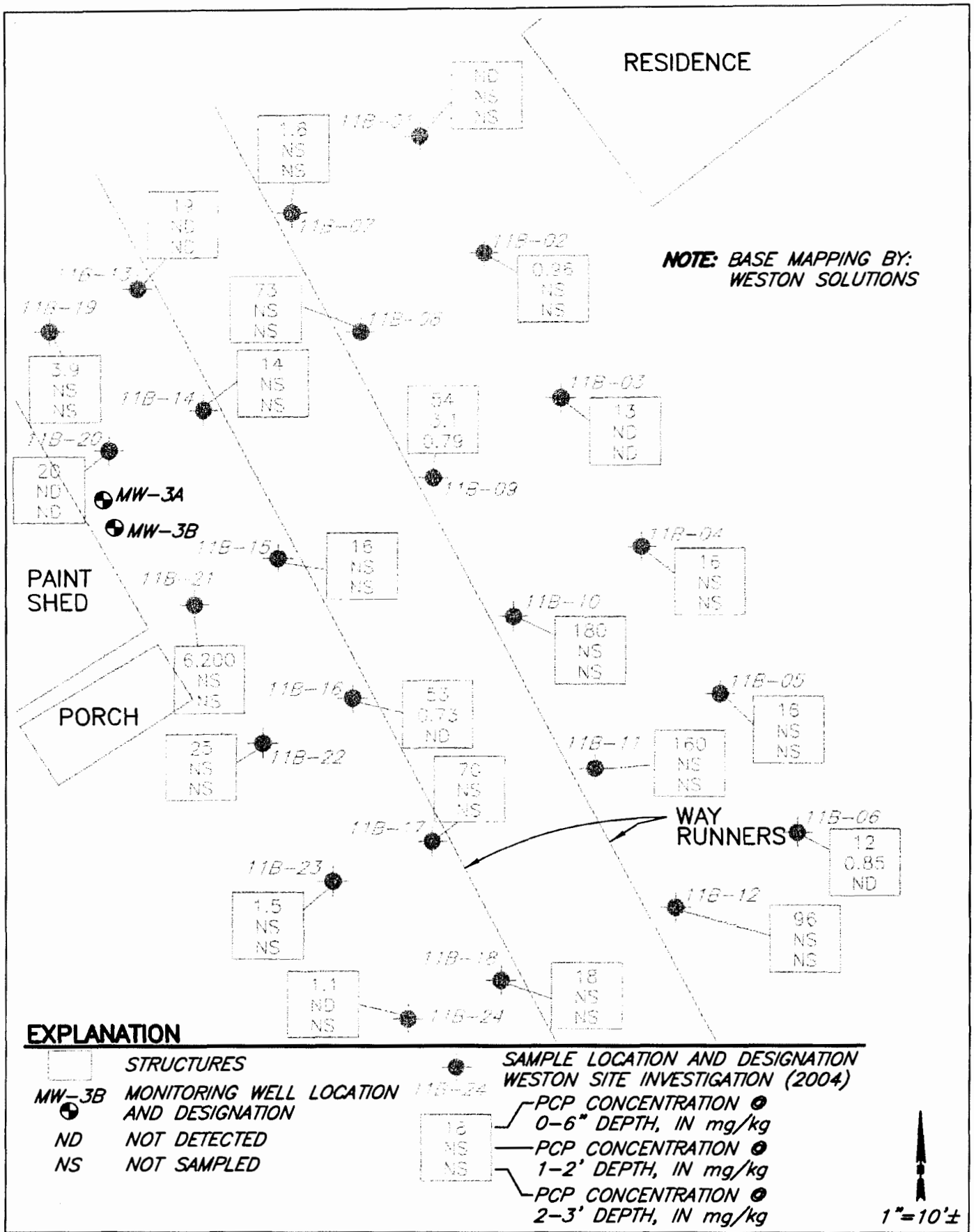
The information collected as part of the site-profiling program was used to prepare the Site Cleanup Plan (SCP) presented in Section 4 of this document. The SCP identifies disposal options for the wooden way runners and PCP contaminated soil, and a conceptual design for a permeable cap for the entire 1.5-acre facility.

2.3 Project Implementation

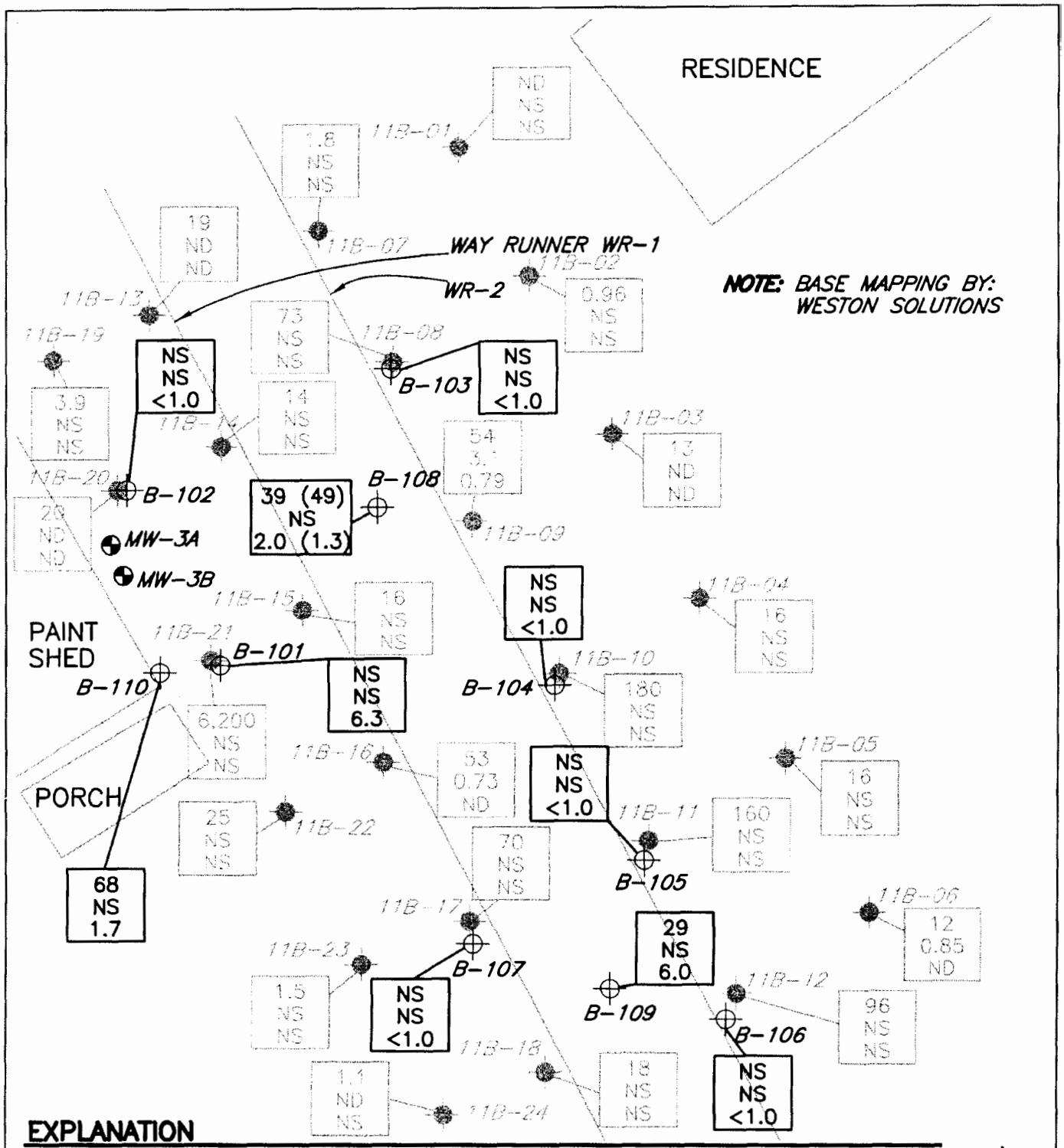
Prior to implementing site activities, boring permits were acquired from the Humboldt County Division of Environmental Health. Underground Service Alert was contacted at least 48 hours prior to drilling activities to mark any underground utilities that are present in the site area.

2.4 Soil Sampling

On November 9, 2005, ten soil borings were advanced at the site in the vicinity of the way runners. Soil boring locations are shown on Figure 4. Soil borings are located in the vicinity of previous soil borings (Appendix A) where concentrations of PCP in soil were found to exceed 50 mg/Kg. Soil samples were collected in sequence, at discrete intervals, as each boring was advanced. Soil samples were collected for profiling the soil for proper disposal. The project manager was responsible for determining the number of samples to submit for laboratory analysis.



SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Weston Soil Boring Locations SHN 004178.100	
	January 2006	004178.100-SITE	Figure 3



EXPLANATION

- MW-3B — MONITORING WELL LOCATION AND DESIGNATION
- B-108 — SOIL BORING LOCATION AND DESIGNATION (SHN, 2005)
- ND — NOT DETECTED
- NS — NOT SAMPLED
- (49) — DUPLICATE RESULT
- 11B-24 — SAMPLE LOCATION AND DESIGNATION WESTON SITE INVESTIGATION (2004)
- 18 NS NS — PCP CONCENTRATION @ 0-6" DEPTH, IN mg/kg OR ug/g; PCP CONCENTRATION @ 1-2' DEPTH, IN mg/kg OR ug/g; PCP CONCENTRATION @ 2-3' DEPTH, IN mg/kg OR ug/g

1"=10'±

SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Summary of Soil Analytical Results, November 9, 2005 SHN 004178.100	
	December 2005	004178.100-SAR-OCT-05	Figure 4

Soil borings were advanced using a hand auger. Soil samples were collected directly from the hand auger bucket.

Significant cultural resources are present at the site, including human remains, tools, and other cultural artifacts. The Tribal cultural monitor directed SHN to not sieve the soil cuttings from the borings, and to backfill the borings with the cuttings.

One sample was collected from each of the borings B-101 through B-107 at depths between 2 and 3 feet BGS for laboratory analysis for PCP. One soil sample was collected from each of the borings B-108 through B-110 at depths between zero (0) and 0.6 feet BGS, and 1 sample was collected from each boring at depths between 2 and 3 feet BGS for laboratory analysis for PCP. Sample analysis at varying depths for select samples was needed to properly profile the soil that will be excavated and disposed. By analyzing soil samples at various depths, a more representative profile of contaminant concentrations can be obtained. This information is critical for soil-disposal profiling purposes.

One sample was collected from each depth for possible analysis for dioxins and furans for profiling purposes. Dioxins and furans are frequently associated with PCP, and this additional information was needed to adequately profile the soil for disposal.

Two duplicate samples were collected, one from boring B-108 at 0-0.5 feet BGS and one at boring B-108 at 2 to 3 feet BGS.

Each sample was labeled with location, depth, date and time of collection, analysis requested, and the sampler's initials. Soil samples from each boring were placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. The samples were analyzed for constituents listed in Section 2.8.

The hand auger and drive sampler used for sample collection were decontaminated prior to use, and between each borehole. Equipment was decontaminated according to procedures in Section 2.6.

Lithologic descriptions were recorded on boring log field sheets using the Unified Soil Classification System (USCS) as described in American Standard Test Method (ASTM) D 2488-90. This description included the USCS soil type, grain sizes and estimated percentages of each, angularity of sand and gravel sized particles, moisture condition, color, plasticity for fine-grained materials, consistency or density, odor, and any other pertinent information, such as degree of induration, and presence of fossils and other distinctive materials.

Upon completion of soil sampling, each boring was backfilled with the soil cuttings from the representative borehole, as directed by the Tribal cultural monitor. Field notes and boring logs are included in Appendix B.

2.5 Way Runner Sampling

Two, 3-point composite samples of wood from the way runners were collected for laboratory analysis. The wood was sampled using a hand drill with a wood boring auger bit. The wood-boring bit was advanced into the treated wood, and the wood cuttings were placed in laboratory-supplied containers.

Each wood sample was labeled with location, date and time of collection, analysis requested, and the sampler's initials. Wood samples were placed in an iced cooler and transported under chain-of-custody documentation to a State of California-certified analytical laboratory for chemical analysis. Samples were analyzed for constituents listed in Section 2.8.

The wood-boring bit was decontaminated between each hole as outlined in Section 2.6.

2.6 Equipment Decontamination Procedures

All boring, sieving, and wood-boring equipment was cleaned prior to being brought on site. All small equipment that required on-site cleaning was cleaned using the triple wash system. The equipment was first washed in a water solution containing Liquinox® cleaner, followed by a distilled water rinse, then by a second distilled water rinse.

All decontamination water was stored in approved and labeled Department of Transportation (DOT) 17 E/H, 55-gallon drums, and handled in accordance with procedures described in Section 2.7.

2.7 Waste Management

All soil cuttings produced during the soil boring activities were placed back into each boring as directed by the Tribal cultural monitor.

All water produced during decontamination activities was placed in DOT-approved 17E/H, 55-gallon drum. The water was transported to SHN's 1,000-gallon water storage tank, and was tested prior to discharge (under permit) to the City of Eureka's wastewater collection system. Approximately 12 gallons of decontamination water was produced during site activities. A discharge receipt is included in Appendix B.

2.8 Laboratory Analysis

Soil samples were analyzed for PCP in general accordance with the Canadian Pulp Report Method.

Four soil samples were analyzed for dioxins and furans in general accordance with EPA Method 8290. The project manager was responsible for determining which samples to analyze for dioxins and furans.

Three composite soil samples were analyzed for:

- Benzene in general accordance with EPA Method No. 8021B.
- California Administrative Manual (CAM 17) metals in general accordance with EPA Method Nos. 6010B or 7471A.
- SVOCs in general accordance with EPA Method No. 8270.
- Aquatic Toxicity Screening

Wood samples from the way runners were analyzed for:

- PCP in general accordance with the Canadian Pulp Report Method.
- Benzene in general accordance with EPA Method No. 8021B.

- CAM 17 metals in general accordance with EPA Method Nos. 6010B or 7471A.
- SVOCs in general accordance with EPA Method No. 8270.
- Aquatic Toxicity Screening

Soil samples were submitted to North Coast Laboratories of Arcata California for analysis. Samples for dioxins and furans were submitted to Frontier Analytical Laboratory in El Dorado Hills, California.

3.0 Results of the Profiling

3.1 Way Runner Profiling

Analytical results from the wood samples from the way runners are shown in Table 2. Laboratory analytical reports are included in Appendix C. PCP was detected only in way runner sample WR-1 at a concentration of 1.2 micrograms per gram (ug/g). Low concentrations of certain metals were detected in both wood samples. Low concentrations of two SVOCs were detected in way runner sample WR-2. Based on the results of the wood sampling, the material will be loaded into a bin and taken to an appropriate facility for disposal.

Table 2
Way Runner Analytical Results, November 9, 2005
Tuluwat Village, Eureka, California

Sample Location	PCP[1] (ug/g)[2]	B[1] (ug/g)	Ba[1] (ug/g)	Be[1] (ug/g)	Cd[1] (ug/g)	Cr[1] (ug/g)	Co[1] (ug/g)	Cu[1] (ug/g)	Pb[1] (ug/g)	Mo[1] (ug/g)	Ni[1] (ug/g)	Ag[1] (ug/g)	Vn[1] (ug/g)	Zn[1] (ug/g)	Hg[1] (ug/g)
WR-1	**1.2**	<0.10[3]	**14**	<0.50	<2.0	<2.0	<2.0	**47**	<10	<3.0	<5.0	<2.0	<2.0	**21**	**0.18**
WR-2	<1.0	<0.020	**36**	<0.50	<2.0	**9.2**	**2.8**	**310**	**39**	<3.0	**9.8**	<2.0	**4.5**	**120**	**2.4**

Sample Location	As[1] (ug/Kg)[4]	Se[2] (ug/Kg)	Sb[2] (ug/Kg)	Tl[2] (ug/Kg)	SVOCs[5] (ug/Kg)	Aquatic Toxicity LC50 (mg/L)[6]
WR-1	**1,400**	<1,000	<1,000	<1,000	ND	>750[7]
WR-2	**8,400**	<1,000	<1,000	<1,000	**ND except Fluoranthene =80,000 and Pyrene = 69,000**	>750

1. PCP: Pentachlorophenol, B: Benzene, Ba: Barium, Be: Beryllium, Cd: Cadmium, Cr: Chromium, Co: Cobalt, Cu: Copper, Pb: Lead, Mo: Molybdenum, Ni: Nickel, Ag: Silver, Vn: Vanadium, Zn: Zinc, Hg: Mercury, As: Arsenic, Se: Selenium, Sb: Antimony, Tl: Thallium
2. ug/g: micrograms per gram
3. <: denotes a value that is "less than" the method detection limit.
4. ug/Kg: micrograms per Kilogram
5. SVOCs: Semivolatile Organic Compounds analyzed in general accordance with EPA Method No 8270. See laboratory analytical report for individual constituents and detection limits.
6. mg/L: milligrams per Liter
7. >: denotes a value that is "greater than" the method reporting limits.

3.2 Soil Profiling

Results from the soil samples taken for disposal profiling are shown in Tables 3 through 6, and summarized on Figure 4. Laboratory analytical reports are included in Appendix C.

Table 3
Pentachlorophenol Soil Analytical Results, November 9, 2005
Tuluwat Village, Eureka, California
(in ug/g)[1]

Sample Location/ Depth (feet)	Pentachlorophenol
B-101 @ 2-3'	6.3
B-102 @ 2-3'	<1.0[2]
B-103 @ 2-3'	<1.0
B-104 @ 2-3'	<1.0
B-105 @2-3'	<1.0
B-106 @ 2-3'	<1.0
B-107 @ 2-3'	<1.0
B-108 @ 0-0.6'	39
Dup-1 @ 0-0.6' [3]	49
B-108 @ 2-3'	2.0
Dup-1 @ 2-3'	1.3
B-109 @ 0-0.6'	29
B-109 @ 2-3'	6.0
B-110 @ 0-0.6'	68
B-110 @ 2-3'	1.7

1. ug/g: micrograms per gram
2. <: denotes a value that is "less than" the method detection limit.
3. Dup-1: duplicate sample for B-108

Table 4
Soil Profiling Analytical Results, November 9, 2005
Tuluwat Village, Eureka, California

Sample Location	B[1] (ug/g)[2]	Ba[1] (ug/g)	Be[1] (ug/g)	Cd[1] (ug/g)	Cr[1] (ug/g)	Co[1] (ug/g)	Cu[1] (ug/g)	Pb[1] (ug/g)	Mo[1] (ug/g)	Ni[1] (ug/g)	Ag[1] (ug/g)	Vn[1] (ug/g)	Zn[1] (ug/g)	Hg[1] (ug/g)
B-101/B-102/B-110 Composite	<0.0050[3]	93	<0.50	<2.0	39	4.8	8,500	330	<3.0	26	<2.0	20	1,900	4.0
B-105/B-106/B-107 Composite	<0.0050	150	<0.50	<2.0	36	6.2	1,700	350	<3.0	35	<2.0	26	400	6.4
B-103/B-104/B-108 Composite	<0.0050	770	<0.50	3.9	49	9.1	8,800	2,000	<3.0	35	<2.0	24	2,400	200

Sample Location	As[1] (ug/Kg)[4]	Se[1] (ug/Kg)	Sb[1] (ug/Kg)	Tl[1] (ug/Kg)	SVOCs[5] (ug/Kg)	Aquatic Toxicity LC50 (mg/L)[6]
B-101/B-102/B-110 Composite	13,000	<1,000[5]	<1,000	<1,000	ND[7]	<250
B-105/B-106/B-107 Composite	1,300,000	2,300	12,000	<1,000	ND	<250
B-103/B-104/B-108 Composite	10,000	<1,000	1,700	<1,000	ND Except Phenanthrene = 3,400, Fluoranthene = 3,800, and Pyrene = 4,400	>750[8]

1. B: Benzene, Ba: Barium, Be: Beryllium, Cd: Cadmium, Cr: Chromium, Co: Cobalt, Cu: Copper, Pb: Lead, Mo: Molybdenum, Ni: Nickel, Ag: Silver, Vn: Vanadium, Zn: Zinc, Hg: Mercury, As: Arsenic, Se: Selenium, Sb: Antimony, Tl: Thallium.
2. ug/g: micrograms per gram
3. <: denotes a value that is "less than" the method detection limit.
4. ug/Kg: micrograms per Kilogram
5. SVOCs: Semivolatile Organic Compounds analyzed in general accordance with EPA Method No 8270. See laboratory analytical report for individual constituents and detection limits.
6. mg/L: milligrams per Liter
7. ND: Nondetectable
8. >: denotes a value that is "greater than" the method reporting limit.

3.3 Dioxin and Furan Analytical Results

Analytical results for dioxin and furan compounds in soil are shown in Table 5.

Table 5
Soil Analytical Data-Dioxin and Furan Compounds, November 9, 2005
Tuluwat Village, Eureka, California
(in pg/g)[1]

Dioxin or Furan Compound	Sample Identification			
	B-101 @ 2-3'	B-107 @2-3'	B-109@ 0-0.6'	B-110 @ 0-0.6'
2,3,7,8-TCDD	5.44	2.38	173	41.6
1,2,3,7,8-PeCDD	117	7.55	491	1,250
1,2,3,4,7,8-HxCDD	421	9.39	983	5,730
1,2,3,6,7,8-HxCDD	1,100	12.8	7,570	15,200
1,2,3,7,8,9-HxCDD	681	8.99	2,080	8,790
1,2,3,4,6,7,8-HpCDD	44,300	187	430,000	1,100,000
OCDD	246,000	1,150	4,480,000	8,910,000
Total Tetra-Dioxins	25.6	80.3	1,350	296
Total Penta-Dioxins	252	121	3,650	3,020
Total Hexa-Dioxins	4,200	165	32,800	66,200
Total Hepta-Dioxins	62,400	339	673,000	1,750,000
2,3,7,8-TCDF	1.96	24.0	90.5	43.8
1,2,3,7,8-PeCDF	4.72	33.5	82.5	61.9
2,3,4,7,8-PeCDF	6.65	84.7	82.5	72.6
1,2,3,4,7,8-HxCDF	179	109	1,770	2,250
1,2,3,6,7,8-HxCDF	94.9	84.1	528	1,210
2,3,4,6,7,8-HxCDF	200	148	1,290	2,660
1,2,3,7,8,9-HxCDF	26.3	17.7	390	364
1,2,3,4,6,7,8-HpCDF	6,840	510	65,100	76,700
1,2,3,4,7,8,9-HpCDF	647	17.6	6,110	6,420
OCDF	18,900	126	230,000	201,000
Total Tetra-Furans	84.4	1,100	585	655
Total Penta-Furans	383	1,080	2,190	3,300
Total Hexa-Furans	5,400	1,150	52,300	53,400
Total Hepta-Furans	25,700	716	307,000	258,000
TEQ[3] (World Health Organization)	941	103	7,660	17,700

1. pg/g: picograms per gram
2. TEQ: Toxicity Equivalent Quotient calculated for each sample

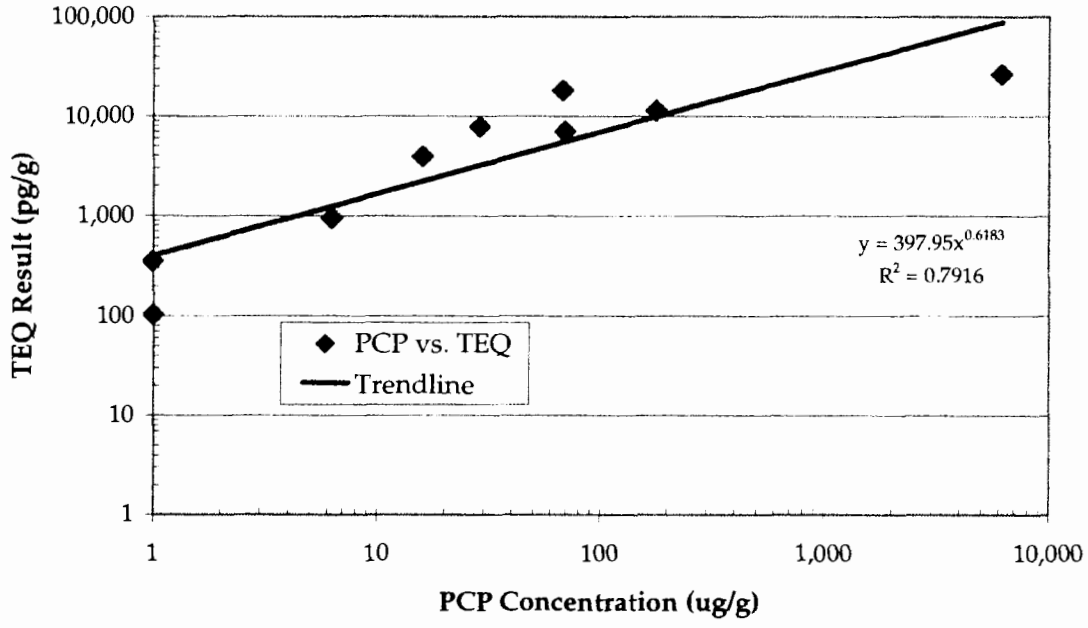
Laboratory analytical reports are included in Appendix C. Dioxin and furan Toxicity Equivalent Quotient (TEQ) concentrations were calculated by Frontier Analytical. The TEQ is used to calculate the toxicity of the dioxins and furans on a weighted basis by multiplying a Toxic Equivalency Factor (TEF) that has been assigned to each individual dioxin/furan compound. The TEF relates the toxicity of each compound to 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). The TEQ results show the higher concentrations are in the shallow soils at the site. Table 6 shows a comparison between PCP detected in soil versus the TEQ result from the same sample interval.

Table 6 Data for Comparison Graph Indian Island, Eureka, California			
Sample Identification	**Sample Date**	**PCP[1] Concentration (ug/g)[2]**	**TEQ[3] Result (pg/g)[4]**
B-107 @ 2-3	11/9/05	<1.0[5]	103
IIB-01-S[6]	4/26/04	<1.0	351
B-101 @ 2-3	11/9/05	6.3	941
IIB-05-S[6]	4/26/04	16	3,860
B-109 @ 0-0.6	11/9/05	29	7,660
B-110 @ 0-0.6	11/9/05	68	17,700
IIB-17-S[6]	4/26/04	70	6,860
IIB-10-S[6]	4/26/04	180	11,200
IIB-21-S[6]	4/27/04	6,200	26,200

1. PCP: Pentachlorophenol
2. ug/g: Micrograms per gram
3. TEQ: Toxicity Equivalent Quotient
4. pg/g: Picograms per gram
5. <: denotes a value that is "less than" the method detection limit.
6. Sample results from Weston Investigation 2005

Figure 5 graphically shows the comparison between the PCP results (in micrograms per gram [ug/g]) and the TEQ results (in picograms per gram [pg/g]) for all PCP/Dioxin data collected from the site. Non-detect values were plotted at the detection limit. The graph illustrates the correlation between PCP concentrations and TEQ results at the site.

Figure 5
PCP Concentrations vs TEQ Results
Indian Island, Eureka, California



3.4 Quality Assurance/Quality Control

Precision goals were outlined in the Final Quality Assurance Project Plan (SHN, 2005), and were reviewed with respect to the sample, and duplicate sample sets collected from boring B-108, which were analyzed for PCP. For sample B-108 @ 0-0.6, the Relative Percent Difference (RPD) between the two results was 23%. For sample B-108 @ 2-3, the RPD between the two samples was 42%. Precision goals for PCP were set at 25%.

The RPD for the laboratory control samples were above the upper acceptance limit for PCP and the laboratory surrogate. The RPD limit is 15%, and the calculated values were 15.1% for PCP and 15.2% for the surrogate. Due to this, the laboratory indicated that the PCP results could be variable, which may explain the high RPD for sample B-108 @ 2-3.

The soil samples for dioxin and furan analysis were extracted beyond the recommended hold time by approximately 19 days for samples B-107@2-3 and B-101@2-3 and 27 days for samples B-109@0-0.6 and B-110@ 0-0.6.

Accuracy goals were outlined in the Final Quality Assurance Project Plan (SHN, 2005), and were reviewed with respect to spiked sample recovery. The objective of 40% recovery of spiked samples was achieved for 16 of the 17 (94%) PCP analyses performed. All dioxin and furan analyses were well above the 40% recovery goal.

All laboratory quality control standards were within acceptable ranges. Details are in the laboratory analytical reports in Appendix C.

The QA/QC results indicate that accuracy goals were achieved. Precision goals were not achieved for all duplicate samples, however, for the purpose of waste profiling, the results are considered adequate. Confirmation sampling, upon completion of remedial work, will undergo a similar QA/QC review.

4.0 Site Remediation

The overall goal of this site remediation project is to adequately remediate the site so that it can be used once again for the benefit of the Table Bluff Reservation, Wiyot Tribe. The site cleanup strategy includes the following tasks:

1. Sample and coordinate disposal of the way runners and PCP-contaminated soils (due to the cultural significance of the site, profiling contaminated soil and the way runners for disposal prior to removal is required).
2. Remove and dispose of the way runners.
3. Conduct a limited excavation of PCP-contaminated soils in the vicinity of the way runners that exceed 50 mg/Kg of PCP or at the discretion of the Tribal cultural monitor.
4. Install a permeable cap with a geo-textile fabric over the entire 1.5-acre parcel to protect human health and limit potential exposure.

4.1 Soil Excavation

Proposed excavation areas are shown on Figure 6. The areas were chosen based on previous PCP analytical results, and the PCP analytical results from the soil profiling activities. The purpose of the excavation is to remove soil with PCP concentrations greater than 50 ug/g. Two areas will be excavated to approximately 6 inches below grade, and one area (in the vicinity of B-101 and B-110) will be excavated to a depth of approximately 1 foot below grade. The soil will be removed using a small track mounted backhoe or with hand tools. The material will be placed on Visqueen® so the tribal cultural monitor can inspect the excavated material and remove any culturally sensitive materials. The soil will then be placed into DOT 17E/H 55-gallon drums or into a covered metal bin. It is anticipated that approximately 17 cubic yards of material will be removed.

4.2 Screening Sampling

During the excavation of each area, soil samples will be collected from the excavation sidewalls and floor, and tested for PCP using a field test kit. The results of the screening sampling will be used to direct the excavation work in coordination with the Tribal cultural monitor.

4.3 Confirmation Soil Sampling

Confirmation soil samples will be collected at a frequency of one sample for each approximate 30 linear feet of sidewall, and one for every 450 square feet of excavation floor. Confirmation soil samples will be collected directly from the sidewall or floor of the excavation using a clean stainless steel trowel, and will be placed in laboratory supplied containers. It is anticipated that 12 confirmation soil samples will be collected. Soil samples will be analyzed for PCP in general accordance with the Canadian Pulp Report Method. Two samples will be collected for dioxin and furans and analyzed in general accordance with EPA Method No. 8290. The project manager will determine which samples to analyze for dioxins and furans based on the PCP results.

Confirmation soil samples will be collected and analyzed in general accordance with the previously approved QAPP.

The excavated areas will be backfilled to the existing grade with clean imported fill material.

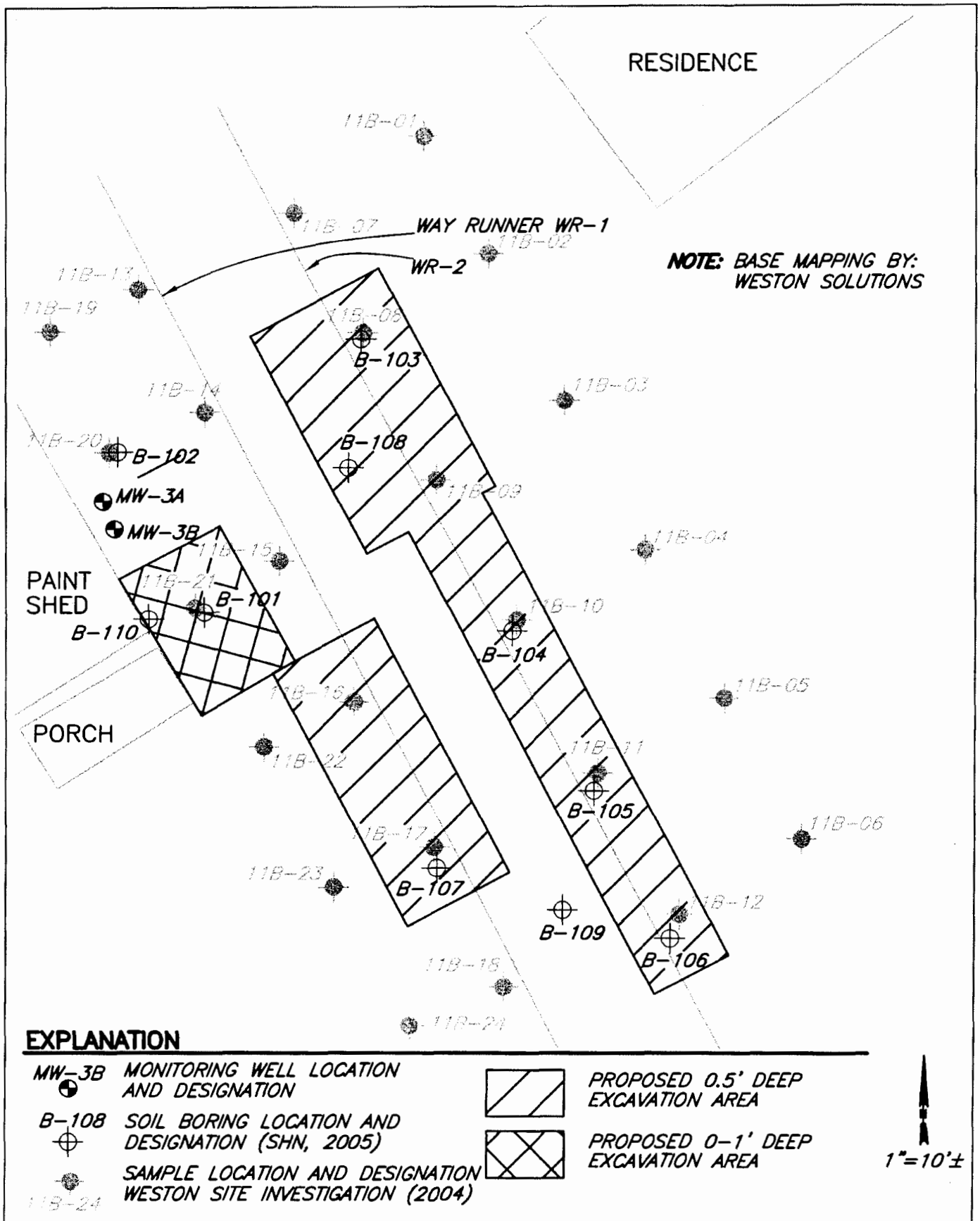
4.4 Waste Disposal

4.4.1 Soil Disposal

Excavated soils will be transported by Clean Harbors Environmental Services to either Aragonite, Utah for incineration or to Grassy Mountain, Utah for disposal in a hazardous material landfill.

4.4.2 Way Runner Disposal

The wood that comprises the way runners will be placed in a bin and transported to Forward Landfill in Manteca for disposal.



SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Proposed Excavation Area SHN 004178.100	
	December 2005	004178.100-PROP-EX	Figure 6

5.0 Permeable Cap

After excavation activities, a permeable cap with a geo-textile fabric or geogrid will be constructed over the majority of the 1.5-acre parcel to protect human health and limit potential exposure. The proposed location of the cap and a proposed cross section of the cap are included as Figure 7. The cap will be a minimum of 0.5 foot thick. The cap will consist of a layer of geo-textile fabric or geogrid placed on the existing ground surface and covered with a minimum of 0.5-foot of clean imported fill which will be compacted to approximately 80% relative compaction. Approximately 34,000 square feet of the site will be covered with geofabric and approximately 3,000 square feet will be covered with geogrid. The 0.5 foot thick fill layer is proposed due to the difficulty and associated expense of transporting fill material to the island. The fill material and the geofabric or geogrid will provide a physical barrier between the fill and existing soil, which will prevent any future potential exposure.

6.0 Schedule

Once the SCP approval is received, the final design for the soil cap will be prepared and bid documents will be prepared to secure an excavation contractor and the permit process will begin. The way runners will be removed prior to any excavation activities. It is anticipated that excavation work will occur within 180 days of approval of the SCP.

7.0 References Cited

Innovative Technical Solutions Inc. (2002). *Phase I Report Targeted Brownfields Assessment Indian Island, Humboldt Bay, Eureka, California.* Walnut Creek: ITSI.

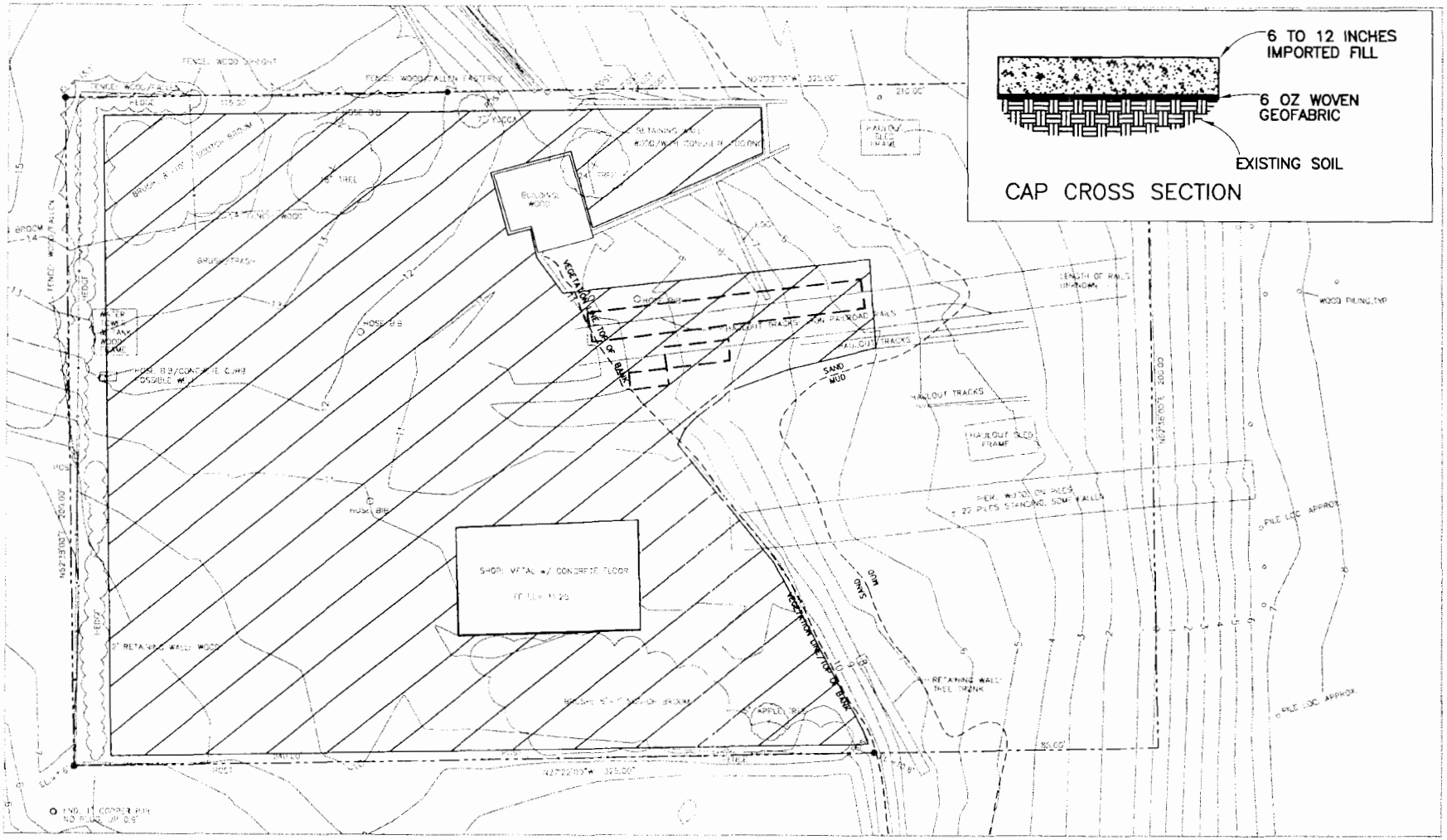
SHN Consulting Engineers & Geologists, Inc. (2005). Final Sampling and Analysis Plan, Tuluwat Village, *Indian Island Eureka, California.* Eureka: SHN.

U.S. Environmental Protection Agency. (October 2004). "Region 9 PRGs 2004 Table." NR: EPA. <http://www/epa/gov/regiona09/waste/sfund/prg/files/04prgtable.pdf>

Weston Solutions Inc. (2002). *Indian Island Eureka, California Targeted Brownfields Site Assessment Phase II Investigation Sampling and Analysis Plan.* Walnut Creek: Weston.

---. (2003). *Indian Island Phase II Targeted Brownfields Site Assessment.* Walnut Creek: Weston.

---. (2005). *Phase II Targeted Brownfields Site Assessment Indian Island Eureka, California, Phase II B Addendum.* Walnut Creek: Weston.



EXPLANATION

PROPOSED EXCAVATION AREA (APPROXIMATE)
PROPOSED CAP AREA (APPROXIMATE)

SCALE
1" = 30'

SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California		Proposed Cap Location 004178.100
	January 2006	004178.100-CAP	Figure 7

WORK PLAN

For

Indian Island IDS Cleanup
CIWMB Contract # IWM-C05067-D-F1

Prepared for:
State of California
Integrated Waste Management Board
1001 I Street
PO Box 4025
Sacramento, CA 95812-4025

Prepared by:
A.J. Diani Construction Co., Inc.
295 N. Blosser Rd.,
Santa Maria, CA

January 30, 2007

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1.0 INTRODUCTION

This work plan (WP) has been prepared by A.J. Diani Construction Co., Inc. (AJD) to discuss the procedures and methods that will be used to implement cleanup of an illegal disposal site (IDS) associated with previous commercial activities at the site. The property is located in the north east corner of Indian Island which lies in Humboldt Bay just north of the City of Eureka. This portion of the island is owned by the Wiyot tribe and is further identified as APN 405-01-002. The work proposed as part of this WP is being done to facilitate the cultural and historical restoration of the former Tuluwat village by the Wiyot Indians. This WP has been prepared in accordance with California Integrated Waste Management Board (CIWMB) Contract IWM-C05067, Work Order D-F1, and is based on information contained in the following:

- CIWMB Work Order IWM-D-F1
- Site visit held on January 12, 2006.

2.0 SCOPE OF WORK

The IDS consists of trash and rubble placed as fill inside of a bulkhead that was constructed to provide access to the island by boats. The bulkhead is located along the shoreline in an area of the former village that was being used as a boat yard. The approximate dimensions of the bulkhead are; 25 feet wide at the shoreline, 12 feet wide at the bay end 50 feet in length. The approximate depth of the fill is 4 feet at the bay end and 2 feet at the shoreline. Recently, work has been done at the site in an effort to remove waste deposited in the fill. The purpose of this WP is to outline those activities that will be undertaken to remove the balance of trash and debris form the bulkhead fill area.

Site activities will consist of the following work tasks:

- Establish a field storage and site support areas.
- Mobilize equipment to the island by barge.
- Excavate and segregate the trash and debris.
- Load the trash into a bin for transport to shore and disposal at a municipal landfill.
- De-mobilization

<u>METHOD / SEQUENCE of OPERATIONS</u>

The sequence of this project will be; (1) Pre-Construction activities including; secure required permits and materials, (2) Mobilization & Site Preparation, (3) Excavation and Segregation of Trash and Debris, (4) Load and Transport the Trash for Disposal, and (5) final cleanup and de-mobilization. Since the site is located in Humboldt Bay and subject to tidal fluctuations, the general approach to the project will be to coordinate the transportation of equipment and materials to and from the site during periods of high tide and conduct the excavation and loading operations from 3 hours prior to low tide to 3 hours after low tide. These operations will be outlined in the following sections.

(1) Pre-Construction Activities – All required permits will be secured and plans finalized. Materials and equipment will be secured and delivery scheduled. Work schedules will be established to accommodate the tidal influences associated with the site.

(2) Mobilization & Site Preparation - This task will include the delivery and staging of all equipment and materials at the site; site specific health and safety training of site personnel; installation of temporary site fencing and signs. All equipment will be transported to the site via barge and done at periods of high tide.

(3) Excavation and Segregation of Trash and Debris - Excavation will begin as the tide is going out. A rubber tread mini-excavator will work with a rubber tracked mini-loader to remove the trash and debris, starting from the water side and working toward the shore side. The excavator will dig up the material and cast it into the bucket of the loader. The loader will be equipped with a screened bucket and when loaded, it will shake the material in an effort to remove the mud and sand from the debris. The mud and sand will be returned to the excavation and the debris will be stockpiled for loading into disposal bins. Work will continue daily until the incoming tide prevents work. Once all of the debris identified for removal has been loaded and removed from the island, the crews will prepare for de-mobilization.

(4) Load and Transport the Trash for Disposal - Two, 20-cubic yard disposal bins will be delivered to the harbor and loaded onto the barge for transport to the island. The bins will be transported out to the island at high tide and will remain there, on the barge, for loading. The barge will be secured along side the bulkhead to facilitate loading debris into the bins. The excavator and loader will then place the trash and debris into the bins until they reach capacity. At the next high tide the barge will take the loaded bins back to the harbor where the bins will be off loaded onto a roll off truck. Should additional bins be required to complete the project, they will be loaded onto the barge at this time and taken back to the work site. The truck(s) will then transport the bins to the local municipal landfill for disposal.

(5) Final cleanup and de-mob – Upon completion of site activities, all equipment, material, and any remaining debris and trash will be removed from the site. Temporary fencing will be removed.

Work Hours – It is anticipated that this project will be done during the normal workweek (Monday through Friday), however, the hours will vary according to the tidal changes. No overtime work is anticipated.

3.0 DISPOSAL

It is anticipated that all of the segregated debris will be non-hazardous and suitable for disposal at the local municipal landfill. If sufficient recyclable materials such as metal and glass are recovered, they will be kept separate and disposed of by recycling.

4.0 PERSONNEL

The personnel requirements to accomplish the tasks as outlined above are as follows:

Program Manager - **Gregory Frick**, AJD Program Manager, will be responsible for the overall direction of the project in compliance with the CIWMB Contract, Remedial Action Plan, Work Order, this Work Plan and the Site Specific Health and Safety Plan. This will require communication with the CIWMB Project Manager and the AJD Site Superintendent to ensure efficient site operations, compliance with all approved plans and regulations, and overseeing scheduling and job costing issues to insure the timely and cost efficient completion of the project.

Site Superintendent – **Lee Tull**, Site Superintendent will be on-site during all site activities. His duties will include direct oversight of labor and equipment involved in excavation, loading, transport and site stabilization activities. He will also be responsible for the implementation of the Site Specific Health and Safety Plan as authorized by the Corporate Health and Safety Officer. The Site Superintendent may operate equipment at various times during the project.

Corporate Safety Officer – **Ian McKnight**, AJD Corporate Safety Director, will oversee the preparation and implementation of the Site Specific Health and Safety Plan. He will ensure the plan is comprehensive and appropriate for the site.

Site Health and Safety Oversight – Onsite Health and Safety monitoring will be the responsibility of the Site Superintendent. He shall be responsible for the implementation of the Site Specific Health and Safety Plan and shall conduct onsite health and safety monitoring and oversight using visual observations.

Operating Engineers – One operating engineer will be onsite at all times to operate equipment during loading and excavating/segregation activities.

Laborers – Two laborers will be used onsite to segregate debris and assist in loading.

All personnel working onsite will have, at a minimum, 40 hour Hazwopper training along with current annual certification and medical monitoring certification as required by 29 CFR 1910.120. In addition, the Site Superintendent will have current certification for the 8-hour Hazwopper supervisors training as well as Red Cross first aid and CPR certification.

5.0 EQUIPMENT

The equipment required to accomplish the tasks as outlined above are as follows:

(1) Takeuchi TB 175 mini-excavator	(rented)
(1) Takeuchi TL 130 track steer loader	(rented)
(1) Temporary sanitary facilities	(rented)
(1) Tug and barge	(rented)

6.0 PPE

The minimum requirement on all AJD sites is EPA Level D. This requirement will apply to this site. Modifications to the level of PPE will be required for certain tasks specified in the Site Specific Health and Safety Plan. Theses include but may not be limited to a modified level D where possible dermal contact may be an issue.

7.0 SITE SECURITY

Site security will be maintained using the existing property fencing and by the installation of orange plastic construction fencing at the upper boundary to the work area. Due to the nature and location of this project, no additional security measures are deemed necessary.

Methods utilized to facilitate site access control will include:

- Establishing barriers to exclude unnecessary personnel and the public.
- Scheduling operations that utilize minimum numbers of personnel.
- Establishing control points to regulate access and egress to work zones.

Security for the site during field operations will be the responsibility of the Site Superintendent. All workers and visitors entering the site will be required to sign an entry log. At the close of the shift, responsibility for site security will be returned to the property owner.

8.0 COST ESTIMATE

Equipment

All equipment for this project is considered "specialty equipment".

Rental equipment, if required, will be reimbursed at invoice rates plus 15% markup based upon the lowest of three rental rates provided to CIWMB. Rental invoices will include, but are not limited to operated rates, standby rates, and other costs.

Materials/consumables

All materials and consumables will be billed at invoice rate plus 15% markup, per contract.

Transportation and Disposal

Transportation and disposal costs will be billed at invoice rate plus 10%.

Sub-Contractors

Subcontractors and sub-contracted services if used will be billed at invoice rates plus, 10% markup.

Other Charges and Miscellaneous Costs

All other costs will be billed at invoice rate plus 5%.

Travel/Per Diem
Subsistence and per diem will be charged at $ 100.00/day/man.

Estimated Cost
The estimated cost for this project is: $ 31,024.00

Item	Quantity	Unit	Unit Cost	Total Cost
Mob-Demob, Gen Conditions:	1	LS	$ 7,330.00	$ 7,330.00
Site Work:	4	Days	$ 4,190.00	$ 16,760.00
Barge Service	1	LS	$ 4,750.00	$ 4,750.00
Disposal	60	CY	$ 36.40	$ 2,184.00
Total Project Costs				**$ 31,024.00**

9.0 SCHEDULE

The anticipated project duration is 4 workdays onsite.

Non-Point Source/Storm Water Pollution Prevention Plan and Spill Prevention, Containment and Countermeasure Plan

Tuluwat Restoration Project
Indian Island

Prepared for:

Table Bluff Reservation--Wiyot Tribe

SHN Consulting Engineers & Geologists, Inc.
812 W. Wabash Ave.
Eureka, CA 95501-2138
707/44108855

June 2008
004178.100

Reference: 004178.100

June ##, 2008

Jon Mooney
Table Bluff Reservation--Wiyot Tribe
1000 Wiyot Drive
Loleta, CA 95551

Subject: **Non-Point Source/Storm Water Pollution Prevention Plan and Spill Prevention, Containment and Countermeasure Plan, Tuluwat Restoration Project, Indian Island East of Highway 255; APN 405-011-002, -010**

Dear Mr. Mooney:

SHN Consulting Engineers & Geologists, Inc., has prepared this Non-Point Source/Storm Water Pollution Prevention Plan (NPS/SWPPP) and Spill Prevention, Containment and Countermeasure Plan to cover the construction of the above mentioned project site. Please review this NPS/SWPPP and let us know if you have any comments or changes.

If you have any questions, please call Mike Foget or me at 707-441-8855.

Sincerely,

SHN Consulting Engineers & Geologists, Inc.

Lisa K. Stromme, P.E.
Water Resources Engineer

LKS/EMM:lms
Enclosure: report

Reference: 004178.100

Non-Point Source/Storm Water Pollution Prevention Plan and Spill Prevention, Containment and Countermeasure Plan

Tuluwat Restoration Project
Indian Island

Prepared for:

Table Bluff Reservation—Wiyot Tribe
Eureka, CA

Prepared by:

Consulting Engineers & Geologists, Inc.
812 W. Wabash Ave.
Eureka, CA 95501-2138
707-441-8855

June 2008

QA/QC: MEL___

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List of Acronyms and Abbreviations

AST	Aboveground Storage Tank
BMP	Best Management Practices
CASQA	California Stormwater Quality Association
COC	Chain-of-Custody
EIR	Environmental Impact Report
EPA	(U.S.) Environmental Protection Agency
ESHA	Environmentally Sensitive Habitat Area
ISCO	In Situ Chemical Oxidation
ISCP	Interim Site Cleanup Plan
MSDS	Material Safety Data Sheets
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NPS	Non-Point Source
PCBs	Polychlorinated Biphenyls
PCP	Pentachlorophenol
RWQCB	California Regional Water Quality Control Board, North Coast Region
SPCC	Spill Prevention, Containment, and Countermeasure
SS	Settleable Solids
SWMP	Storm Water Monitoring Program
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TSP	Trisodium Phosphate
TSS	Total Suspended Solids
USEPA	United States Environmental Protection Agency
WDRs	Waste Discharge Requirements

1.0 Non-Point Source/Storm Water Pollution Prevention Plan Certifications and Approval

1.1 Initial Non-Point Source NPS/ Storm Water Pollution Prevention Plan Certification by Contractor

Project: **Table Bluff Reservation—Wiyot Tribe, Tuluwat Restoration Project**
Indian Island

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Contractor's Signature _____ Date _____

Contractor's Name & Title _____ Telephone Number _____

1.2 Non-Point Source NPS/ Storm Water Pollution Prevention Plan Owner/Developer Approval and Certification

Project: **Table Bluff Reservation—Wiyot Tribe, Tuluwat Restoration Project**
Indian Island

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Owner/Developer's Signature _____ Date _____

Owner/Developer's Name and Title _____ Telephone Number _____

Table Bluff Reservation - Wiyot Tribe (Tribe), Project Owner, acknowledges receipt of this Non-Point Source/Storm Water Pollution Plan (NPS/SWPPP) on _____, and hereby assumes all duties to maintain compliance with the State Water Resources Control Board (SWRCB) regulations. These regulations include, but are not limited to the following:

- maintaining records for three years,
- implementation of both the NPS/SWPPP and Storm Water Monitoring Program (SWMP), and
- completion of amendments as required.

Signature: _____

Date: _____

1.3 Annual Compliance Certification

By July 1 of each year, the Tribe shall submit an Annual Certification of Compliance to the California Regional Water Quality Control Board, North Coast Region (RWQCB), stating compliance with the terms and conditions of the SWRCB Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002 (General Permit) and this NPS/SWPPP. A copy of the General Permit is included as Appendix A of this document; and the Annual Certification of Compliance form is included with the stormwater monitoring and sampling forms in Appendix B.

2.0 Non-Point Source/Storm Water Pollution Prevention Plan Amendments

2.1 Non-Point Source/Storm Water Pollution Prevention Plan, Amendment Certification and Approval

This NPS/SWPPP shall be amended:

- Whenever there is a change in construction or operations which may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system; or
- If any condition of the permit is violated or the general objective of reducing or eliminating pollutants in storm water discharges has not been achieved. If the RWQCB determines that a permit violation has occurred, the NPS/SWPPP shall be amended and implemented within 14 calendar days after notification by the RWQCB;
- Annually, prior to the wet season: and
- When deemed necessary by the Tribe.

The following items will be included in each amendment:

- Who requested the amendment.
- The location of proposed change
- The reason for the change
- The original Best Management Practices (BMP) proposed, if any
- The new BMP proposed

The amendments of this NPS/SWPPP, along with the Contractor's Certification and the Tribe's, can be found in the following pages. Amendments are listed in the Amendment Log in Section 2.2.

NPS/SWPPP Amendment No. _____

Project: **Table Bluff Reservation - Wiyot Tribe, Tuluwat Restoration Project Indian Island**

Contractor Certification of the NPS/SWPPP Amendment

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Contractor's Signature _____ Date _____

Contractor's Name & Title _____ Telephone Number _____

Owner/Developer Approval of the NPS/SWPPP Amendment

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, to the best of my knowledge and belief, the information submitted is, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Owner/Developer's Signature _____ Date _____

Owner/Developer's Name and Title _____ Telephone Number _____

2.2 Amendment Data Sheet

Table Bluff Reservation - Wiyot Tribe, Tuluwat Restoration Project, Indian Island

Amendment No.	Date	Brief Description of Amendment	Prepared By

3.0 Introduction and Project Description

3.1 Introduction

SHN has prepared this NPS/SWPPP on behalf of the Wiyot Tribe to address non-point source and storm water discharges associated with the construction of Tuluwat Restoration Project on Indian Island. This NPS/SWPPP has been developed specifically to address the requirements outlined in the statement of mitigation monitoring and reporting programs for the Tuluwat Restoration Project, as provided by the City of Eureka on April 14, 2008.

The mitigation and monitoring program requires that the Wiyot Tribe prepare and implement a City-approved NPS/SWPPP for all construction activities at the project site. As required in the mitigation and monitoring program, this NPS/SWPPP includes BMPs based on those BMPs contained in the California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook for Construction Activities. This NPS/SWPPP also includes measures to control suspended sediment from construction activities in the marine environment such as pile installation, delivery of materials to the site and other site activities that may impact or disturb the site soils. A spill prevention, containment and countermeasure plan has also been prepared for the project site and is included as Appendix C in this SWPPP.

3.2 Project Location

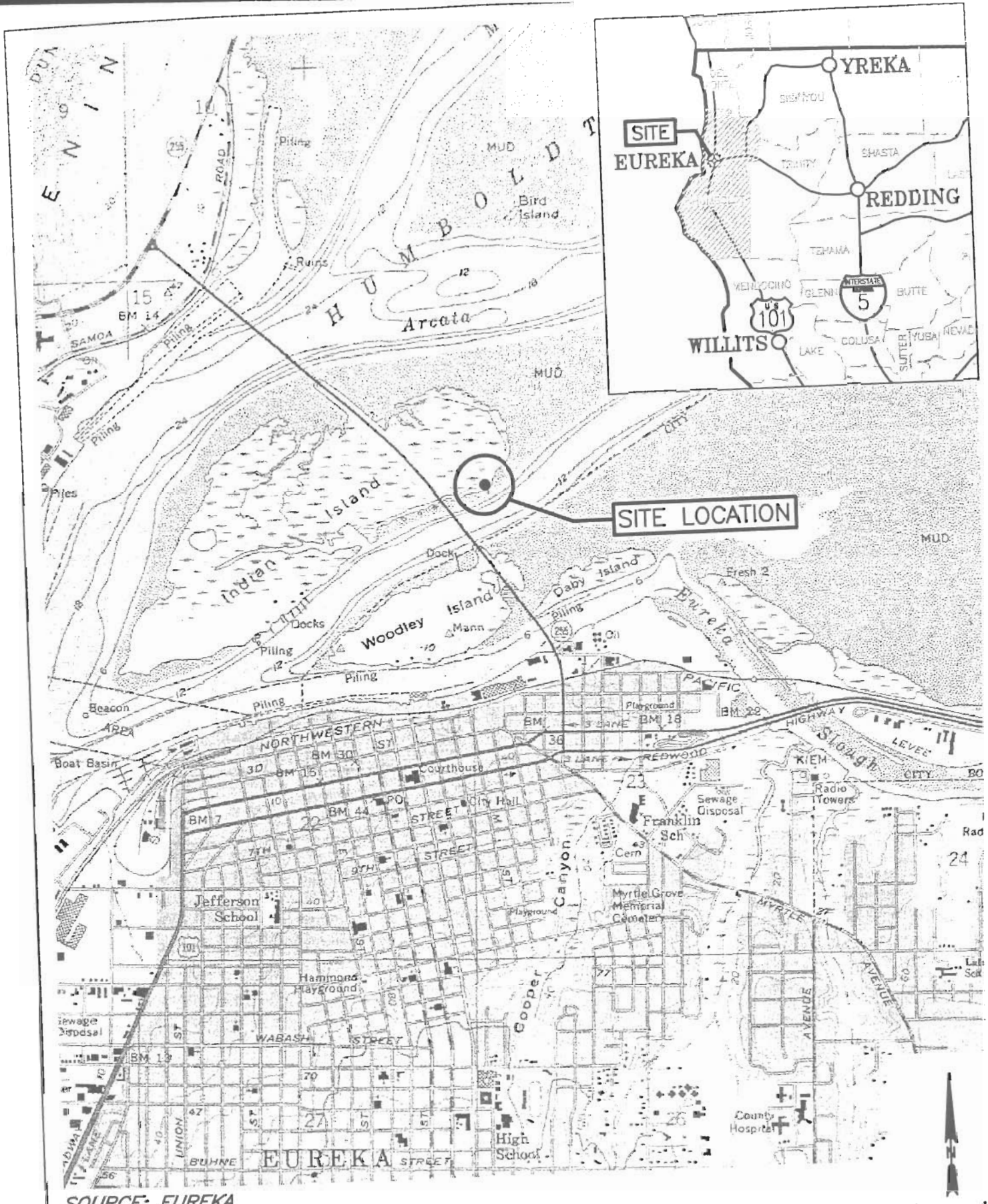
The proposed project is located east of Highway 255 on the southeast portion of Indian Island (See Site Location Map, Figure 1). Indian Island is the largest of three islands within Humboldt Bay, approximately 0.5 miles off the north shoreline of the City of Eureka, Humboldt County, California (Latitude 40° 48' 55" North, Longitude 124° 9' 29" West). The project site's boundary is defined by the 10-foot mean high water mark elevation.

Humboldt Bay is the only water body in the project area and borders the site to the south and east. The remaining perimeter is surrounded by salt marsh habitat. A slough channel wraps around the north side of the site (See Site Layout Plan, Figure 2).

3.3 Project Description

The Wiyot Tribe is working to renew their cultural connection to Indian Island and Tuluwat, and proposes to construct a ceremonial place where the Tribe can conduct a variety of cultural activities including the World Renewal Ceremony, as well as cultural and environmental educational activities for the tribal and regional communities.

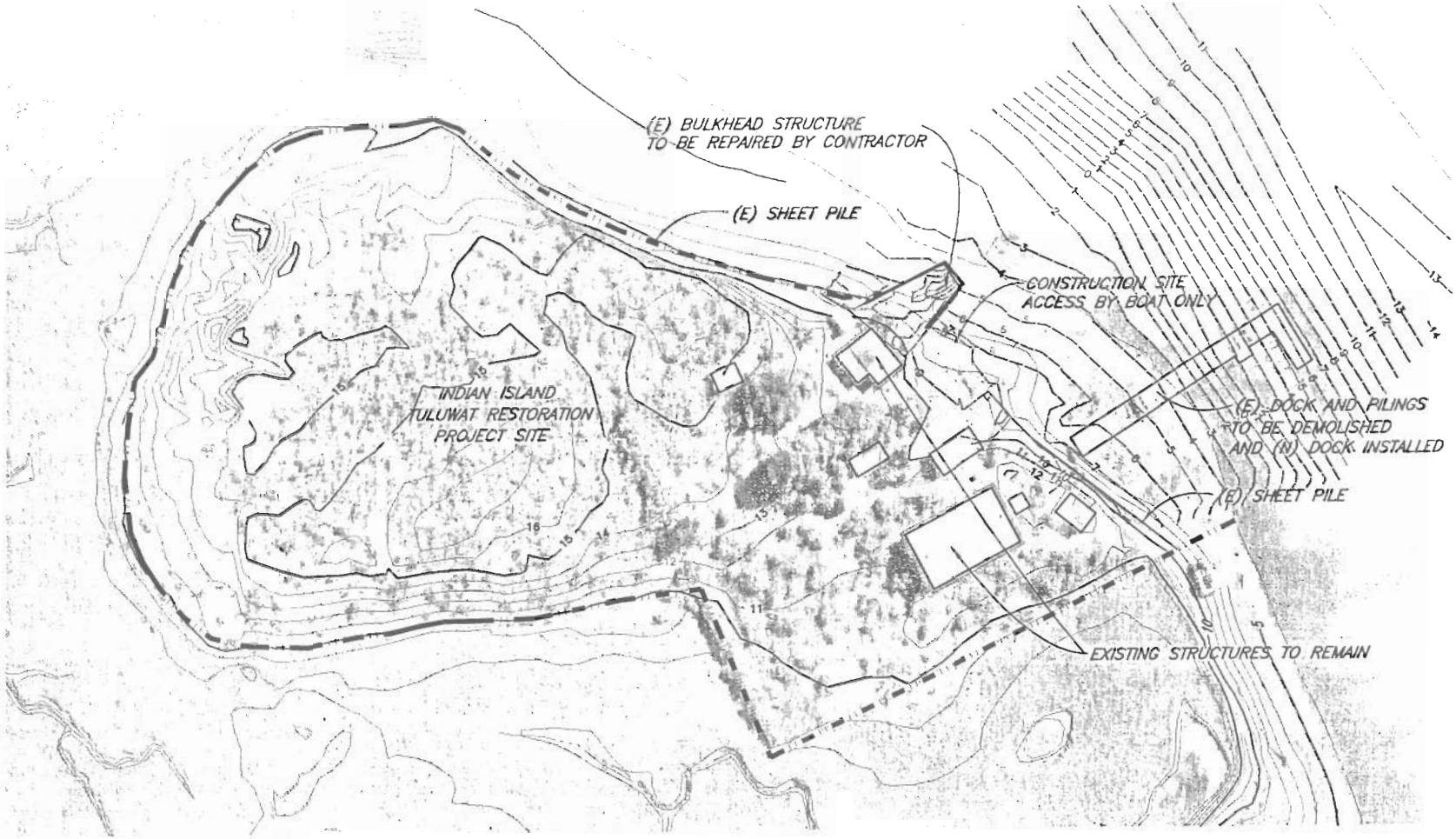
The project includes implementation of an interim site cleanup plan for contaminated soil (including dioxin, heavy metals and pentachlorophenol [PCP] contamination), installation of a cap over the contaminated portion of the site, installation of a cultural cap to protect cultural resources in the subsurface of the project site, and a restored dock and bulkhead.



SOURCE: EUREKA USGS 7.5 MINUTE QUADRANGLE

1"=2000'

SHN Consulting Engineers & Geologists, Inc.	Indian Island Eureka, California	Site Location Map SHN 004178.100
	APRIL 2005	004178.100-LOCATION Figure 1



EXPLANATION

EXISTING STRUCTURE

SITE BOUNDARY AND CLEARING LIMITS

0 60

1"=60'

SHN Consulting Engineers & Geologists, Inc.	Wiyot Tribe Tuluwat Village Eureka, California	Site Plan SHN 004178.100
	May 2008	004178-100-CW-SW3P-FIGS	Figure 2

The construction of the project will be conducted in five phases:

- Phase I will include:
  - excavation of 17 cubic yards (yd^3) of contaminated soil around the former wayrunners and replacement with clean fill soil,
  - demolition of some existing structures,
  - clearing the southern portion of the site,
  - placing a geotextile barrier over the entire 1-acre contaminated portion of the area (contaminated cap),
  - repairing the existing bulkhead and installing sheet piling, and
  - adding a minimum of 1 foot of soil cover.
- Phase II will include rebuilding the docking area.
- Phase III will include installation of a cultural protective cap over the northern portion of the site by clearing vegetation, laying geotextile, and adding a minimum of 1 foot of soil;
- Phase IV will include final clean-up of the contaminated areas, with additional site remediation through In Situ Chemical Oxidation (ISCO); and
- Phase V will involve construction of the site buildings and other features (See Figure 2).

3.4 Unique Site Features

The project site is part of a 6-acre shell mound known as the Wiyot Tribe's Tuluwat Village. Between 1870 and 1990, the site was used as a dry dock for boat repair and maintenance. Hazardous materials, consisting of paints, solvents, metals, petroleum products, and various other chemicals used in ship maintenance and repair, are known to have been used on the site. In 2000, a contractor removed approximately 1,300 pounds of identifiable hazardous wastes from the site. Soil samples collected from the site indicate that hazardous materials, including dioxin, remain in site soils (SHN, 2006).

Humboldt Bay, which borders the project site, is the second largest estuary in California and is included in the United States Environmental Protection Agency (USEPA) 303(d) list of impaired waters for Polychlorinated Biphenyls (PCBs) and dioxin toxic equivalents (USEPA, 2006). Dioxins have been identified in site soils, and are at risk of mobilization during the construction process.

Environmentally Sensitive Habitat Areas (ESHA) are located along all boundaries of the project site that are not shared with Humboldt Bay. ESHA are protected by local policies, the California Coastal Act, and California Department of Fish and Game guidelines. These ESHA include marine wetlands, such as salt marsh habitat and mudflats, and locations of special status species[1]. These sensitive natural resources should be avoided to the extent feasible. There are no roads to or on the site, so all construction equipment must arrive by barge. Moving equipment on site without appropriate BMPs has the potential to mobilize contaminated sediment. Runoff from the project site into Humboldt Bay and/or ESHA shall be minimized through the implementation of BMPs.

[1] This term is used collectively to refer to species that are state or federally listed, federal species of concern, species that are state candidates for listing, and all species listed by the California Natural Diversity Database. This term is consistent with the biological resources that need to be assessed pursuant to the California Environmental Quality Act.

3.5 Construction Site Estimates

As established in the Environmental Impact Report (EIR), the Proposed Project would decrease the number and area of the structures on the sites. This would decrease the impervious surface area of the project area. The soil and geotextile cover over the midden is designed to be permeable. A 1,500-square foot revetment area and additional path areas would have erosion control with permeable pavers. Compaction of the midden and imported soil will be minimized. Because the site will remain mostly permeable and vegetated, it is not expected that runoff would significantly increase.

3.6 Project Construction Activities Schedule

A Notice of Intent (NOI) to comply with the terms of the General Permit To Discharge Storm Water Associated with Construction Activity (General Permit), was submitted to the SWRCB on _____, a copy of the NOI and NOI receipt are included in Appendix D. Once construction activities have been concluded, and any post-construction BMPs have been implemented and evaluated, then the Notice of Termination (NOT) form (included in Appendix E) will be submitted to the SWRCB, and this NPS/SWPPP will no longer be in effect.

The following project construction activities schedule outlines the phasing for sequencing major construction activities with implementation of construction site BMPs during the projected rainy and non-rainy seasons.

Phase I (To Be Completed by October 31, 2008)

Estimate Construction Start (Pending Coastal Commission approval):	July 2008
California Integrated Waste Management Board Removes Debris:	July 28-August 8
Archaeologist Excavation:	July 28-August 8
Contractor Mobilize on Site:	August 11
Bulkhead and Sheet Pile Work:	August 11-22
HAZ Cap Installation:	August 25-September 8
Estimate Construction Finish:	October 2008

Phase II (Anticipated for Construction in 2009)

Estimate Construction Start:	June
Remove Existing Piles:	September 1-November 30
Drive Piles:	September 1-November 30
Install Floating Dock and Gangway:	September 1-November 30
Estimate Construction Finish:	November

Phase III (To Be Amended)

Estimate Construction Start:	June
Estimate Construction End:	October

Phase IV (To Be Amended)

Estimate Construction Start:	June
Estimate Construction End:	October

Phase V (To Be Amended)

Estimate Construction Start:	June
Estimate Construction End:	October

3.7 Contact Information/List of Responsible Parties

The Storm Water Pollution Prevention Site Manager (Site Manager) assigned to this project is:

Jon Mooney, Table Bluff Reservation—Wiyot Tribe	707-733-5055 (office) 707-845-3030 (cell)

The Site Manager shall have primary responsibility and significant authority for the implementation, maintenance, inspection, and amendments to the approved NPS/SWPPP. The Site Manager will be available at all times throughout the duration of the project.

Duties of the Site Manager include but are not limited to:

- Ensuring full compliance with the NPS/SWPPP and General Permit
- Implementing all elements of the NPS/SWPPP, including but not limited to:
  - implementation of prompt and effective erosion and sediment control measures
  - implementing all non-storm water management, and materials and waste management activities such as: monitoring discharges (dewatering, diversion devices); general site clean-up; vehicle and equipment cleaning, fueling, and maintenance; spill control; ensuring that no materials other than storm water are discharged in quantities that will have an adverse effect on receiving waters or storm drain systems; etc.
- Pre-storm inspections, storm event inspections, and post-storm inspections
- Routine inspections as specified in the project's specifications or described in the NPS/SWPPP
- Updates/Amendments to the NPS/SWPPP, as needed
- Preparing annual compliance certification
- Ensuring elimination of all unauthorized discharges
- Authority as assigned by the Tribe to mobilize crews to make immediate repairs to the BMPs and control measures
- Coordinating with the Tribe to ensure all of the necessary corrections and/or repairs are made immediately, and that the project complies with the NPS/SWPPP, the General Permit, and approved plans at all times
- Submitting Notices of Discharges and reports of Illicit Connections or Illegal Discharges

4.0 References

The following documents are made a part of this NPS/SWPPP by reference:

- SWRCB Order No. 99-08-DWQ, NPDES General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Runoff Associated with Construction Activity. August 19, 1999, ("General Permit")
- SWRCB Resolution No. 2001- 046, Modification of SWRCB Order 99-08-DWQ, adopted by the SWRCB on April 26, 2001.
- Modification of SWRCB Order 99-08-DWQ to Include Small Construction Activity (One to Five Acres), adopted by the SWRCB on December 2, 2002.
- CASQA Stormwater Best Management Practices Handbook—Construction, January 2003
- Draft EIR: Tuluwat Restoration Project. HWR Engineering and Science. 2006.
- Site Clean-Up Plan, Tuluwat Village, Indian Island, Eureka, California. SHN Consulting Engineers & Geologists, Inc. 2006.

5.0 Non-Point Source/Storm Water Pollution Prevention Plan Narrative

5.1 Objectives

This NPS/SWPPP has six main objectives:

- Identify all pollutant sources, including sources of sediment, that may affect the quality of storm water discharges associated with construction activities (storm water discharges), from the project site.
- Identify non-storm water discharges.
- Identify, construct, implement, and maintain BMPs, to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the project site during construction.
- Develop a maintenance schedule for BMPs installed during construction that will reduce or eliminate pollutants after construction is completed (post-construction BMPs).
- Identify a sampling and analysis strategy and sampling schedule for storm water discharges from construction activities that discharge directly into water bodies listed on Attachment 3 of the General Permit (Clean Water Act Section 303(d) water bodies listed for Sedimentation).
- For all construction activity, identify a sampling and analysis strategy and sampling schedule for storm water discharges, which have been discovered through visual monitoring to be potentially contaminated by pollutants, not visually detectable in the runoff.

This NPS/SWPPP conforms to the required elements of the General Permit No. CAS000002 issued by the State of California, SWRCB. This NPS/SWPPP will be modified and amended to reflect any amendments to the permit, or any changes in construction or operations that may effect the discharge of pollutants from the construction site to surface waters or groundwater(s). The NPS/SWPPP will also be amended if it is in violation of any condition of the Permit or has not achieved the general objective of reducing pollutants in non-point source and storm water discharges. The NPS/SWPPP shall be readily available at the project site, and at SHN's Eureka office, for the duration of the project.

5.2 Location Map and Land Uses

A site location map is included as Figure 1 and shows the major roadways, geographic features, and general topography near the project location. A site layout map showing the project extents for Phase I, Phase II, and Phase III is included as Figure 2. Figures 3 and 4 show, for Phases I through III respectively, the general site layout, drainage patterns, and proposed construction site BMPs.

Existing land uses are minimal at the site, given the site is currently uninhabited. Until 1990 the site was used as a dry dock for boat repair.

EXPLANATION

(open box)	EXISTING STRUCTURE TO REMAIN
(cross-hatched box)	EXISTING STRUCTURE TO BE DEMOLISHED
(dash-dot line)	SITE BOUNDARY AND CLEARING LIMITS
(solid line)	PHASE I PERIMETER

EROSION CONTROL BMPS

EC-2	PRESERVATION OF EXISTING VEGETATION
EC-4	HYDROSEEDING
EC-6	STRAW MULCH
EC-7	GEOTEXTILES AND MATS
EC-8	WOOD MULCHING
TC-1	STABILIZED ENTRANCE/EXIT

SEDIMENT CONTROL BMPS

SE-5	STAKED FIBER ROLLS

WIND EROSION CONTROL BMPS

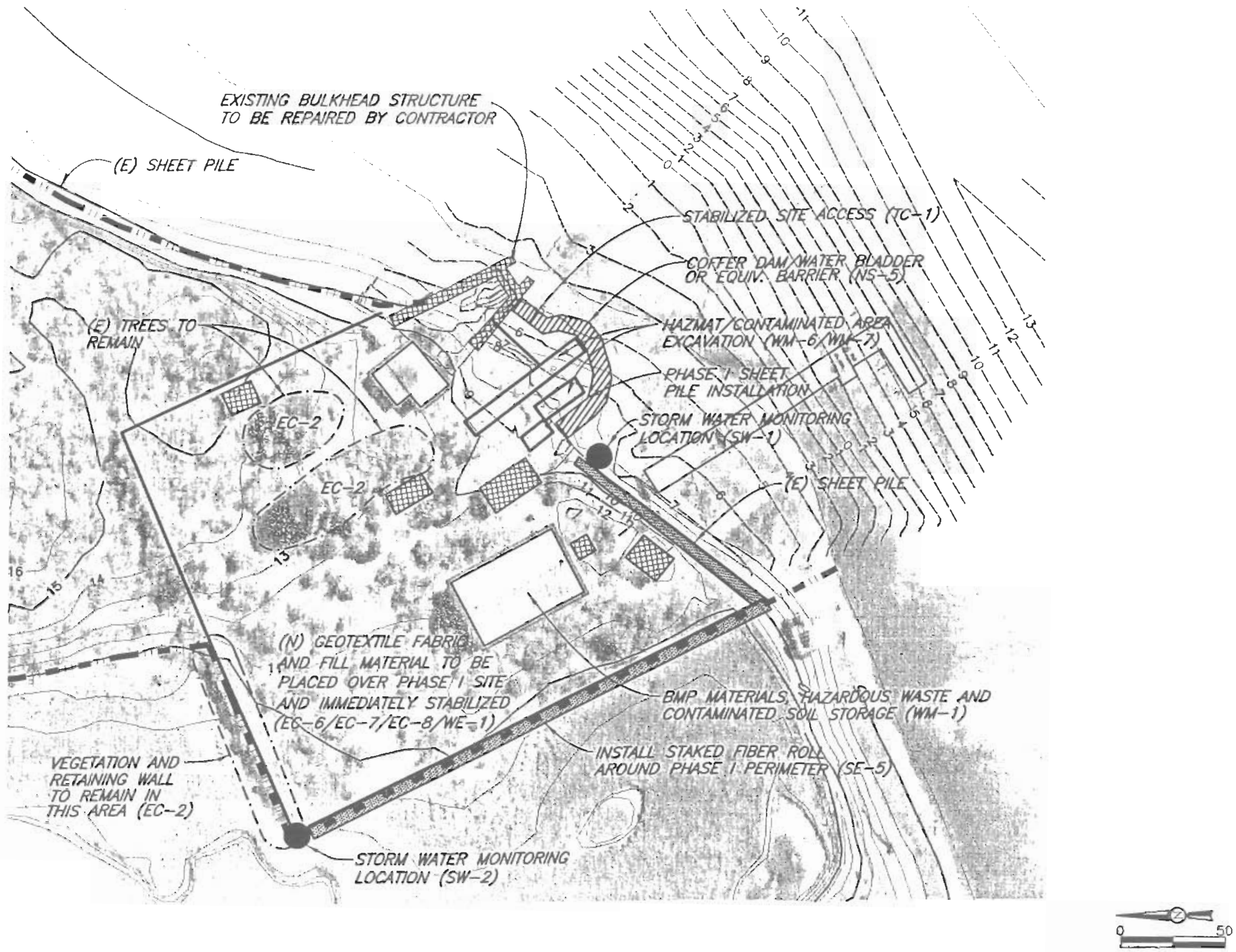
WE-1	WIND EROSION CONTROL

NON-STORM WATER BMPS

NS-5	CLEAR WATER DIVERSION (COFFER DAM/WATER BLADDER)

WASTE MANAGEMENT BMPS

WM-1	MATERIAL DELIVERY AND STORAGE
WM-6	HAZARDOUS WASTE MANAGEMENT
WM-7	CONTAMINATED SOIL MANAGEMENT



SHN Consulting Engineers & Geologists, Inc.

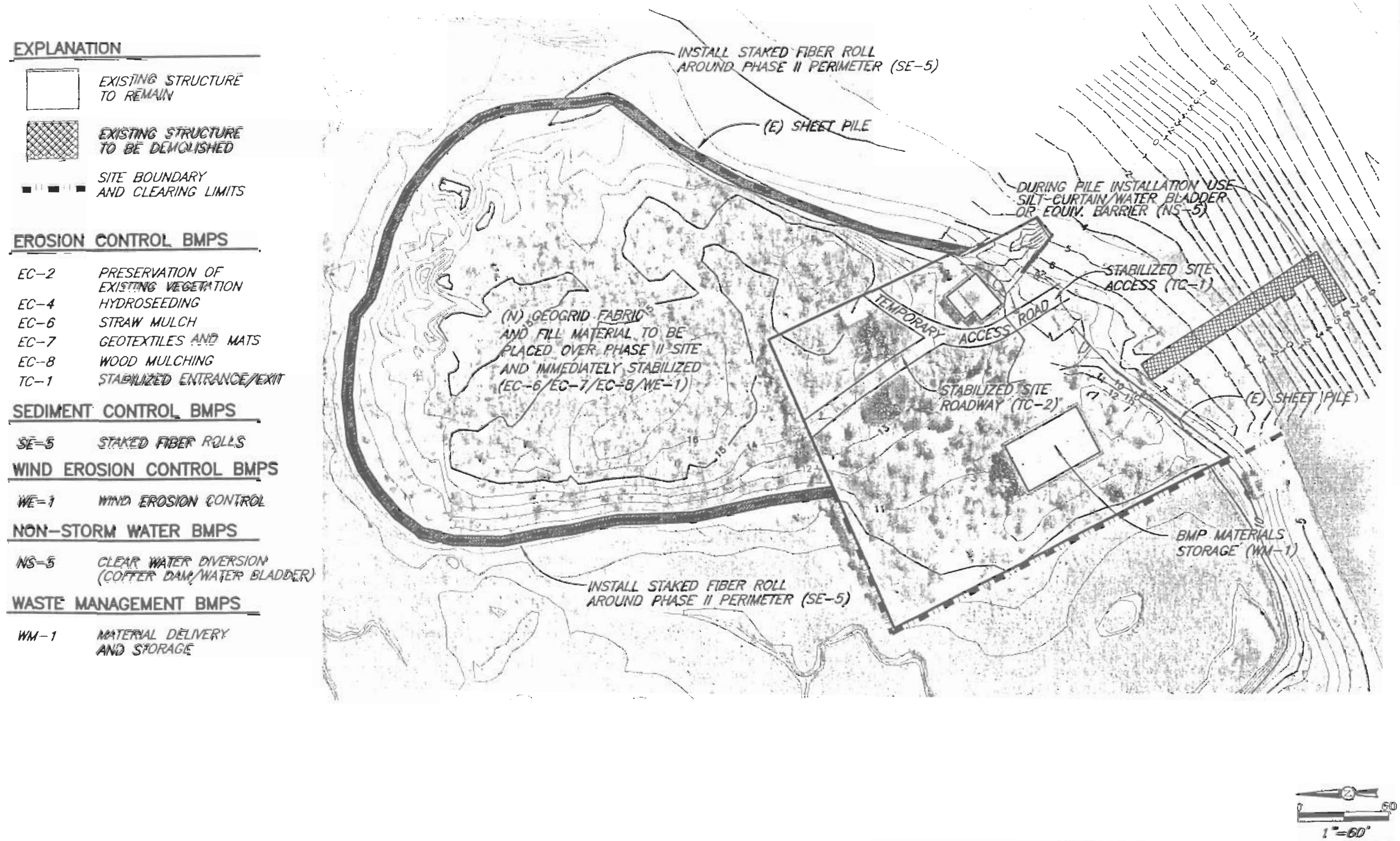
Wiyot Tribe
Tuluwat Village
Eureka, California

May 2008

Phase I
SWPPP BMPS
SHN 004178.100

004178-100-CW-SW3P-FIGS

Figure 3



SHN Consulting Engineers & Geologists, Inc.	Wiyot Tribe Tulawat Village Eureka, California	Phase II and III SWPPP BMPS SHN 004178.100
	May 2008	004178-100-CW-SW3P-FIGS / Figure 4

5.3 Pollutant Source Identification and BMP Selection

5.3.1 Inventory of Materials and Activities that May Impact Storm Water

The following is a list of construction materials that may be used within the project area that will have the potential to contribute pollutants, other than sediment, to storm water runoff:

- Concrete/Painting Products
- Vehicles/Construction Equipment
- Soil Stabilization Products

The following is a list and brief discussion of construction activities that may be performed at the project site that will have the potential to contribute sediment, and other potential pollutants, to non-point source and storm water discharges:

- Removal of debris from inter-tidal areas
- Demolition of buildings
- Excavation of the contaminated midden
- Construction and deconstruction of the temporary causeway
- Construction of a protective soil and geotextile cover
- Transportation of materials
- Construction of all structures including buildings, docks, and the bulkhead

Removal of Debris From Inter-Tidal Areas. As part of the proposed project, the Tribe would remove the industrial debris from the mudflats adjacent to the project site. The contamination of these mudflats has not been completely characterized. The industrial debris includes large wooden beams, metal railroad track, and other metal debris. Only those materials that can be seen on the surface will be hooked or choked out using cables and machinery on the upland area of the site. This activity will occur only during low tides to minimize the potential disturbance of sediments. Removed materials will be stockpiled in the designated area and will be appropriately disposed of or recycled.

Excavation of Contaminated Midden. Targeted contaminated soils will be removed as part of the Interim Site Cleanup Plan (ISCP). Under the ISCP, 17 cubic yards of midden contaminated with PCP, dioxin, and metals will be excavated. Most of the area to be excavated is located below the 10-foot high water mark. There is the potential that either during or after excavation, tidal waters could inundate these areas. This could possibly mobilize exposed contaminated midden into Humboldt Bay. To mitigate this, a temporary impermeable coffer dam, water bladder containment wall or equivalent will be constructed around the excavation area and will function as a sediment and tidal control barrier near the contaminated midden area. All excavated material will be immediately placed in drums and stored in the designated area, under cover until being removed off site.

Constructing and Deconstructing the Temporary Causeway. If a temporary causeway structure is necessary to safely transfer materials onto the island, it will be placed in the mudflat and north of the existing dock. The causeway would extend approximately 100 feet long and 10 feet wide, and would be constructed of temporary piers and beams or rocks placed over geotextile and geoweb (a cellular confinement product used to reduce the lateral spreading of fill materials on non-cohesive soils) and/or mudmats. After construction, the structure would be entirely removed and the mudflat would be rehabilitated to pre-construction conditions.

Construction of Protective Soil and Geotextile Cover. This activity is the largest construction activity that is to occur as part of the development of the Proposed Project. The protective soil and geotextile cover involves importing up to 1,600 cubic yards of soil and gravel to the island for Phase I, and 4,000 cubic yards of material for Phase II. In the past, this has been accomplished using barges combined with the installation of a temporary causeway located in the inter-tidal zone.

Transportation of Materials. Minor amounts of spillage could occur during transfer of materials across the temporary causeway. Potential impacts from loss of fill during transfer of materials would be minimized by the installation of BMPs and continuous monitoring and maintenance of the structure and transfer process.

Construction of All Structures Including Buildings, Docks, and Bulkhead. Construction impacts could occur during the removal and installation of the pier structure (dock). The installation of new pilings should occur only during low tide so that material disturbed during this activity will likely settle in close proximity to the source activity. Geotextile fabric shall be installed on top of the sediment around each pier (or area of piers), in order to provide for containment, collection, removal, and proper disposal of any contaminated sediments in this area. Silt curtains and (as needed) a water bladder or similar structure necessary to minimize water movement shall be installed around each piling that is to be removed or driven if water is present. The existing bulkhead will be repaired by removing the remaining trash fill and adding to the existing concrete walls from the inside of the footing.

Appendix F includes a list of BMPs and copies of fact sheets for all BMPs that have been selected for implementation in this project. Narrative descriptions of BMPs to be implemented during the project are listed by category in the following sections.

5.3.2 Existing (Pre-Construction) Control Measures

The following are existing (pre-construction) control measures encountered within the project site:

- A sheet pile wall protects the southeastern portion of the project site. The wall is supported by rock on the bayside and filter fabric backfilled with shell, cobble and soil on the island side. The fill has been revegetated with native plant species.
- Sandbags protect portions of the beach just south of the project site.
- Geotextile covers the former wayrunner area to prevent contaminant mobilization.
- Silt fencing has been installed between the former wayrunner area and Humboldt Bay.

5.3.3 Nature of Fill Material and Existing Data Describing Soils

The site is located on a shell mound (midden) that is approximately 14 feet deep. The mound is composed of human remains, tools, and other cultural artifacts, some of which have been carbon dated to approximately 900 A.D. (ITSI, 2002).

Existing site features may contain, as a result of past usage, pollutants that may contribute to storm water, including:

- Paints
- Solvents
- Metals
- Petroleum products
- Various other chemicals used in ship maintenance and repair
- Asbestos
- PCP
- Dioxin and Furans

5.3.4 Erosion Control

Erosion control consists of source control measures that are designed to prevent soil particles from detaching and becoming suspended or entrained in the storm water runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles. This project will incorporate appropriate site-specific erosion control measures for each construction activity. These measures may be amended, improved, or changed, as necessary, as the project progresses. Any changes will be noted in this NPS/SWPPP. The following temporary erosion control measures will be implemented at the construction site during all phases of construction for this project:

1. Preserve existing vegetation where required and when feasible.
2. Apply temporary erosion control to remaining active and non-active areas as required by the CASQA Stormwater BMPs Handbook—Construction, and the contract documents. Reapply as necessary to maintain effectiveness.
3. Implement erosion control prior to the defined rainy season.
4. Stabilize non-active areas as soon as feasible after the cessation of construction activities.
5. Control erosion in concentrated flow paths by applying erosion control blankets, erosion control seeding, and lining swales as required in the contract documents.
6. At completion of each phase, apply permanent erosion control to all remaining disturbed soil areas.

Sufficient erosion control materials will be maintained on site to allow implementation in conformance with Permit requirements and described in this NPS/SWPPP. This includes implementation requirements for active areas and non-active areas that require deployment before the onset of rain.

Appendix F includes fact sheets for the following BMPs, which will be implemented to control erosion on the construction site (control practice BMP fact sheet number included in parenthesis):

- Scheduling (EC-1)
  - All Phase I construction will occur between June and October, which is the regional dry season.
  - Revetment materials and dock piling shall only be installed during lower stages of the tide. As specified in the project EIR, pile-driving activities and other in-water construction activities will be limited to the time period of September 1 through November 30, to avoid direct impacts to adult salmon and steelhead.
  - Equipment loading and excavation within the tidal zone will only occur during lower stages of the tide.

- Preservation of Existing Vegetation (EC-2)
  - The large trees will remain on site.
  - The vegetated barrier and retaining wall along the northern side of the Phase I project area will be left in place (See Figure 3).
  - A minimum 20-foot wide construction buffer around eelgrass beds offshore of the project shall be marked by a qualified biologist and maintained during construction.
- Hydroseeding (EC-4)
- Straw Mulch (EC-6)
  - Rice straw mulch will be applied to exposed soil.
- Geotextiles and Mats (EC-7)
  - Geotextiles will be installed over the entire site and jute-mat will be staked around the perimeter of the site in both Phase I and Phase II for stabilization.
- Wood Mulching (EC-8)
  - Vegetation cleared from the site will be chipped and applied with the rice straw.

Implementation areas and storage locations for temporary erosion control BMPs for each phase are shown on the project location maps (See Figures 3 and 4).

The construction site entrance and temporary access road will also be stabilized to prevent sediments from becoming entrained in storm water runoff or during tidal fluctuations. Appropriate measures will be implemented to ensure that sediment and other debris is not spilled from the temporary causeway while being transported on or off site. All safety precautions will be employed, including wind control measures on barges used to transport materials to the island.

- Stabilized Construction Entrance/Exit (TC-1)
  - Mud mats or other stabilization measures may be used for the temporary causeway, at the discretion of the contractor, as long as the intent of the BMP is met.
- Stabilized Construction Access Road (TC-2)
  - A stabilized access road will be constructed and maintained to provide access the northern portion of the site for the Phase II tasks.
  - All equipment used on site will be low-impact, track mounted to minimize soil disturbance.

5.3.5 Sediment Control

Sediment controls include structural measures that are intended to complement and enhance the erosion control measures. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water. The temporary sediment control BMPs selected for this project are adequate to prevent a net increase of sediments in storm water discharge relative to pre-construction levels. In addition, sufficient quantities of temporary sediment control materials will be maintained on site throughout the duration of the project, to protect the active disturbed soil areas prior to predicted rain events and for rapid response to failures or emergencies.

As specified in the project EIR, silt screens, straw bales, coir-rolls, coffer damming, and/or a water bladder wall, appropriate for use in estuary and intertidal setting applications, shall be installed at the toe of the slope. They shall also be installed around the perimeter of the area to be graded prior to the initiation of the grading activities, and around pilings during removal and installation activities, and shall be maintained throughout the project construction. Additional siltation barrier materials shall be kept at the site and used as needed to reinforce containment structures should unseasonable rainfall occur. Appendix F includes fact sheets for the following temporary sediment control BMPs that will be used at the project site during all phases of construction for this project (control practice BMP fact sheet number included in parenthesis):

- Silt Fencing (SE-1)
- Check Dams (SE-4)
- Fiber Rolls (SE-5)
  - Fiber rolls or equivalent will be installed around the perimeter of project site for each phase under construction.
- Gravel Bag Barriers (SE-6)
- Straw Bale Barriers (SE-9)
- Coffer Damming/ Water Bladders
  - Coffer dams, water bladders or other equivalent non-permeable BMPs will be installed between the contaminated midden excavation areas and Humboldt Bay to adequately secured the excavation area during high tide events and avoid inundation and transport of exposed contaminated materials. These BMPs will also be used during pile removal and installation operations, as necessary. See BMP fact sheet NS-5, Clear Water Diversions, for applicable BMP information.

Implementation areas and storage locations of temporary sediment control BMPs for each phase are shown on the project BMP maps (See Figures 3 and 4).

5.3.6 Wind Erosion Control

BMPs to address wind erosion control shall be considered and implemented year around and throughout the duration of the project on all disturbed soils that may be subject to wind erosion, and when significant wind and dry conditions are anticipated during project construction. The objective of implementing wind erosion control measures is to prevent the transport of soil or sediments from disturbed areas of the project site to off-site locations by wind.

The following BMPs have been selected to control windblown dust from the construction site (control practice BMP fact sheet number included in parenthesis):

- Wind Erosion Control (WE-1)
  - All stockpiles, including soil stored on the barge, must be covered at all times.
  - Wind erosion control methods should be implemented immediately after the protective soil cap is placed. This may include providing temporary cover materials over the fill areas until stable vegetation coverage has been successfully established.

The project BMP maps (Figures 3 and 4) show the extent and location of the proposed wind erosion control measures for the project site.

5.3.7 Non-Storm Water Control

An inventory of construction activities and potential non-storm water discharges is provided in Section 5.3.1 of this document.

The following is a list of BMPs that have been selected to control non-storm water discharges on or from the project site (control practice BMP fact sheet number included in parenthesis):

- Water Conservation Practices (NS-1)
- Dewatering Operations (NS-2)
- Clear Water Diversion (NS-5)
- Illicit Connection/Discharge (NS-6)
- Potable Water/Irrigation (NS-7)
- Vehicle and Equipment Fueling (NS-9)
  - All heavy equipment operating in or near the water's edge shall use bio-diesel for fuel and vegetable oil as hydraulic fluid.
- Pile Driving Operations (NS-11)
  - As specified in the project EIR silt screens, straw bales, coffer damming, and/or water bladder walls appropriate for use in estuary and intertidal settings shall be installed around piling during removal and installation activities, and shall be maintained through construction. See BMP fact sheet NS-5 for additional direction.
  - Pile-driving activities and other in-water construction activities shall be limited to the time period of September 1 through November 30 to avoid direct impacts to juvenile salmonids, and during low tide during this period to minimize impacts to adult salmonids.
- Concrete Curing (NS-12)
- Concrete Finishing (NS-13)
- Material Over Water (NS-14)
- Demolition Adjacent to Water (NS-15)

There will be no vehicle and/or equipment cleaning allowed on site. Additionally, there will be no vehicle and/or equipment maintenance allowed on site. All equipment and materials used on site will need to be cleaned and maintained at an off-site location.

5.3.8 Waste Management and Materials Pollution Control

An inventory of construction activities, and materials that could potentially impact storm water at the project site, is provided in Section 5.3.1 of this document.

The following BMPs have been selected to control construction site wastes and materials (control practice BMP fact sheet number included in parenthesis):

- Material Delivery and Storage (WM-1)
  - As outlined in the project EIR, a temporary causeway may be necessary to transfer materials from barges to the island. Potential impacts from loss of fill during transfer of materials would be minimized by required mitigation, including the installation of BMPs and continuous monitoring and maintenance of the structure and transfer process. After construction, the structure would be entirely removed and the mudflat rehabilitated to pre-construction conditions.
- Material Use (WM-2)
  - All construction materials used for the project, and all debris originating from the project shall be stored and/or contained within the designated area in a manner to preclude their uncontrolled entry and dispersion to the waters of Humboldt Bay. Any material and/or debris resulting from construction activities that inadvertently enters Humboldt Bay shall be removed from the bay water immediately.
- Stockpile Management (WM-3)
- Spill Prevention and Control (WM-4)
  - Fuels, lubricants, and solvents shall not be allowed to enter the waters of Humboldt Bay. Prior to the start of activities that could potentially result in a liquid hazardous materials spill, hazardous materials management material and equipment shall be available immediately on-hand at the project site.
- Solid Waste Management (WM-5)
  - Any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion.
- Hazardous Waste Management (WM-6)
  - As hazardous waste is excavated, it will be placed in drums, stored in the designated area, under cover and then transported off site.
- Contaminated Soil Management (WM-7)
  - As contaminated soil is excavated, it will be placed in drums, stored in the designated area, under cover and then transported off site.
- Concrete Waste Management (WM-8)
  - All concrete wash-out must be done off site.
- Sanitary/Septic Waste Management (WM-9)
- Liquid Waste Management (WM-10)

5.4 Construction BMP Maintenance, Inspection, and Repair

The Tribe is responsible for inspecting, maintaining, and repairing all the facilities and treatment systems that are installed to achieve compliance with this NPS/SWPPP and the General Permit. Any facility or treatment system that does not adequately contain or manage storm water at the project site shall be reported to the Site Manager, and repaired or replaced within 48 hours.

Following the installation of erosion and sediment controls, the Site Manager shall meet with the Contractor to the review the project NPS/SWPPP. A walk-through or site inspection shall be performed to verify that all BMPs have been implemented in the field. Any improper installations or necessary repairs to complete the task should be noted during the inspection.

During dry weather periods, the entire project site should be inspected weekly. On days before predicted rainfall events (0.10 of an inch or more), inspections of the project site before and after the storm event is required. All disturbed areas of the site, material storage locations, site entrances/ exits, perimeter waterways and other sediment controls must be inspected.

Each designated BMP will be inspected within 48 hours after each rainfall event that is sufficient to create sediment transport. The BMPs will be checked for:

1) structural integrity,
2) sediment accumulation,
3) evidence of excessive sediment downstream of the site, and
4) evidence of other construction materials being washed off site.

Any problem areas that are noted during the inspections will be documented, and adequate control measures will be identified and implemented immediately. The storm water monitoring forms are presented in Appendix B.

The Site Manager should keep an active log of weekly pre-storm inspections. This log should also provide the locations of specific BMPs that need maintenance or repairs, actions taken, the date the repairs were completed, and any significant observations made. The inspector should also keep post-storm event inspection reports that include similar information, as well as the size and duration of the storm event.

The Contractor shall maintain written records of all major grading and stabilization activities occurring on the project site and the timing of each activity. The Contractor shall also keep track of the dates and the required BMPs to be installed, and the site personnel responsible for installing them.

If a reportable quantity release report is filed for the project site, the report will provide the date, time, type of material spilled, approximate quantity, and the appropriate regulatory agencies that are notified. This form shall be completed on any occasion that a reportable quantity spill occurs at the site (as established under 40 CFR Parts 110, 117 or 302). The Spill Prevention, Containment and Countermeasure Plan for the project site is provided in Appendix C; the plan includes a spill response data notification sheet to be used in the event a reportable release at the site.
The purpose of storm water inspections is to evaluate BMP effectiveness and implement repairs or design changes as soon as feasible.

- Inspections shall be completed by the Contractor's site manager.
- Inspections are recommended on a regular basis during dry weather. The purpose of dry-weather inspections is to ensure proper implementation of BMPs that are not necessarily weather-related. Examples include non-storm water, waste management, and sediment tracking control BMPs.

- A checklist is required during each inspection. A Storm Water Quality Construction Site Inspection Checklist is included in Appendix B. This checklist shall be used for all inspections unless the project's contract documents require the Contractor to use a different checklist.

The name(s) and contact number(s) for the assigned inspection personnel are listed below:

Jon Mooney, Table Bluff Reservation - Wiyot Tribe	707- 733-5055 (office) 707- 845-3030 (cell)
Mike Foget, P.E., SHN Consulting Engineers & Geologists, Inc.	707-441-8855 (office) 707-845-3040 (cell)

5.5 Post-Construction Storm Water Management

5.5.1 Post-Construction Control Practices

Post-construction BMPs are permanent measures that will be implemented during construction that are designed to reduce or eliminate pollutant discharges from the project site after construction is completed. Post construction erosion control practices will include the following:

- Stabilize non-active areas within 14 days of the termination of construction activities.
- Return any natural drainage swales that were impacted during construction of the project to their original condition.
- Conduct any seeding or re-vegetation during the defined seasonal seeding window.
- Upon completion of construction, apply permanent erosion control measures to all remaining disturbed areas.
  - As previously mentioned, apply rice straw and chipped vegetation from site clearing to all exposed areas.
  - Reseed all exposed areas with native grasses.
  - Use jute matting on the edges of the cultural cap to prevent the slope from eroding until vegetation is established.

5.5.2 Operation/Maintenance after Project Completion

Long-term operation of the post-construction BMPs that are described above will be funded and maintained by the Tribe after project completion. All silt fences and staked fiber rolls installed around the perimeter of the site will be removed following project completion.

6.0 Sampling and Analysis of Pollutants in Storm Water Runoff

6.1 Monitoring and Reporting Program

6.1.1 Site Inspections

Site inspections conducted for monitoring purposes will be performed using the inspection checklist shown in Appendix B. The Site Manager will inspect the site prior to a forecast storm, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events, and as specified in the contract documents. The results of all inspections and assessments will be documented, a copy shall be provided to the Tribe within 24 hours of the inspection, and copies of the completed inspection checklists will be maintained with the NPS/SWPPP.

6.1.2 Non-Compliance Reporting

If a discharge occurs or if the project receives a written notice of non-compliance, the Contractor will immediately notify the Tribe; file a written report to the Tribe within 7 days of the discharge or notice; and file a written report to the RWQCB within 30 days or identification of non-compliance. Corrective measures will be implemented immediately following the discharge, notice or order. All discharges shall be documented on a Discharge Reporting Log (Appendix B).

- The report to the Owner/Developer and to the RWQCB will contain the date, time, location, nature of operation, and type of unauthorized discharge, including the cause or nature of the notice or order
- The control measures (BMPs) deployed before the discharge event, or prior to receiving notice or order
- The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence
- An implementation and maintenance schedule for any affected BMPs

6.1.3 Record Keeping and Reports

Records shall be retained for a minimum of three years for the following items:

- Site Inspections
- Compliance Certifications
- Discharge Reports
- Approved NPS/SWPPP Document and Amendments

6.2 Sampling and Analysis Plan

6.2.1 Scope of Monitoring Activities

The provisions of the Construction General Permit require permittees to implement specific sampling and analytical procedures to determine whether BMPs implemented on construction sites are:

- preventing further impact by sediment in the storm water runoff discharged directly into waters listed on the State's 303(d) list as impaired for sediment/siltation and/or turbidity; and
- preventing other non-visible pollutants that are known to exist on site and, if discharged in storm water runoff, may result in exceeding applicable water quality objectives set by the RWQCB.

This sampling and analysis plan has been prepared pursuant to the requirements of the General Permit (including resolution 2001-046). The following sections of the sampling and analysis plan describes the sampling and analysis strategy and schedule for monitoring sedimentation/siltation and/or turbidity in 303(d) listed water bodies and for monitoring non-visible pollutants in storm water.

6.2.2 Sedimentation/Siltation and/or Turbidity Monitoring

Surface runoff emanating from construction activities at the Tuluwat Restoration Project site will not discharge directly into waters listed on the State's 303(d) list for sedimentation/siltation and/or turbidity. Therefore, sampling locations for storm water monitoring for Settleable Solids (SS), Total Suspended Solids (TSS), and/or Turbidity have not been identified for this project.

6.2.3 Non-Visible Pollutant Monitoring

A contingency program for sampling and analysis of potential pollutants that are not visually detectable in storm water runoff has been developed for this project. A list of the potential pollutants that may be present at the project site is included as Table 1. These pollutants, and the activities that may generate these pollutants, are also listed in various sections of this NPS/SWPPP. Additional pollutants that are not listed on Table 1, but that may be introduced to storm water from the project site during the construction phase, will be added to the table as appropriate.

Humboldt Bay is 303(d) listed for PCBs and dioxins, and every effort should be made by the Tribe and selected contractors to contain and properly manage materials on site to avoid the need for sampling and analysis. If sampling and analysis is required, all sampling, sample preservation, and analyses will be conducted according to test procedures under 40 Code of Federal Regulations (CFR) Part 136. Field samples shall be collected and analyzed according to the specification of the manufacturer of the sampling devices employed. Portable meters, if used, shall be calibrated according to manufacturer's specifications. All field and/or laboratory analytical data shall be kept with the NPS/SWPPP document, which is to remain at the field office at all times until an NOT has been submitted and approved for the site.

Table 1
Potential Non-Visible Pollutant Sources and Best Management Practices
Tuluwat Restoration Project, Indian Island

Activity and Site Location	Best Management Practices (BMPs)	Potential Pollutant Source	Visual Observable?	Field Test Method
Excavation of contaminated midden	Hazardous Waste Management (WM-6) Contaminated Soil Management (WM-7) Demolition Adjacent to Water (NS-15)	Contaminated Soil (dioxins, metals, PCP)[1]	Yes; Cloudiness/ Turbidity	N/A[2]
Constructing/ Deconstructing the Temporary Causeway	Tracking Control (TC-1) Materials Over Water (NS-14)	Fill Materials (clean soil/gravel)	Yes; Cloudiness/ Turbidity	N/A
Construction of Protective Soil and Geotextile Cover	Straw Mulch (EC-6) Geotextiles & Mats (EC-7) Wood Mulching (EC-8)	Fill Materials (clean soil/gravel)	Yes; Cloudiness/ Turbidity	N/A
		Soil Stabilization Materials (straw/mulch)	Yes; Solids	N/A
Transportation of Materials	Materials Management (WM-1)	Fill Materials (clean soil/gravel)	Yes; Cloudiness/ Turbidity	N/A
		Contaminated Materials (soil/debris with contaminants)	Yes; Cloudiness/ Turbidity	N/A
Construction of all structures including buildings, docks, and bulkhead	Materials Management (WM-1) Materials Use (WM-2) Materials Over Water (NS-14)	Concrete Products	Yes; Milky Liquid	N/A
		Painting Products	Yes; Paint/Color	N/A

1. PCP: Pentachlorophenol
2. N/A: Not applicable, visually observable so no field testing or laboratory testing required.

The sampling and analysis contingency program will be triggered when a visual inspection of the project site indicates one or more of the following example scenarios:

- any of the visual observations noted on Table 1 (sheens, cloudiness, odor);
- a breach of a containment area protecting and storing non-visible pollutants, where runon or runoff is suspected to have commingled with the pollutants;
- malfunction of a BMP or device resulting in a suspected release of non-visible pollutants;
- leakage or spill from installed BMPs;
- exposure of stockpiled or spilled materials (containing non-visible pollutants) with site runon or runoff; and
- commingling of storm water or other water with soluble or uncured soil amendments.

If a visual observation indicates the possible release of non-visible pollutants into site storm water runoff, the trained personnel or companies shall immediately conduct the appropriate field test, as shown in Table 1. If there is no field test available, samples will be collected and analyzed in accordance with the methods specified in Table 2.

Table 2 Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants Tuluwat Restoration Project, Indian Island			
Pollutant Type	**Sample Collection**	**Sample Preservation**	**Analysis**
Dioxin Compounds	1-L[1] Amber Glass	NA[2]	EPA 8290 D/F
Heavy Metals	250 ml[3] Plastic	HNO_3[4]	EPA 200 Series
Pentachlorophenol	250 ml Amber Glass	NaOH[5]	Canadian Pulp Report Modified Method

1. L: Liter
2. NA: Not Applicable
3. ml: milliliter
4. HNO_3: Nitric Acid
5. NaOH: Sodium Hydroxide

6.2.4 Sampling Locations

Under existing site conditions, the project does not appear to have potential for direct (concentrated) storm water discharges to Humboldt Bay at any known surface water discharge locations. Site observations indicate that stormwater primarily percolates through the site soils, which are composed primarily of pervious midden. In the event that surface runoff does occur, two potential storm water runoff sampling locations have been identified based on site topography (SW-1 and SW-2 on Figure 3). The contractor shall monitor these locations during and after rain events to document whether or not runoff occurs. If direct surface runoff to Humboldt Bay occurs at either location and the runoff appears impacted, sampling shall be conducted. Additional sampling locations will need to be selected if other discharge locations are identified during construction activities. Sampling locations for tidal-related discharges to Humboldt Bay will also need to be identified, as necessary, during construction activities.

In the event of a discharge location being identified for Humboldt Bay, sample locations will be marked on the site map and selected to include:

- A sample location (designated number HB-1) that is upstream (flood tide) of all direct discharge from the construction site for the collection of a control sample to be analyzed for the prevailing condition of the receiving water without any influence from the construction site. The control sample will be used to determine background levels in the 303(d) listed water body upstream (flood tide) of the project, if any.
- A sample location (designated number HB-2) that is immediately downstream (ebb tide) from the last point of direct discharge from the construction site for the collection of a sample to be analyzed for potential increases in contaminant levels in the 303(d) listed water body caused by any non-pint source and/or storm water discharged from the project, if any.
- Any other identified sampling locations designated for monitoring observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and/or historical site usage areas that may have the potential to contribute non-visible pollutants to non-point source and/or storm water runoff from the project site.

6.2.5 Sampling and Analysis Protocol

Sampling Schedule. Storm water samples will be collected during the first two hours of discharge, when the discharge occurs during daylight business hours. All storm events that occur during daylight hours will be sampled up to a maximum of four rain events within a 30-day period. In conformance with the USEPA definition, a minimum of 72 hours of dry weather will be used to distinguish between separate rain events.

Monitoring Preparation. An adequate stock of supplies and equipment for sampling will be available at the project site or provided by the analytical laboratory prior to a sampling event. Sampling supplies and equipment will be stored in a cool-temperature environment that will not come into contact with rain or direct sunlight.

Sampling Equipment and Supplies. Supplies maintained at the site will include, but will not be limited to, surgical gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, Sampling Activity Log forms, and Chain-of-Custody (COC) forms.

Laboratory Analysis. All sampling, sample preservation, and laboratory analyses will be conducted according to the test procedures specified in 40 CFR Part 136 and/or in accordance with Method 1060 of *Standard Methods for the Examination of Water and Waste Water*, latest edition. Sampling will be conducted by project personnel trained and experienced in sample collection, handling, and preservation procedures. Copies of the COC form supplied by the analytical laboratory and completed by field sampling personnel shall be filed with the sample event log in the NPS/SWPPP files.

6.2.6 Corrective Measures and Notification If Field Testing Indicates a Problem

If the field sampling program positively indicates the presence of non-visible pollutants that may affect or exceed the applicable water quality objectives in the Basin Plan (or other criteria supplied by the local regulatory agencies), project personnel will immediately initiate corrective action measures to identify the pollutant source and eliminate and/or control it.

The following are examples of corrective measures that may be employed at the project site:

- The Contractor shall contact SHN immediately if visual observations indicate that there are any direct discharges of concentrated runoff from the project site. This includes clear water discharges and any other discharges of materials, liquids, or other wastes to Humboldt Bay.
- The Contractor shall employ additional BMPs as necessary to eliminate and/or control discharges of concentrated runoff off-site, this may include installation of additional water bladders and/or other equivalent devices designed to capture and contain liquid materials.

In situations where polluted non-point source/storm water discharges may exceed applicable water quality standards in the local receiving water, the RWQCB will be notified by telephone as soon as possible, but no later than 48 hours after the discharge has occurred. This verbal notification will be followed by a written report within 14 calendar days, unless or otherwise directed by the RWQCB. The report shall include the reasons for the discharge, the duration and volume of the discharge, and steps taken to correct and keep the problem from recurring.

6.2.7 Sample Collection and Handling Procedures

Only personnel trained in proper water quality sampling will collect samples. Table 3 identifies the individuals primarily responsible for conducting water sampling and alternate sampling personnel available in the case of emergency, sick leave, and/or vacations during storm water monitoring periods.

Table 3
Project Personnel Authorized to Conduct Sampling
Tuluwat Restoration Project, Indian Island

Project Personnel	Name	Title/Company	Phone Number
Primary/Alternate Sampling Personnel	Environmental Field Technician or Engineer	SHN	707-441-8855 (office)

To maintain sample integrity and prevent cross-contamination, all sampling personnel will:

- Wear a clean pair of surgical gloves prior to the collection and handling of each sample at each location.
- Ensure the inside of the sample bottle does not come into contact with any material other than the water sample.
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection.
- Ensure the cooler lid is closed once samples are placed inside.
- Ensure the exposed end of a sampling tube remains untouched (clean), if applicable.
- Avoid allowing rainwater to drip from rain gear or other surfaces into sample bottles.
- Refrain from eating, smoking, or drinking during sample collection.
- Refrain from sneezing or coughing in the direction of an open sample bottle.
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place.
- Decontaminate sampling equipment prior to sample collection using a Trisodium Phosphate (TSP)-soapy water wash, distilled water rinse, and final rinse with distilled water.
- Dispose of decontamination water/soaps appropriately (that is, not discharge to the storm drain system or receiving water).

Non-Visible Pollutant Monitoring. Grab samples for non-visible pollutant monitoring will be collected and preserved in accordance with the methods identified in the Table 2.

Samples of discharge will be collected for observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Samples will be collected by placing a separate lab-provided sample container directly into a stream of water downgradient and within close proximity to the potential non-visible pollutant discharge location. This separate lab-provided sample container will be used to collect water, which will be transferred to sample bottles for laboratory analysis. The upgradient and uncontaminated background samples shall be collected first prior to collecting the downgradient to minimize cross-contamination. The sampling personnel will collect the water upgradient of where they are standing. Once the separate lab-provided sample container is filled, the water sample will be poured directly into sample bottles provided by the laboratory for the analyte(s) being monitored.

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, documented on a COC form provided by the analytical laboratory, sealed in a re-sealable plastic storage bag, placed in an ice-chilled cooler, at as near to 4 degrees Celsius as practicable, and delivered within 24 hours to the following California state-certified laboratory:

North Coast Laboratories
5680 West End Road
Arcata, CA 95521-9202
707-822-4649

For dioxin sampling, ship samples to:

Frontier Analytical Laboratory
5172 Hillsdale Circle
El Dorado Hills, CA 95762
916-934-0900

6.2.8 Sample Documentation Procedures

A separate sample event log shall be completed and filed for each sampling event. A copy of the NPS/SWPPP site map showing the locations of sampling points shall be attached to each sample event log. In the case of field tests, verification of the calibration of field testing equipment should be noted on the log, and each reading should be clearly documented. For all laboratory analyses, a copy of the COC form should be attached to the sampling log. When analytical results are received from the laboratory, they will be included with the sample event log.

Documentation for each sampling event shall also include records of corrective actions taken as a result of field observations, testing, or laboratory analytical results. All sample event documentation shall be maintained in the NPS/SWPPP files and shall remain at the field office at all times until construction activities have been completed.

All original data documented on sample bottle identification labels, COC forms, Sampling Activity Logs, and Inspection Checklists will be recorded using waterproof ink. These will be considered accountable documents. If an error is made on an accountable document, the individual will make corrections by drawing a single line through the error and entering the correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated. Copies of the Sampling Activity Log and COC form are provided in Appendix B.

Sample Bottle Identification Labels. Sampling personnel will attach an identification label to each sample bottle. At a minimum, the following information will be recorded on the label, as appropriate:

- Project name
- Project number
- Unique sample identification number and location
- Collection date/time
- Analysis constituent

Sampling Activity Logs. A log of sampling events will identify:

- Sampling date
- Separate times for collected samples and QA/QC samples recorded to the nearest minute
- Unique sample identification number and location
- Analysis constituent
- Names of sampling personnel
- Weather conditions (including precipitation amount)
- Field analysis results
- Other pertinent data

Chain of Custody Forms. All samples to be analyzed by a laboratory will be accompanied by a COC form provided by the laboratory. Only the sample collectors will sign the COC form over to the lab. COC procedures will be strictly adhered to for QA/QC purposes.

Storm Water Quality Construction Inspection Checklists. When applicable, the Contractor's storm water inspector will document on the checklist that samples for non-visible pollutants were taken during a rain event.

7.0 Training

Section 12 of the General Permit states that individuals responsible for NPS/SWPPP preparation, implementation, and permit compliance shall be appropriately trained, and that all training will be documented in the NPS/SWPPP. This includes personnel responsible for the installation, inspection, maintenance, and repair of BMPs. The designated personnel responsible for overseeing, revising and amending this NPS/SWPPP shall also document personnel training.

To satisfy the Section 12 requirement, the person or persons designated herein as the Site Manager shall indicate on the training form included in Appendix B, the specific training that he or she has received. Training should be both formal and informal, and may include attendance at seminars, review of technical manuals, discussions with experts, and personal experience on jobs where reduction of pollutants was a significant part of the project. One copy of this form should be included for each person that is designated as a Site Manager.

In addition to specific training for the Site Manager, informal training should be conducted during the project and include "tailgate" safety meetings that address the following topics:

- Erosion control BMPs
- Sediment control BMPs
- Non-storm water BMPs
- Waste management and materials pollution control BMPs
- Emergency procedures specific to the construction site storm water management

8.0 List of Subcontractors

All contractors and subcontractors for this project will be notified of the requirement for non-point source/storm water management measures to be implemented during all construction activities. A list of contractors for this project will be maintained and included in the NPS/SWPPP. If subcontractors are changed or replaced during the project, the list will be updated as necessary. The following is a list of contractors and subcontractors that are responsible for implementing the NPS/SWPPP for this project:

List of Contractors and Subcontractors			
Company	Contact Person	Date Work Begins	Date Work Ends

Spill Prevention, Containment, and Countermeasure Plan

1.0 Statement of Purpose

SHN has prepared this Spill Prevention, Containment and Countermeasure (SPCC) plan on behalf of the Wiyot Tribe to address spill prevention, containment, and countermeasure procedures associated with the construction of Tuluwat Restoration Project on Indian Island. This SPCC plan has been developed specifically to address the requirements outlined in the statement of mitigation monitoring and reporting programs for the Tuluwat Restoration Project, as provided by the City of Eureka on April 14, 2008.

The mitigation and monitoring program requires that the Wiyot Tribe prepare and implement a City-approved spill containment and clean-up plan for all construction activities at the project site. This SPCC plan is necessary because the Tuluwat Restoration Project is being constructed near Environmentally Sensitive Habitat Areas (ESHA), and may use temporary on-site aboveground fuel storage tank facilities and construction equipment that could discharge harmful quantities of fuel and/or hydraulic fluids into navigable waters of the United States. The primary purpose of this SPCC plan is to decrease the probability for a spill occurring by proper planning, training, and awareness. This SPCC plan also provides pre-planned response and countermeasures to be implemented in the event a reportable spill does occur. There are no rigid procedures that will always fit the unexpected; however, common sense and proper immediate response will minimize the effect of any spill.

As required in the mitigation and monitoring program for the Tuluwat Restoration Project, this SPCC plan sets forth, at a minimum, the following limitations and restrictions for equipment fueling and maintenance activities at the project site:

- Fuels, lubricants, and solvents shall not be allowed to enter the waters of Humboldt Bay.
- Prior to the start of any activities that could potentially result in a liquid hazardous materials spill, hazardous materials management equipment, including oil containment booms and absorbent pads, shall be available immediately on-hand at the project site.
- A registered fire-response, professional hazardous materials clean-up/remediation service shall be locally available on call to respond within two hours of being notified of a spill.
- Any accidental spill shall be rapidly contained and cleaned up.
- All heavy equipment operating in or near the water's edge shall use bio-diesel for fuel and vegetable oil and/or approved non-petroleum hydraulic fluid as hydraulic fluid.
- All equipment shall be parked in a designated area, and shall have a drip pan or diaper below to catch drips.
- The Tribe shall regularly inspect construction activities to insure equipment is free of leaks and is in good working order.

2.0 Owner/Contractor Approval

This SPCC plan has been prepared by SHN Consulting Engineers & Geologists, Inc. (SHN) for the Wiyot Tribe's Tuluwat Restoration Project on Indian Island. This SPCC plan will be implemented as herein described.

Owner/Representative responsible for Project Site: Jon Mooney, Wiyot Tribe

Signature: _____ Date: _____

Contractor responsible for Phase I:

Signature: _____ Date: _____

Contractor responsible for Phase II:

Signature: _____ Date: _____

Contractor responsible for Phase III:

Signature: _____ Date: _____

Contractor responsible for Phase IV:

Signature: _____ Date: _____

Contractor responsible for Phase V:

Signature: _____ Date: _____

3.0 Spill Prevention, Containment and Countermeasure

This SPCC plan focuses on preventing releases of petroleum-based products or other regulated materials that are used and/or stored in significant quantities at the project site. In addition to this SPCC plan, the project site has a Storm Water Pollution Prevention Plan (SWPPP), which describes Best Management Practices (BMPs) that are implemented to prevent releases of pollutants to "waters of the State."

The primary cause of petrochemical or other regulated material spills are mishandling, overfilling, or damage to the product storage container. Containment and proper cleanup of spilled petrochemicals or other regulated materials, which have been or may potentially be discharged to Humboldt Bay or "waters of the State," should be given top priority over all other activities with the exception of those essential to fire protection and personal safety.

3.1 Spill Containment and Clean-Up Activities

The Site Manager or designated alternate is in charge of spill containment and cleanup activities. The Site Manager or alternate will assign properly trained personnel and equipment to such tasks as may be necessary to effect proper containment and cleanup of the spilled material. In the event that on-site resources are inadequate to effect prompt containment and cleanup, the Site Manager, or alternate shall arrange for rental of equipment from outside sources or retention of outside contractors as outlined in "Section 4.0: Contact List and Phone Numbers."

If the spilled material reaches Humboldt Bay, or discharges to a drainage ditch that could potentially discharge to Humboldt Bay or "waters of the State," the Site Manager or alternate will make the designated telephone notifications as outlined in "Section 4.0: Contact List and Phone Numbers." If the spilled material has not reached Humboldt Bay or a drainage ditch, the following cleanup procedures shall be implemented:

- If the spill is from an operating machine or piece of equipment, the machine or equipment will immediately be shut down. The machine or equipment will not be moved without authorization from the Site Manager, or other designated supervisor. If the spill source continues to leak, an attempt will be made to stop it, or a bucket or other appropriate container will be placed under the leak. The leak will then be fixed prior to re-starting the machinery.
- If the spill occurs on an impervious surface, the material will be initially collected using a squeegee and dustpan, or a shovel and bucket. A layer of dry absorbent material will then be placed over the spill area. Approximately 30 minutes after the absorbent is applied, it will be swept up and contained inside an approved container. Absorbent material will not be placed on a spill area prior to using a squeegee for containment. The container will then be transferred to the hazardous materials storage area, pending proper disposal.
- If the spill occurs in an area where it may enter Humboldt Bay or a drainage ditch, absorbent booms will be used to contain the spill. After containment, the spilled material will be properly cleaned up and disposed.
- If the spill occurs on an unpaved area, it will be contained in as small an area as possible. Any standing liquid will be removed using absorbent pads or other suitable materials. The used absorbent pads/materials will be stored in drums, pending proper disposal. If contaminated soil removal is necessary, it will be coordinated with the Site Manager.

- Only absorbent materials will be used to clean up spills. The spill area will not be washed down and allowed to discharge into any on-site drainage. Only apply water to a spill area if suppressing a fire; however, block off all drainages, as necessary.
- If a spill occurs during heavy rains, any adjacent drainage should be blocked off, and the spilled material covered with a tarp until the cleanup operations can proceed.

3.2 Fuel Transfer Operations and Guidelines

To reduce the potential for spills during fueling operations, the following procedures will be implemented for all fuel transfers:

- Fuel only in designated areas.
- Personnel engaged in the transfer shall have ready access to oil absorbent materials and be familiar with their usage. Routine safety procedures, including no smoking in the area, will be strictly enforced.
- An operator shall remain in attendance for the duration of the transfer.

4.0 Contact List and Phone Numbers

The first person to discover an unauthorized release or spill shall notify his/her supervisor, who will contact the Tribe's Site Manager and SHN to notify the appropriate spill response personnel and regulating agencies as conditions warrant:

Jon Mooney, Site Manager	Office 707-733-5055
Wiyot Tribe	Cell 707-845-3030
Mike Foget, Environmental Services Director	Office 707-441-8855
SHN Consulting Engineers & Geologists, Inc.	Cell 707-845-3040

Upon such notification, the Site Manager or alternate will take charge of the spill containment and clean-up operation, and will initiate the spill notification procedures, if necessary. The supervisor in charge will remain at the site and manage the operations until relieved by the designated alternate supervisor in charge. The Site Manager, or in his or her absence, the Alternate Site Manager, shall assign personnel to begin prompt containment and cleanup of spilled material, and/or retain outside contractors for cleanup activities beyond the capabilities of facility personnel.

4.1 Licensed Hazardous Waste Response Units

If outside assistance is needed for containment or cleanup of a spill, one or more of the following licensed hazardous response waste units shall be contacted:

Marine Spill Response Corporation	707-442-6087
North Coast Environmental Construction	707-442-2032
NRC Environmental Services	707-441-0723
Chico Drain Oil	707-442-3269

4.2 Chemical Testing Laboratories

If chemical testing resources are necessary, one of the following laboratories should be contacted:

North Coast Laboratories, Ltd.	707-822-4649
Alpha Analytical Laboratories, Inc.	707-468-0401

4.3 Agency Spill Notifications (If the spill is a reportable quantity):

It is an offense not to report a spill. If there is a question about whether or not a spill is reportable, report it to the Site Manager; the Site Manager will make the appropriate notifications!!

Humboldt County Division of Environmental Health (HCDEH)	707-445-6215
California Regional Water Quality Control Board, North Coast Region (RWQCB)	707-576-2220
U.S. EPA Region IX (EPA), 2 spills totaling more than 42 gallons or one spill over 1,000 gallons	415-744-2000

If a spill enters Humboldt Bay or threatens to impact "waters of the State":

State of California Office of Emergency Services	800-852-7550
National Spill Response Center	800-424-8802
State of California, Department of Fish and Game, Eureka	707-445-6493
RWQCB	707-576-2220
HCDEH	707-445-6215
Humboldt County Sheriff's Department	707-445-7251
U.S. EPA Region IX	415-744-2000
U.S. Coast Guard	707-839-6100

Within two weeks of a reportable spill that results in a discharge to "waters of the State," the Site Manager shall make a written report of the spill incident to the California Regional Water Quality Control Board, North Coast Region, at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403. The report shall include the reasons for the discharge, the duration and volume of the discharge, steps taken to correct the problem, and steps taken to keep the problem from recurring.

First responders should conduct general spill actions in the following sequence for releases involving a hazardous material or petrochemicals:

1) Determine what has been spilled, and if a hazard to human health and the environment exists. **STOP** the spill at its source, unless it is beyond the capabilities of the trained personnel or the equipment available.
2) **NOTIFY** facility supervisory personnel as appropriate or responsible managers. Secure the spill area and warn others. Obtain the appropriate protective equipment and clothing.
3) **CONTAIN** the spilled material (create a berm, if necessary). Close or plug all necessary drain inlets, basins, or ditches that could carry the spilled material into Humboldt Bay or "waters of the State." If it is raining heavily, cover the spilled material.
4) **DO NOT** hose down or attempt to dilute the spilled material!!!!!!!!!
5) Properly **DISPOSE** of contaminated materials. The Site Manager will be responsible for managing spill wastes in accordance with all applicable laws and regulations.

5.0 Emergency Response/Spill Clean-Up Equipment List

Prior to the start of any activities that could potentially result in a liquid hazardous materials spill, hazardous materials management and emergency response equipment including, at a minimum oil containment booms and absorbent pads, shall be available immediately on-hand at the project site. A list of additional emergency response equipment that shall be maintained on site is included below.

Emergency Response/Spill Clean-Up Equipment (Maintained On-site)			
Material/ Equipment	**Function**	**Location(s)**	**Comments**
Bulk Absorbent Materials	For absorbing larger spills of petroleum based products and/or building berms, containment area	Storage bins	Use shovels, brooms, and/or other equipment available to transfer spent absorbent materials into storage containers
Protective Clothing and Equipment (including respirators)	Personal protection from physical and/or health hazards for employees in contact with hazardous materials	Call Site Manager and refer to MSDS[1] sheets to determine appropriate protective clothing and equipment	Used only by properly trained employees during cleanup, removal, or evacuation activities resulting from spills or releases of hazardous materials
Fire Extinguishers	Fire suppression	All vehicles, and various locations	Don't hose down spill unless fire hazard, block off all drainages
Water Pump	Transport water for fire suppression	Mobile	Can be used for fire fighting
Absorbent Pads and Booms	For use on land or water for most insoluble or slightly soluble organics. Not appropriate for use with acids.	All fueling areas and around lay equipment	Will float on water, so as to be most helpful in cleaning up materials contained within diked areas where a chemical sheen has formed on water collected within. Also, place around equipment or in areas of leaks or spills.
Loader with Bucket	Loading and transporting materials.	Mobile	For construction of emergency dikes, or transfer of spent absorbent materials.
Drums	For storage of spilled materials (liquid or solid)	Call the Site Manager (or alternate)	For temporary containment of spilled liquid of spent absorbent materials.
1. MSDS: Material Safety Data Sheets			

6.0 Spill Response Data Notification Sheet

The Site Manager shall use the following form to relate information in the event of a discharge to Humboldt Bay or "waters of the State":

Date: _____ Time: _____

INCIDENT DESCRIPTION

Reporter's Full Name: _____ Position: _____

Day Phone Number: _____ Evening Phone Number: _____

Company: _____ Organization Type: _____

Site Address: _____ Owner's Address: _____

_____ _____

_____ _____

Spill Location: _____

_____

Responsible Party's Name: _____ Phone Number: _____

Responsible Party's Address: _____

Source and/or cause of discharge: _____

_____

_____

Nearest City: _____

County: _____ State: _____ Zip Code: _____

Section: _____ Township: _____ Range: _____ County: _____

Distance from City: _____ Direction from City: _____

Container Type: _____ Container Storage Capacity: _____

Facility Oil Storage Capacity: _____

Material: _____

Total Quantity Released	Water Impact (Yes or No)	Quantity into Water

RESPONSE ACTION(S)

Action(s) taken to Correct, Control, or Mitigate Incident: _____

_____

Number of Injuries: _____ Number of Deaths: _____

Evacuation(s): _____ Number of Evacuated: _____

Damage Estimate: _____

More information about impacted medium: _____

_____

CALLER NOTIFICATIONS

National Response Center (NRC): 1-800-424-8802

Additional Notifications (Circle all applicable): State Other

ADDITIONAL INFORMATION

Any information about the incident not recorded elsewhere in this report: _____

_____

NOTE: DO NOT DELAY NOTIFICATION PENDING COLLECTION OF ALL INFORMATION.

CALIFORNIA COASTAL COMMISSION
45 FREMONT STREET, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200

EXHIBIT NO. **14**
APPLICATION NO.
1-08-017
WIYOT TRIBE
MEMO FROM DR. JACK GREGG, WATER QUALITY SUPERVISOR (1 of 3)

MEMORANDUM

TO: Bob Merrill and Melissa Kraemer
FROM: Jack Gregg, Ph.D., Water Quality Supervisor
RE: Wiyot Indian Island Restoration Interim Cleanup Measures - Water Quality Review
DATE: June 20, 2008

I reviewed the Draft Construction Stormwater Pollution Prevention Plan (June 2008); the Site Cleanup Plan (March 2006); responses by the applicants consulting engineers to the Regional Water Quality Control Board (RWQCB) comments on the Site Cleanup Plan; sections of the Draft Environmental Impact Report (May 2007) regarding Public Health Hazards and Hazardous Materials, Hydrology & Water Quality, and Geology and Tsunami; the Phase II Targeted Brownfields Site Assessment; Appendix E of the Phase II B Targeted Brownfields Site Assessment and excerpts of a report on sampling in the intertidal mudflats bayward of the site. I had only a limited time to review these extensive documents and my review focuses on the adequacy of the investigation based on the data presented and whether the proposed clean up plan will protect coastal resources.

The applicants are proposing an interim cleanup of the site to reduce impacts to water quality and the threat to human health. The documents I reviewed, taken as a whole and after addressing the comments of regulatory agencies, adequately document the basis of the proposed interim site cleanup. In order to complete the proposed development with continued protection of coastal resources and human health, additional cleanup will likely be required, but the proposed interim cleanup will significantly increase those protections in the near term.

Based on this review, my recommendations are:

1. The applicant be required to provide results of confirmation sampling to the Coastal Commission's water quality staff for review and comment before project completion;
2. The applicant be required to provide copies of all future site investigation (e.g., soil and groundwater monitoring), design and implementation documents to the Coastal Commission's staff for review in a timely manner;
3. The applicant provide a final SWPPP substantially in conformance with the draft documents to the CCC water quality staff for review prior to issuance of the permit;
4. The applicant provide a final Site Cleanup Plan to the CCC water quality staff if that document has been modified since March 2006 for review prior to issuance of the permit;

5. That the applicant provide notice to Commission staff prior to site clean up activities and offer appropriate access to Commission staff for observing field work during those activities.

Comments on the documents reviewed

Draft Construction Stormwater Pollution Prevention Plan (SWPPP)
The SWPPP was comprehensive in addressing the potential water quality impacts of the project and provided more details than most SWPPPs on how the specific challenges of construction at this site can be addressed to protect water quality. The document contained a combination of standard construction BMPs appropriately applied and site specific management practices to address issues such as the potential release of contaminants during removal of old pier pilings. The document addressed unique site features such as the shell mound and the bay and restricts construction periods to address both the rainy season and fish migration.

Site Cleanup Plan (SCP)
The SCP documents the known soil and groundwater contamination as of March 2006 and provides the rationale and general procedures for the removing 17 cubic yards of highly contaminated soil. It documents the location of the highest levels of Pentachlorophenol (PCP) and shows how those levels are correlated with the highest levels of Dioxin and Furan congeners. This information allowed the applicants to identify a area of soil removal that would significantly reduce the threat to water quality and human health and still minimize disturbance to cultural artifacts. Although some levels of soil contaminants still remain on the site, the cleanup is designed to remove soils with the most concentrated PCP and Dioxin, thus significantly reducing the threat that these materials will be eroded into the bay, further contaminate groundwater or be picked up by humans or animals.

Responses to the RWQCB comments on the Site Cleanup Plan
These responses acknowledged the RWQCB assertion that contaminants on the site will remain above regulatory cleanup levels even after the interim cleanup actions are taken. For this reason, the project has been designed as an interim cleanup that will not limit future cleanup efforts. The cleanup will remove 35 pounds of PCP within the 17 cubic yards of soil in the planned cleanup. The analysis also shows that removing approximately five times the soil as planned (up to 81 cubic yards total) would only remove an additional 3.5 pounds of PCP. In order to minimize impacts to the cultural artifacts, the lower volume of removal is proposed. The responses indicate that through discussions with the RWQCB staff and a USEPA toxicologist, the project revised the proposed interim cap that will be placed over the shell mound and the more highly contaminated areas of the site. The document indicates that a heavier geotextile fabric, with a low water flow rate, will be used and the covering soil in the highly contaminated areas will be at least 12 inches of clean soil.

Draft Environmental Impact Report (DEIR) sections on Public Health Hazards and Hazardous Materials, Hydrology & Water Quality, and Geology and Tsunami
The DEIR provided extensive background and conclusions about possible impacts of the project.

Phase II Targeted Brownfields Site Assessment (Phase II) and Appendix E of the Phase IIB Targeted Brownfields Site Assessment (Phase IIB)
The Phase II report provided information on historic site use and layout of the facilities, as well as distribution of soil contaminants that exceed state and federal action levels. The Phase IIB report provided additional soil information and groundwater sampling information, along with action levels. This report indicated that PCP was not found in groundwater samples, but that dioxin/furan congeners and arsenic exceeded action levels in some groundwater samples. This report recommended removing the treated wood way runners and the adjacent soil with high levels of PCP to reduce impacts to groundwater and risks to human health.

Intertidal mudflats sampling report excerpts
These excerpts included two sample locations in the intertidal mudflats about 50 feet bayward from the upper intertidal zone. These samples show metals and dioxin/furan contamination of the surface mudflat sediments. While the mudflats will not be subjected to cleanup actions by this project, the presence of contaminants is taken into account in the SWPPP for activities such as pier piling removal and installation of new pilings.