CALIFORNIA COASTAL COMMISSION
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Hearing Date:	May 9-11, 2007

REGULAR CALENDAR
STAFF REPORT AND PRELIMINARY RECOMMENDATION

Application No.: 6-06-126

Applicant: San Diego Gas and Electric Agent: Shannon Keithley

Description: The upgrading of two 138 kilovolt (kV) lines with a single 230 kV line to be installed underground within SDG&E's transmission right-of-way (ROW) across the Sweetwater Marsh via horizontal directional drilling (HDD) in association with the Otay Metro Powerloop (OMPPA).

Site: SDG&E Trans Line Right of Way (ROW) at Sweetwater Marsh, City of Chula Vista, San Diego County.

Substantive File Documents: City of Chula Vista Certified LCP, CDP 6-06-126-G, CDP 6-06-140, Geotechnical Investigation prepared by URS Corporation dated March 23, 2005, SDG&E EIR for Silvergate Transmission Substation, SDG&E EIR for Otay Metro Powerloop (OMPPA) project, Subregional Natural Community Conservation Plan prepared by SDG&E dated December 15, 1995, Drilling Fluid Release Monitoring and Contingency Plan for Horizontal Directional Drilling for the Silvergate Transmission Substation Project dated July 17, 2006, Biological Survey Form completed by Essex dated February 28, 2006.

STAFF NOTES:

Summary of Staff's Preliminary Recommendation:
Staff is recommending approval of the permit with special conditions. This is an after-the-fact-permit as the majority of work has already been completed through emergency permit 6-06-126-G. As proposed, the horizontal directional drilling (HDD) operation for undergrounding of an electrical line will not have any temporary or permanent impacts to environmentally sensitive habitat within the Costal Commission's jurisdiction. Temporary impacts are predicted for the staging area located north of Sweetwater River, however these impacts are within the City of Chula Vista's jurisdiction and will be revegetated.

While the project does not include the fill of coastal waters or wetlands, the electrical lines will be placed under the Sweetwater Marsh. It has been determined that the project is an incidental public service, however, which is one of the permitted uses in wetlands.

The primary concerns raised for this project include impacts to marine resources and water quality resulting from vertical fractures ("frac-outs") which may occur while drilling, as well as any unforeseen wetland vegetation impacts resulting from construction access and activities. SDG&E has a comprehensive spill contingeny plan for minimizing any biological impacts of the project. SDG&E also has a comprehensive plan for minimizing and restoring any impacts within the wetland vegetation described in their Natural Community Conservation Plan. Three vertical fractures or "frac-outs" occurred as a result of the drilling process. All of these have been documented with reports and photos. Impacts to Eelgrass are currently being surveyed. Staff is recommending that the Coastal Commission approve a coastal development permit for this development with special conditions including the submittal of a post-construction survey together with restoration plans for any documented wetland impacts. Conditions also include the submittal of any eelgrass survey, documentation or recommendations, once complete, as well as conformity to the Eelgrass restoration plan submitted by the applicant should any restoration be deemed necessary.

I. PRELIMINARY STAFF RECOMMENDATION:

The staff recommends the Commission adopt the following resolution:

MOTION: ***I move that the Commission approve Coastal Development Permit No. 6-06-126 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 THE 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.

II. Standard Conditions.

See attached page.

III. Special Conditions.

The permit is subject to the following conditions:

1. Construction Impacts/Restoration**. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit for Executive Director review and written approval, a post-construction survey of impacts to wetland and upland vegetation and substrate. The existing condition of the wetland and upland vegetation and substrate has been documented in the EIR and the Biological Survey Form completed by Essex dated February 28, 2006. After completion of the project, the post-construction survey shall assess and document the extent of impacts to wetland and upland vegetation and substrate to determine actual impacts. If temporary impacts to wetlands or uplands are identified, the post-construction survey shall also include a detailed revegetation plan, developed in consultation with the U.S. Fish and Wildlife Service. Implementation of the approved revegetation plan shall occur within 60 days of approval by the Executive Director or within such additional time as the Executive Director may grant for good cause. The revegetation plan, at a minimum, shall include:

a. A study indicating the type, size, and extent of all plant materials to be replaced, identifying any irrigation system necessary for revegetation and other landscape features required to revegetate inadvertent temporary wetland impacts.

b. Temporary wetland impacts shall be revegetated at a 1:1 ratio. If the post-construction survey identifies that permanent wetland impacts have occurred, a permit amendment is required to address the identified impacts. Mitigation shall be provided for any identified permanent wetland impacts at a ratio of not less than 4:1.

c. Any temporary upland impacts shall be revegetated at a 1:1 ratio. Drought tolerant, non-invasive native plants obtained from local stock, if available, shall be utilized to re-establish the area consistent with historic conditions.

d. The following goals, objectives, and performance standards for the restoration sites:

    1. Full restoration of all wetland impacts that are identified as temporary. Restoration of temporarily impacted areas shall include, at a minimum, restoration of before-impact hydrology, removal of all non-native plant species, and replanting with locally collected native wetland plant species.

2. Success criteria and final performance monitoring shall provide at least a 90% coverage of areas disturbed by construction activities within 1 year of completion of construction activities.

3. The final design and construction methods that will be used to ensure the restoration sites achieve the defined goals, objectives, and performance standards.

4. Submittal, within 30 days of completion of initial restoration work, of post-restoration plans demonstrating that the revegetated areas have been established in accordance with the approved design and construction methods.

5. A survey taken one year after revegetation identifying the quantity and quality of the restored plants. If the survey demonstrates the revegetation has been unsuccessful, in part or in whole, the survey shall include a plan for remediation and further surveys/reports until the sites are fully restored.

6. All surveys, reports or other documentation of the revegetation effort shall be submitted to the San Diego office of the Coastal Commission within 30 days of completion.

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

2. Eelgrass Mitigation and Monitoring Plan. The applicant shall conform to the final Eelgrass mitigation program submitted by the applicant dated February 27, 2007 titled Southwest Regional Office National Marine Fisheries Service Southern California Eelgrass Mitigation Policy. Any proposed changes to the applicant's Eelgrass mitigation program shall be reported to the Executive Director. No changes to the Eelgrass mitigation program shall occur without a Coastal Commission approved amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

3. Submittal Of Frac-Out Impacts Reports. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENTPERMIT**, all documentation referencing frac-out events including, but not limited to, cleanup, surveys, photographs, agency or consultant recommendations, and a mitigation plan shall be submitted to the San Diego office of the Coastal Commission within 30 days of completion.

4. Construction Best Management Practices. The applicant shall comply with the following construction-related requirements:

a. Construction-Related Requirements:

1. No construction materials, debris, or waste shall be placed or stored where it may be subject to wave, wind, rain, or tidal erosion and dispersion;

2. Any and all debris resulting from construction activities shall be removed from the project site within 24 hours of completion of the project;

3. Construction debris and sediment shall be removed from construction areas each day that construction occurs to prevent the accumulation of sediment and other debris which may be discharged into coastal waters;

4. All construction materials, excluding lumber, shall be covered and enclosed on all sides, and as far away from a storm drain inlet and receiving waters as possible.

5. Machinery or construction materials not essential for project improvements will not be allowed at any time in the intertidal zone.

b. Best Management Practices (BMPs) designed to prevent spillage and/or runoff of construction-related materials, sediment, or contaminants associated with construction activity shall be implemented prior to the on-set of such activity. Selected BMPs shall be maintained in a functional condition throughout the duration of the project. Such measures shall be used during construction:

1. The applicant shall ensure the proper handling, storage, and application of petroleum products and other construction materials. These shall include a designated fueling and vehicle maintenance area with appropriate berms and protection to prevent any spillage of gasoline or related petroleum products or contact with runoff. It shall be located as far away from the receiving waters and storm drain inlets as possible;

2. The applicant shall develop and implement spill prevention and control measures;

3. The applicant shall maintain and wash equipment and machinery in confined areas specifically designed to control runoff. Thinners or solvents shall not be discharged into sanitary or storm sewer systems; and

4. The applicant shall provide adequate disposal facilities for solid waste, including excess concrete, produced during construction.

5. Condition Compliance. Within 60 days of Commission action on this coastal development permit, or within such additional time as the Executive Director may grant for good cause, the applicants shall satisfy all requirements specified in the conditions hereto that the applicants are required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

IV. Findings and Declarations.

The Commission finds and declares as follows:

1. Detailed Project Description/Permit History. San Diego Gas & Electric is proposing to replace two existing 138/69 kilovolt (kV) power lines with a new 230/60 kV power line. A component of this project includes underground installation of the new line between the South Bay Power Plant (SBPP) and the Sweetwater River, including below the Sweetwater Marsh (ref. Exhibit #1&2). The underground route runs north and parallel to the west side of Bay Boulevard, crosses through developed and undeveloped areas, including SDG&E's ROW adjacent to the Sweetwater Marsh National Wildlife Refuge (SMNWR). This application is for the horizontal direction drilling (HDD) (ref. Exhibit #3) to be conducted below the Sweetwater Marsh only; all other components of the project are not addressed by this permit (including staging areas, drill pits, and conduit fusing sites).

The City of Chula Vista has a certified LCP and issues its own coastal development permits. The proposed drilling under Sweetwater Marsh is in the Commission's area of original jurisdiction, and the remainder of the project falls within the City of Chula Vista's coastal development permit jurisdiction. Those portions of the project within the City's coastal development permit (CDP) jurisdiction were found by the City to be exempt from CDP requirements. The project, as exempted by the city, includes all mitigation measures developed as a result of the certified EIR. This EIR addresses all significant environmental impacts associated with the staging areas, drill pits, conduit fusing, construction access, copper guide system, noise, pollution and lighting and developed appropriate mitigation measures. As stated above, the only component of the project that is before the Commission is the Horizontal Directional Drilling located within the Sweetwater Marsh.

The Horizontal Directional Drilling method drills and reams an underground tunnel, then pulls the conduits back through the hole (ref. Exhibit #3). At Sweetwater Marsh, the 230/60 kV transmission line will be installed by drilling beneath the marsh. The entry and exit pits will be located a minimum of 50' inland of the shoreline, and are within Chula Vista's permit jurisdiction. Procedures for this project entail drilling two holes of approximately 36" in diameter for a distance of 3,000 ft, the entire length of the marsh.

The maximum depth of the drill will be approximately 105' below ground surface. Drilling fluid of Bentonite mixed with water will be used to lubricate the auger during the drilling process. Additional additives may be used to adjust the mixture's properties to optimize the drilling process. The drilling fluid captures the soil cuttings generated at the bit as the fluid is circulated and the drill hole is advanced. This circulation of the drilling fluid returns the cuttings through the annular space between the drill rods and the casing wall. The drill pit will be set up at the entrance and exit locations to hold the Bentonite mixture and the soil cuttings. The drill pits are located outside of the California Coastal Commission direct permit jurisdiction, in upland areas. Each of the pits will be approximately 10' wide by 10' long by 5' deep.

In order to accurately locate and direct the drill bit during the drilling of the pilot hole, a surface monitoring system consisting of a copper wire grid will be established across the marsh between the entry and exit pits. Construction crews will place this grid by hand. By inducing a current through the wire grid, a magnetic field is established that can be used to locate and guide the drill bit (this wire grid is removed after completion of the drilling operation). Once a pilot hole is drilled, one or more reaming passes will be made to enlarge the drill hole to approximately 36" in diameter. Two drilling holes of equal size will be necessary for this project. Prior to pulling in the conduits a "swab" pass may be performed to ensure the hole is clear of cuttings and is completely open. Prior to conduit pull-in, the conduits will be fused together at a staging area to the south of the marsh. If possible, the conduits will be fused to the full length needed to cross the entire 3,000' distance from the exit pit to the entry pit. If this is not possible, the conduits will be fused into lengths as long as possible to minimize the need to stop during pull-in to fuse on additional sections of conduit. This improves the likelihood of successful pull-in. During conduit pull-in, the conduits may be filled with water to eliminate the positive buoyancy of the conduits. The installed conduits will be extended to vaults that will be installed at each end (north and south) outside the marsh. The conduits will then be transitioned to two cable poles to the north and south of Sweetwater Marsh.

On October 5th, 2006 the San Diego Regional Coastal Commission Office was contacted by SDG&E regarding vertical fractures (frac-outs) resulting from the horizontal directional drilling operations within the Sweetwater Marsh for this project. Due to a miscommunication between SDG&E, the Commission's Federal Consistency Unit and the City of Chula Vista, SDG&E had proceeded with the development with the understanding that the project was exempt and did not need a coastal development permit from the Coastal Commission for that portion of the development within the Commission's area of original jurisdiction. When SDG&E contacted the Commission's San Diego office regarding the frac-outs, they were made aware that the portion of the horizontal drilling project located within the Commission's original permit jurisdiction was not an exempt development and in fact, required review under a coastal development permit. SDG&E immediately stopped work at this time. Because the project was already mostly complete and because stopping the work for an extended period of time to process a coastal development permit could result in impacts on adjacent sensitive resources, on October 26, 2006, the Executive Director issued an emergency permit to complete the drilling project and proceed with necessary clean-up measures to address impacts caused

by the various frac-outs (ref. Emergency Permit #6-06-126-G) This permit is the follow-up to the emergency permit addressing the project as a whole, including the horizontal drilling activities as well as the activities associated with the cleanup of the vertical fractures resulting from the drilling.

2. Background. SDG&E is currently undergoing two maintenance projects to replace/underground (2) 230/60 kilovolt and (1) 138 kilovolt (kV) transmission lines located between the South Bay Power Plant and Sweetwater River called: The Otay Mesa Power Purchase Agreement (the subject development) and The Silvergate Substation Project (6-06-140). The Otay Mesa Power Purchase Agreement (OMPPA) Project will replace two existing 138/69 (kV) overhead transmission lines with one updated 230/60 (kV) underground transmission line. The Silvergate Substation project will replace the outdated Main Street Substation with a new updated substation. The existing Main Street Substation will be dismantled upon completion of the new Silvergate Substation. The Tie Line 13815 project will underground the remaining (1) 138kV overhead transmission line between the South Pay Power Plant and Sweetwater River.

Currently both the 230/60 and the 138 kV lines are installed on lattice steel bridge structures located within the existing SDG&E Right Of Way (ROW). The two projects combined will underground all electrical lines in the region and allow for future removal of the lattice steel bridge structures. Horizontal directional drilling will be used to underground the transmission lines within the Sweetwater Marsh. The 230/60 kV line will require (2) 36" drill holes, the 138 kV line will require (1) 52" drill hole, for a total of three complete borings.

As noted above, although the horizontal directional drilling is already complete, the Commission is reviewing this application as if the project has not yet taken place and consideration of this permit application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Special Condition #5 requires that the applicant satisfy all conditions of this permit, which are prerequisite to the issuance of this permit within 60 days of Commission action, or within such additional time as the Executive Director may grant for good cause.

3. Public Access. The project is located between the first public road and the sea therefore the Commission must make a specific finding that the development is consistent with the public access and recreation policies of Chapter 3 of the Coastal Act. Pub. Res. Code Section 30604(c).

Section 30210 of the Coastal Act states, in pertinent part:

…maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs.

Section 30211

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

The project is located within Sweetwater Marsh. Located directly west is the Sweetwater Marsh National Wildlife Refuge (SMNWR), a USFWS facility. The Chula Vista Nature Center is located within the (SMNWR). The Nature Center is a facility of the City of Chula Vista. The Chula Vista Nature Center has a high volume of daily visitors and houses extensive interpretation programs including formal environmental education classes, brochures, guided walks, special events, volunteer programs, nature trails and wildlife viewing platforms among others.

This project will remain within SDG&E's existing ROW and therefore the various programs and public access trails will not be impacted by the proposed development. There is a parking lot associated with the Nature Center that could potentially be used for delivery and/or parking by construction crews. While the nature center and its associated parking lot are located outside of the Commission's direct permit jurisdiction, the project (within the City's jurisdiction) does include provisions to address public access. The parking lot is a fee-owned property of SDG&E. SDG&E rents the lot to the City of Chula Vista. SDG&E worked with the City of Chula Vista to ensure adequate alternative parking for the Nature Center. By providing alternative parking for the existing Nature Center parking lot, public access will be protected.

The proposed project will not change existing public access conditions and recreational opportunities in the area, with the possible exception of reducing parking at the Nature Center. This potential impact is mitigated through SDG&E's proposal to provide alternative parking for the Nature Center. Therefore, the proposed project is consistent with the public access and recreation policies of Chapter 3 of the Coastal Act.

4. Protection of Wetlands. Section 30233 outlines the uses permitted within a wetland and state:

Section 30233

(a) 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:

(l) 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. [emphasis added]

(5) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.

(6) Restoration purposes.

(7) Nature study, aquaculture, or similar resource dependent activities.

[. . .]

Incidental Public Purpose

Section 30233 of the Act prohibits diking, filling or dredging of open coastal waters, wetlands or estuaries unless the development consists of one of the seven enumerated permitted uses. In addition, the development must also be the least environmentally damaging alternative and must minimize any adverse environmental impacts.[1] In this case, the proposed project involves the undergrounding of electrical transmission lines in Sweetwater Marsh, located in the City of Chula Vista. This project will require horizontal directional drilling within the marsh for a distance of approximately 3,000 feet. The applicant is proposing to install the electrical line a maximum of approximately 105' feet below Sweetwater Marsh using the HDD process without disruption to coastal waters or wetlands. However, assuming that the project is subject to Section 30233, in this particular case, the proposed development is one of the seven permitted uses enumerated in Section 30233. As discussed previously, no portion of the proposed transmission line would be installed directly within wetlands or any other environmentally sensitive habitat area. Section 30233 of the Coastal Act allows for the diking, filling or dredging of wetlands for incidental public service purposes, including, but not limited to, burying electrical lines within wetlands. As such, the project qualifies as an incidental public service project under 30233 (a)(4) of the Coastal Act.

However, if an unintended frac-out should occur during the HDD operation, resulting in the release of the bentonite drilling fluid to surface above, then fill in wetlands will have occurred. Although the project is an acceptable use as an incidental public service project, any such fill of wetlands or the waters of the lagoon with bentonite fluid will need to be cleaned-up, removed and the site restored because 30233 also requires

[1] These findings assume, without deciding, that drilling approximately 105 feet below wetlands constitutes dredging of wetlands.

mitigation measures be provided to minimize adverse environmental effects. SDG&E has developed a detailed Drill Fluid Release Plan which sets out mitigation and restoration measures should such a spill occur.

As noted above, a series of frac-outs were recorded during the horizontal directional drilling activities. These frac-outs occurred on September 15th, 18th, and November 5th, 2006. According to the applicant, the frac-outs that occurred were not anticipated, although they did know that such frac-outs could occur, and were not fully avoidable in any practical sense. All of the impacts resulting from the vertical fractures were photographed, and descriptive accounts of the incidents were taken. When the frac-out events continued to occur during the directional drilling, SDG&E and its construction contractor developed an action plan to respond to the specific environmental conditions and project goals faced in the unique situation. SDG&E conferred with each of the permitting agencies to verify the action plan's consistency. The action plan included increasing the depth of drilling from an anticipated maximum depth of 70' to an adjusted maximum depth of 105'; the plan also slightly realigned the path for directional drilling and incorporated a 24 hour/day drilling schedule. All of modifications were developed to minimize the likeliness of further vertical fractures. The modifications were adopted by the construction crews and no further frac-outs were recorded. The report documenting the exact efforts to avoid frac-outs is currently being finalized and will be submitted to the San Diego Brach upon completion; Special Condition #3 requires the applicant to submit any and all documentation related to these frac-out events and subsequent cleanup and mitigation. The applicant has since completed the drilling component of the application, therefore there will be no additional frac-outs associated with this development. The only potential impact to sensitive wetland vegetation identified by the applicant was the possible smothering of Eelgrass located within the submerged portion of the marsh.

Eelgrass typically is reduced in coverage in the winter months and surveys are generally performed during active growth periods (March through October), in order to correctly assess impacts. Currently these surveys are being conducted for the frac-out events that occurred in September and November of last year. If post-construction surveys indicate impacts to Eelgrass, a mitigation and monitoring program will be developed and implemented in accordance with the Southern California Eelgrass Mitigation Policy. Special Condition #2 requires the applicant to submit the surveys currently being conducted assessing the impacts from previous vertical fractures. This condition also requires the applicant to conduct all restoration work in substantial conformance with the Eelgrass Mitigation and Monitoring Plan submitted by the applicant on February 27, 2007.

In addition, because the project site lies in close proximity to sensitive habitat, the Commission imposes Special Condition #1. Special Condition #1 requires the applicant to perform a post construction survey of the subject site, and if any temporary wetland impacts have occurred, it requires restoration of these areas pursuant to an approved restoration plan that will be developed by the applicant, in consultation with the US Fish

& Wildlife Service. The restoration plan must be submitted for Executive Director approval and must incorporate specific performance standards, goals and objectives.

If permanent impacts to wetlands occur, Special Condition #1 requires the applicant to submit an amendment to the subject coastal development permit. Thus, using the mitigation measures proposed by the applicant, in conjunction with the proposed special conditions, all adverse impacts to coastal resources will be prevented or properly mitigated. The project, as conditioned, is therefore consistent with Section 30233 of the Coastal Act.

3. Water Quality/Marine Resources. Sections 30230, 30231, 30232, 30233 and 30240 of the Coastal Act apply to the proposal and state in part:

Section 30230

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 30232

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

Section 30231

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.

Section 30240

(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.

While the applicant did not anticipate any temporary or permanent impacts resulting from this project, its location adjacent to Sweetwater Marsh National Wildlife Refuge (SMNWR) necessitates stringent precautions. The SMNWR is a 316 acre salt marsh with coastal upland vegetation surrounded by urban development. It is fully tidal with circulation in the south bay described as poor. Water quality has been impaired by water entering from power plant cooling, damned tributaries and contaminated urban runoff. The site houses one federally listed endangered plant species: salt marsh birds' beak. There are also six sensitive bird species known to occur in the vicinity including Belding's savannah sparrow, Osprey, Peregrine falcon, Northern harrier, California least tern and the Light footed clapper rail. Eelgrass is also present within the waters of the marsh. Eelgrass provides habitat for the growth of ecologically important fish and invertebrates. Because of normally dense growth, seagrasses also provide small organisms, such as juvenile fish, a significant degree of protection from predators. Eelgrass leaves have a high rate of growth and although few organisms feed directly on the leaves, the major food chains are based on detritus derived from the leaves which may support food chains in adjacent waters. The project, as proposed, raises issues regarding impacts from vertical fractures/frac-outs on wetland vegetation and in water, construction impacts, and impacts from installation of the copper grid system.

Vertical Fractures / Frac-outs

Vertical fractures or frac-outs are fairly common during directional drilling operations and occur when drilling mud travels through a weak point in the geological formation that connects the drill hole to the surface. Geotechnical testing was conducted for the site prior to the construction and was considered appropriately during project design and engineering. The Commission's geologist has reviewed the geotechnical documents provided by the applicant and has concurred that drilling of this sort is a suitable activity for this location. Frac-outs can occur on dry land as well within an inundated wetland or water body. The applicant has proposed a series of mitigation and monitoring measures to minimize the impacts to marine resources or wetland vegetation should a vertical fracture occur. SDG&E has developed a Drilling Fluid Release Monitoring and Contingency Plan (ref. Exhibit #4) specific to this project that includes the following measures:

Spill contingency plan includes but are not limited to:

- All personnel will receive pre-construction training including education on environmental resources located in the area.
- An environmental monitor will be present as necessary to check for signs of surface returns.

- Drilling the pilot hole nearest to the shoreline will only be done during daylight hours, otherwise there will be a 24/7 schedule with lowest light illumination allowed for human safety, strategically placed and shielded directing away from the reserve.
- Contractors are required to keep respond equipment (BMPs) on site or at a readily available offsite location and include vacuum truck, sand bags, straw waddles, absorbent skimmer booms and pads etc.
- Contractors will be required to control drilling advance rate and fluid flow rate
- Drilling pressure, flow rate and mud loss will be continuously monitored
- A minimum distance of 50' will be maintained from the shoreline to the bore entry and exit pits.
- Surface returns in the water will be monitored twice daily.
- If a vertical fracture is reported cleanup actions will be developed in consultation with appropriate regulatory agencies.
- Surface returns on land will be immediately contained with hand placed barriers and collected using vacuum pumps etc. as practical.
- All discharges control, containment and cleanup measures will be documented.
- All agencies will be contacted and subsequent directions given will also be documented. The California Coastal Commission is among the agencies listed to contact.

As noted above, while frac-outs were not anticipated to occur, frac-out events were documented on September 15th, 18th, and November 5th, 2006. Bentonite plumes were documented in the Sweetwater Marsh waters for each of these events. Construction crews immediately commenced activities required by The Fluid Release Contingency Plan. This assured that any spill was immediately cleaned-up and the spill documented. Per Special Condition #2, if any impacts to Eelgrass are documented, the applicant will restore the site to its pre-spill condition and will implement necessary mitigation measures consistent with the Southern California Eelgrass Mitigation policy.

Construction Impacts

While no impacts are proposed by the applicant, various components of the proposed construction are not conducive to the protection of sensitive wildlife. As proposed, the applicant will conduct the upland portion of horizontal directional drilling 24 hours a day. A 24 hour cycle will require night lighting for the construction crews and will not provide noise relief for nesting birds and other wetlands animals. The applicant's proposed project is designed to minimize? these impacts. Exterior lighting within the project area adjacent to preserved habitat will be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable. If night lighting is anticipated in areas adjacent to the Refuge, these activities will be coordinated with the Refuge Manager.

The project site is located adjacent to a large multi–lane freeway. The noise created from construction activities was found to be insignificant when compared to the noise created by the freeway. However, while the EIR for the project concluded the increase in noise

level will not be significant, it is uncertain what level of impacts noise generated from the drilling will have on nearby nesting bird species. Loud or unfamiliar noises can lead to the abandonment of eggs and/or fledglings, necessitating additional mitigation measures. The drilling will be periodically overseen by a biologist; the applicant has proposed that if the biologist determines that the construction noise is impacting the protected wildlife, the project will be modified per the biologist's recommendations to further decrease construction noise impacts.

Conduit pull-in is the only component left to this project. Conduit pull-in does not require the kind of equipment and does not result in same levels of construction noise as that of drilling. Because the drilling component is completed for this project, the noise created by the remainder of the project's components does not necessitate further mitigation or special conditions.

The majority of construction, staging and installation areas for the project are not within the Coastal Commission's jurisdiction and while the majority of construction activities associated with this project are complete, access through sensitive vegetation is still possible. The components of the project that will require construction crews to access areas within Sweetwater Marsh, however, are subject to the Coastal Commission's jurisdiction, including any monitoring that takes place during drilling or conduit pull-in activities as well as the laying of the copper grid guidance system. Native vegetation could be trampled as a result of these activities. Within the existing SDG&E ROW the boundaries of plant populations designated as sensitive by USFWS and CDFG and other resource agencies will be clearly delineated with clearly visible flagging or fencing. The flagging and fencing will remain in place for the duration of construction. Flagged areas will be avoided to the extent practicable during construction and maintenance. Where these areas cannot be avoided, focused surveys for covered plant species will be performed. Condition #1 requires the applicant to conduct a post construction survey to address any wetland or upland vegetation impacts associated with the monitoring and/or pulling of the conduit. If impacts are surveyed, the applicant will be required to revegetate or amend the project depending on the extent of impacts.

Storage or placement of construction materials, debris, or waste in sensitive habitat would result in adverse impacts upon the marine environment that would reduce the biological productivity of coastal waters. For instance, if the Bentonite drilling fluid is not properly stored safely in a location isolated from sensitive habitat, a leak in the container or an accidental spill could release drilling fluid into sensitive habitat or coastal waters. In order to avoid adverse construction-related impacts upon marine resources, Special Condition #4 outlines construction-related requirements to provide for the safe storage of construction materials and the safe disposal of construction debris. This condition requires the applicant to remove any and all debris resulting from construction activities within 24 hours of completion of the project. In addition, all construction materials shall be covered and enclosed on all sides, and as far away from a storm drain inlet and receiving waters as possible.

In conclusion, because this is primarily a permit seeking after-the-fact approval of construction that has already taken place, very few conditions are applicable or necessary at this time to minimize impacts to sensitive resources. SDG&E has exhibited their dedication to minimizing or restoring all unavoidable impacts. Should surveys indicate that impacts to Eelgrass or wetland vegetation have occurred, SDG&E has developed, and has been conditioned by the Commission to adhere to, a detailed plan for restoration. Special Condition #1 requires the applicant to assess and potentially restore any impacts to wetland or upland vegetation caused by this project; and, Special Condition #2 requires that the applicant undertake an Eelgrass Mitigation and Monitoring Plan if the survey indicates impacts to Eelgrass; Special Condition #3 requires the applicant to submit all documentation of Eelgrass impacts to the San Diego Branch office, Special Condition #4 imposes construction best management practices to minimize water quality impacts from construction, and finally Special Condition #5 requires the applicant to comply with all conditions included in this permit. The project, as conditioned, maintains biological productivity of coastal waters and marine resources, minimizes adverse effects of any potential waste water discharges, protects against the spillage of hazardous substances and protects environmentally sensitive habitat areas. The project, as conditioned, is therefore consistent with the above-cited Chapter 3 policies of the Coastal Act.

5. Consistency with the California Environmental Quality Act (CEQA).

Section 13096 of the Commission's Code of Regulations requires Commission approval of Coastal Development Permits to be supported by a finding showing the permit, as conditioned, 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 feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The City of Chula Vista is the lead agency on this project for purposes of CEQA. It completed an EIR for the entire Otay Mesa Powerloop Agreement, including the activities specified in this permit. Three options were presented as alternatives to undergrounding the transmission lines below Sweetwater Marsh. These alternatives include undergrounding below the adjacent bike path, railroad ROW or Sweetwater Marsh avoidance. The first alternative (via the bike path) was eliminated due to lack of space. The second and third alternatives (railroad ROW and marsh avoidance) were eliminated due to increased adverse environmental effects in sensitive habitat areas and residential neighborhoods respectively. The EIR concluded that Horizontal Directional Drilling underneath Sweetwater Marsh, as proposed herein, is the least environmentally damaging alternative.

The Coastal Commission adopts additional mitigation measures to ensure that the proposed project is consistent with the Chapter 3 policies of the Coastal Act. Mitigation measures, including conditions addressing water quality and sensitive habitat monitoring and restoration will minimize any adverse environmental impacts. As conditioned, there are no feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the proposed project would

have on the environment. Therefore, the Commission finds that the proposed project, as conditioned, is the least environmentally damaging feasible alternative and is consistent with the requirements of the Coastal Act to conform to CEQA.

STANDARD CONDITIONS:

1. Notice of Receipt and Acknowledgment. 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 period of time. Application for extension of the permit must be made prior to the expiration date.

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

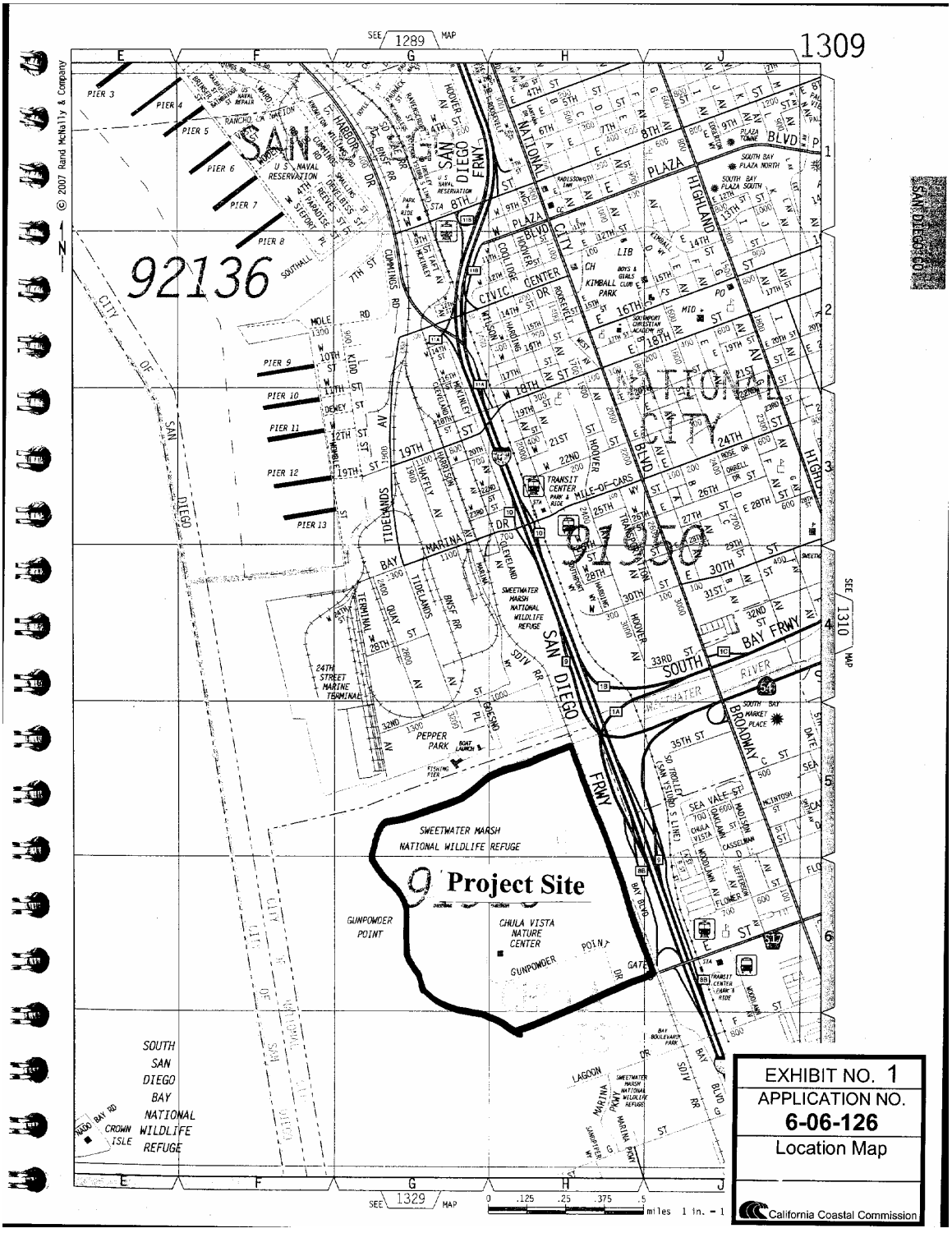
SEE 1289 MAP
1309
92136
91950
SAN DIEGO BAY
SWEETWATER MARSH NATIONAL WILDLIFE REFUGE
Project Site
GUNPOWDER POINT
CHULA VISTA NATURE CENTER
SOUTH SAN DIEGO BAY NATIONAL WILDLIFE REFUGE
CROWN ISLE
SEE 1329 MAP
SEE 1310 MAP
0 .125 .25 .375 .5 miles 1 in. = 1
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EXHIBIT NO. 1
APPLICATION NO.
6-06-126
Location Map
California Coastal Commission

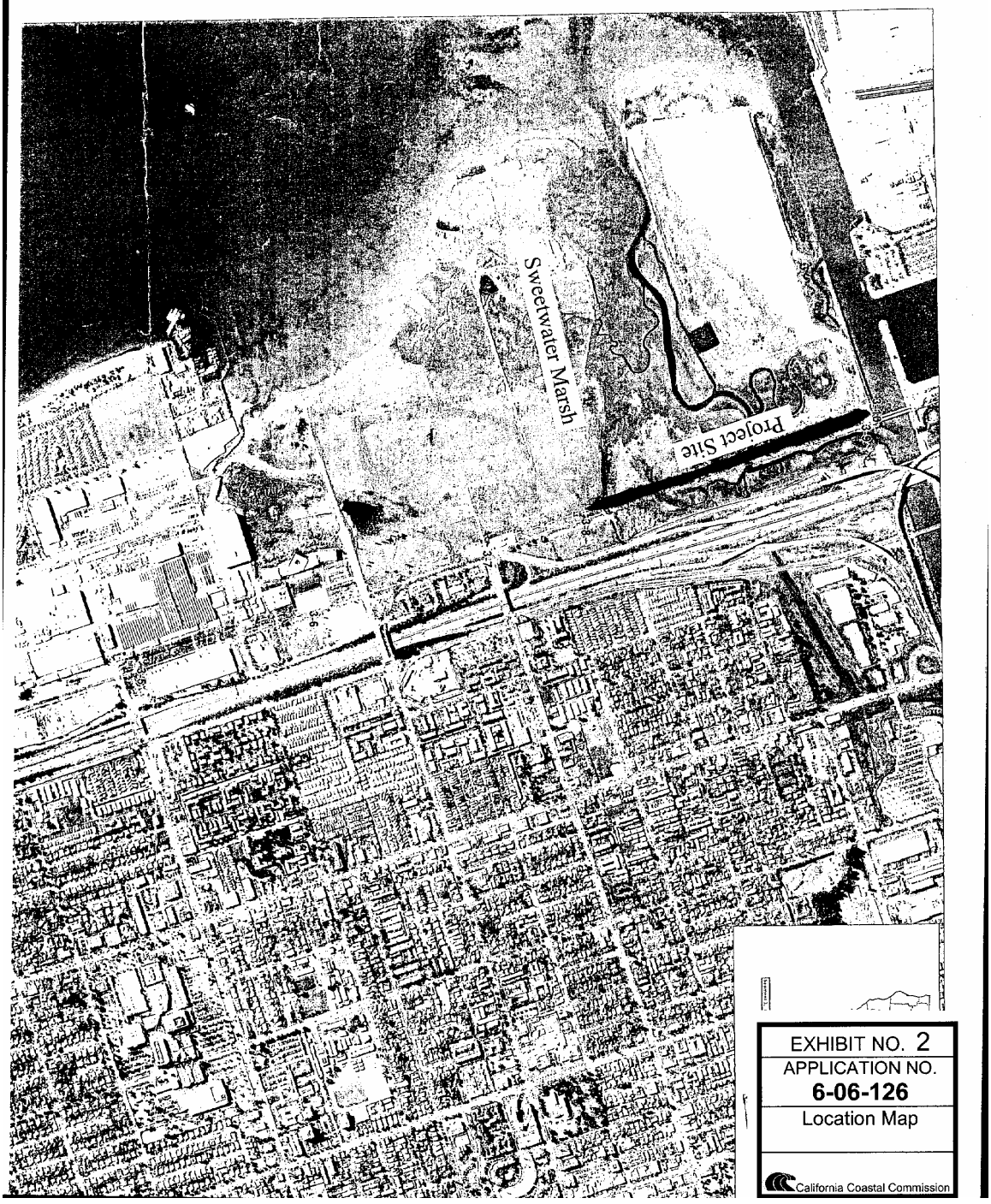
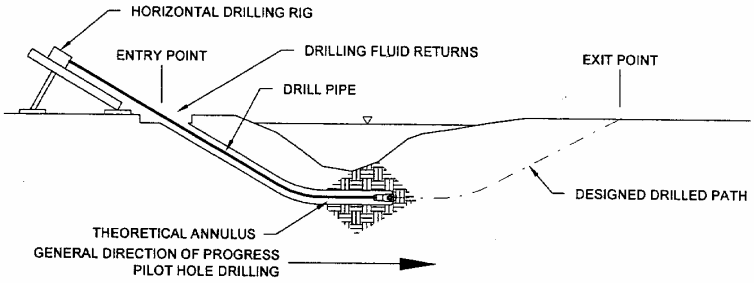


EXHIBIT NO. 2
APPLICATION NO.
6-06-126
Location Map
California Coastal Commission

STAGE 1, PILOT HOLE DIRECTIONAL DRILLING



STAGE 2, REAMING & PULLING BACK

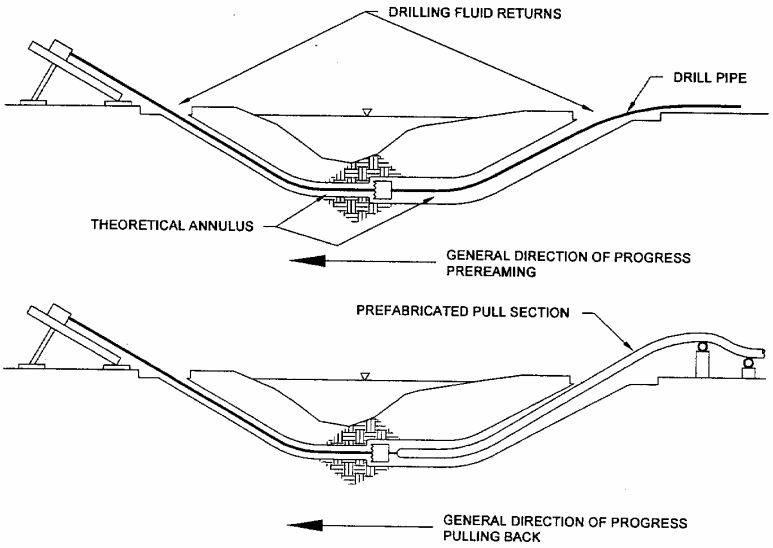


Figure 1
The HDD Process

EXHIBIT NO. 3
APPLICATION NO.
6-06-126
Horizontal Directional Drilling
California Coastal Commission

San Diego Gas and Electric

DRILLING FLUID RELEASE MONITORING & CONTINGENCY PLAN FOR HORIZONTAL DIRECTIONAL DRILLING

Otay Mesa Power Purchase Agreement Transmission Project

August 10, 2006

DRILLING FLUID RELEASE MONITORING & CONTINGENCY PLAN FOR HORIZONTAL DIRECTIONAL DRILLING

Otay Mesa Power Purchase Agreement Transmission Project

1.0 INTRODUCTION

Background

SDG&E construction of the Otay Mesa Power Purchase Agreement (OMPPA) Transmission Project is to provide for full dispatchability of Calpine Corporation's Otay Mesa Generation Project (currently under construction) and increase service reliability to customers and substations in the San Diego regional electric transmission system. As a public utility, SDG&E must comply with California Public Utilities Commission (CPUC) General Order 131-D (G.O. 131-D) before it can construct, modify, alter or add conductors on electric transmission facilities. In accordance with G.O. 131-D, SDG&E filed an application with the CPUC (Application A.04-03-008, March 8, 2004, amended November 18, 2004) for a Certificate of Public Convenience and Necessity (CPCN), which was granted on June 30, 2005.

Project Description

The OMPPA Transmission Project primarily consists of a new 230 kilovolt (kV) electric transmission line (circuit) that will connect the Otay Mesa Generation Project (OMGP), currently under construction near SDG&E's existing Miguel Substation, with SDG&E's existing Sycamore Canyon Substation, and a second 230 kV electric transmission line that will connect the OMGP to SDG&E's existing Old Town Substation. The segment from South Bay Power Plant to the Sweetwater River along San Diego Bay will use standard open trench construction techniques to install the transmission line facilities underground. These facilities will cross three drainages (Telegraph Canyon Creek, J Street Drainage and E Street Drainage) and the Sweetwater Marsh (see Figure 1).

To minimize the potential for impacts to the drainages and Sweetwater Marsh, SDG&E will use jack & bore or horizontal directional drill (HDD) techniques to cross Telegraph Canyon Creek, J Street Drainage, and E Street Drainage, and the HDD technique to cross the Sweetwater Marsh.

Water Body Crossings

This Plan is specifically written for the planned crossing of the Sweetwater Marsh using the HDD technique. However, it is also applicable to any of the drainage crossings where the HDD technique is used.

The HDD drill rig bore entry pit and ancillary equipment will be set up on the north side of the Sweetwater Marsh. Ancillary equipment may include a control cab, a power unit, a crane, a backhoe, drilling fluid pumps and a mud storage system and containers. In addition to the drilling equipment, storage and tool trailers, pallets of dry bentonite and drill pipe may be stored on-site.

The south side of the Sweetwater Marsh is the receiving (exit) pit location for the HDD activities. A drilling fluid collection pit approximately 10 ft. long by 10 ft. wide by 5 ft. deep will be excavated to collect excess drilling fluid. Drilling fluid collection tanks may also be located within the construction area.

The HDPE conduit pipe laydown and staging area for pull back will be located just south of the exit pit on the south side of the Sweetwater Marsh, within SDG&E's right-of-way. Two or more backhoe loaders and/or side boom tractors may be used here to handle the pipe sections. The HDPE conduit pipe will be delivered in 50-ft. lengths, off-loaded and set on blocks or dunnage. The pipe sections will be fusion welded together into lengths that are as long as practicable to minimize the need to stop the pullback operation in order to fuse on the next section of pipe.

Directional drilling was selected as the preferred construction method – rather than the "cut and cover method" – as an environmentally sensitive method to install the necessary conduits under the marsh. Although directional drilling will eliminate the disturbance to the marsh that would result from trenching activities, there is potential for waterway disturbance through inadvertent surface returns of drilling fluids. The HDD activities have been designed to avoid and otherwise minimize the potential for impacts to sensitive marsh habitat and wildlife.

Monitoring and Contingency Plan

This Monitoring and Contingency Plan (Plan) establishes monitoring and response criteria that will minimize the potential for environmental effects from the HDD operation and specifically:

- Minimize the possibility of inadvertent surface returns of drilling fluids (commonly referred to as "frac-out") from the underground borehole into the marsh.
- Minimize the possibility of drilling fluid seepage from the entry and exit sites (i.e., bore and receiving pits) of the directional drills.
- Minimize or eliminate adverse effects if inadvertent surface returns should occur.

2.0 HORIZONTAL DIRECTIONAL DRILLING PROCESS

The directional drilling will be completed in three primary phases consisting of pilot hole drilling, reaming, and pull back. The pilot hole drilling process involves equipping the leading edge of the drill string with a drill bit and advancing the bit along the designed drill path from the entry point on the north side of the marsh to the exit point on the south side of the marsh. Once the pilot hole has been completed, the drill bit will be replaced with a specialized reamer. The drilling rig then rotates the reaming assembly back through the pilot hole to enlarge the hole. One or more reaming passes through the borehole may be made to achieve the required borehole size. When the required borehole size has been achieved, the HDPE conduits will be attached to the drill pipe and pulled back through the borehole by the drilling rig.

The directional drilling process utilizes a drilling fluid comprised primarily of water and high yield bentonite clay. Bentonite clay is a naturally occurring, non-hazardous clay material. High yield bentonite products contain trace amounts of non-toxic polymers that reduce the amount of dry bentonite required to achieve drilling fluid of a given viscosity. Additional drilling fluid products may be added to the bentonite mixture to remedy specific problems and are dependent on the geological conditions at the drilling site. Geologic conditions at the site have been investigated in detail and found to consist of sedimentary deposits that are conducive to this type of operation and for which the use of clay-based drilling fluid is appropriate.

The primary functions of the drilling fluid are to carry cuttings (drilled spoil) out of the hole, seal the formation, stabilize the borehole, and to act as a lubricant for the downhole tools and product pipe.

The drilling fluid is pumped down the inside of the drill pipe and exits through the bit or reamer. The fluid returns to the bore site entry or exit points through the annular space between the outside of the drill pipe and the surrounding soil. The fluid returning to the entry or exit points is called "returns." At the beginning of the pilot hole process all of the drilling fluid returns to the entry point. As the bore progresses, some of the returns may be absorbed by the earth formation and thus do not return to the surface. In HDD construction, it is not uncommon to encounter a complete loss of returns at various stages of pilot hole and reaming operations. Such losses generally occur because of the porosity of the substrate combined with gravity and friction overtaking the ability of the fluid to return to the surface. It is important to understand that loss of returns is a common occurrence during HDD and does not necessarily indicate that the drilling fluid is being inadvertently released to the surface or impacting the marsh environment. However, it is possible that some drilling fluids may inadvertently return to the surface during the drilling operation. Any fluid that is released will likely be considerably diluted relative to the original mixture as the overlying sand and sediments will act as a filter retaining a portion of the insoluble clay within the formation, whereas the water that makes up the fluid will diffuse outward.

A complete and sudden loss or reduction of returns is a signal to the driller and monitoring personnel that they should watch closely for a possible surface release. A key to controlling and limiting surface releases is early detection and quick response by the Contractor. This Plan identifies the activities to be monitored and appropriate response actions to be taken to ensure that any fluid release is minimized. The Plan outlines a process of monitoring the drilling operations in

order to identify a loss-of-return situation and to determine if there is a surface release. Specific measures to be taken to reduce the amount and likelihood of surfacing drilling fluid, and other actions to be taken, are included.

3.0 HDD CONTRACTOR

SDG&E's horizontal directional drilling (HDD) contractor specializes in this type of guided drilling work for the horizontal directional construction. A primary factor in the evaluation and selection of the HDD contractor chosen is his expertise and experience with this type of work.

The HDD Contractor will be required to incorporate the measures outlined in this Plan and in the Contract documents into their Work Plan.

The HDD Contractor will be required to develop and submit drilling plans and procedures to SDG&E that prevent/minimize the potential for inadvertent surface returns.

4.0 GENERAL PREVENTIVE MEASURES

Training

Prior to the commencement of construction, the Contractor's personnel will receive pre-construction training to discuss the preventative measures and response measures identified in this Plan and the contract documents. The training session will ensure that Contractor personnel recognize the authority of SDG&E's Environmental Monitors, the appropriate government agencies and of the SDG&E Site Representative to stop drilling. The following topics will be covered:

- The details of this Plan;
- The need for environmental protection;
- Environmental resources located at or near the site;
- Specific permitting conditions and requirements;
- The need to monitor the HDD operation;
- Lines of communication;
- Lines of authority and responsibility;
- The information the Contractor will need to provide to the HDD monitor and SDG&E Site Representative;
- Contact names and phone numbers of the appropriate individuals and agencies; and
- Events that need to be reported and to whom.

SDG&E Oversight

SDG&E will have a representative on-site during all drilling activities and an SDG&E Environmental Monitor will also be present as necessary to monitor the directional drilling activities

at the project site, check for signs of surface returns and ensure compliance with the enclosed measures.

Utility Mark-Out

Prior to excavating the bore pits and starting the drilling operations, appropriate agencies will be contacted (or a utility mark-out service used) to locate their underground facilities (e.g., water, sewer, etc.) to ensure that they will not interfere with the proposed drilling operation.

Drilling Hours

ARB plans to conduct drilling operations 24 hours per day seven days per week, as needed. Any exterior lighting provided to facilitate drilling activities and effective monitoring for spills or other unforeseen problems will be of the lowest illumination allowed for human safety, selectively placed, shielded, and directed away from preserved habitat to the maximum extent practicable yet allowing for rapid emergency response. Drilling of the pilot hole in the vicinity of the shoreline, where possibility of an inadvertent surface return is highest, will be limited to daylight hours.

Response Personnel

Cleanup personnel will be the contractor's drill crew. In the event of an inadvertent surface return, the Superintendent will stop the driller from pumping and notify the appropriate contact people and contain the release.

The two drill crews are as follows:

Title	1st Crew	2nd Crew
Superintendent	Ronald Rhodes	Monte Jones
Driller	Shane Smith	Bradley Reese
Mud System Operator	Carlos Iniguez	Art Marino
Pipeside Operator	Wade Harrell	Wayne Singley
Pipeside Operator	Ronnie Jones	Tyler Rhodes
Wireline Connections	Alan Gantz	
Laborer/Operator		Brian Metzger

Response Equipment

The contractor will be required to maintain necessary emergency response equipment and materials on-site or at a readily available offsite location. These shall include the following:

- Vacuum truck;
- 1-8,000 lb extendable boom forklift;
- Splash board; three layers of heavy weight plastic sheeting;
- Portable trash pumps;

- 2-500 bbl frac tanks (one on each side of the marsh);
- 2-Rubber tire hoes;
- Sand bags, filled with clean sand, a minimum of 100 per each side of the crossing;
- Hay bales (certified weed free);
- Rice straw waddles (certified weed free);
- 4-100 foot rolls of silt fencing;
- A minimum of 100 foot of pump hose;
- 1-800 gallon vacuum trailer on-site
- Absorbent skimmer booms;
- 2-Bundles of absorbent pads to be used with plastic sheeting for placement beneath motorized equipment;
- Plastic sheeting;
- 2-Wide, heavy duty push brooms;
- 3-Flat blade shovels;
- 55-gallon drums; and
- 5-five gallon hard plastic pails.

This response plan will be in place to deal with potential inadvertent surface returns of drilling fluid. All surface returns occurring on land will be contained before reaching the marsh. Afterwards, appropriate cleanup and removal of the drilling fluid will be performed. Surface returns occurring in the marsh will be immediately reported to the SDG&E Environmental Monitor who will direct the appropriate measures to be taken by the Contractor.

5.0 DRILLING MEASURES

The HDD Contractor's Installation Plan will include procedures to prevent and minimize the potential for inadvertent surface returns including controlling the drill advance rate and the fluid flow rate. This Plan will be incorporated into the contractor's Installation Plan. Drilling pressure, flow rate and mud loss shall be continuously monitored. In the event that annular circulation of the drilling fluid is lost, the Contractor will take steps to restore circulation such as "sizing" the hole, reducing the flow rate, modifying the drilling fluid properties and pumping a high viscosity bentonite plug.

The following measures will be utilized to minimize the possibility of an inadvertent surface return or release of fluid:

- The drilled path alignment has been designed to maintain adequate cover to the bottom of the marsh.

- A minimum distance of 50-feet will be maintained from the shoreline to the bore entry and exit pits (this minimum distance may be reduced for HDD operations at the other drainage crossings due to space limitations).

- To minimize the amount of drilling fluid needed and the amount necessary for disposal upon completion, the Contractor will be required to maximize recirculation of drilling fluid returns and to accurately and continuously measure the drilling fluid flow rate and pressure. The Contractor will be required to provide solids control and fluid cleaning equipment of a configuration and capacity that can process surface returns and produce drilling fluid suitable for reuse.

- Fluid returning to the surface around the drill pipe will be directed to flow into a drilling fluid containment pit. A pump will be placed in the pit to transfer drilling fluid returns to the fluid cleaning system. The entrance and exit containment pits will be completely surrounded by hay bales, sand bags and/or fiber rolls. No drilling fluids will be allowed to run out of the containment pits. A minimum freeboard of two feet will be maintained at all times within the entrance and exit mud pits.

- The drill advance rate will be controlled to minimize the potential for inadvertent surface returns.

6.0 MONITORING

Marsh Monitoring

Shallow water in the marsh will be monitored by visual observation at least twice a day during drilling operations.

HDD Monitoring

The drill penetration rate will be monitored and maintained at a level that minimizes excessive pressure on the geologic formation.

Drilling fluid return volumes will be monitored for significant changes that may indicate a loss of drilling fluids outside the drilling annulus. If a loss or decrease of drilling fluid returns should occur, monitoring efforts will concentrate on determining if an inadvertent surface return has occurred (note that a loss of circulation does not necessarily indicate a surface return).

The perimeter of the drilling fluid containment pits and all HDD equipment will be routinely monitored for leaks.

The level of drilling fluid in the containment pits will be monitored and any excess material will be promptly removed to ensure the drilling fluid is adequately contained by the containment berms.

Contractor personnel will be available during the periods of the day in which active drilling construction is occurring to respond to sudden drilling fluid pressure loss. The location of any bentonite detection will be described and photographed.

Tidal action and precipitation is expected to disperse, over time, any released fluids that may occur in this area.

A logbook of drilling conditions and any monitoring activities will be kept throughout the duration of HDD construction. This logbook will be made available to the Regional Water Quality Control Board after construction to discuss any cleanup measures that may be required.

7.0 CONTRACTOR REQUIREMENTS

Contractor for this project shall incorporate the following list of measures:

- An annulus of 36-42 inches has been chosen to accommodate the product pipe installation;
- Contractor to review the proposed drill trajectory, including entry and exit angles, and depth, and recommend revisions to minimize potential for inadvertent surface returns and to minimize fluid communication between alignments;
- Contractor to use drill cutting devices that will lower the pressure ahead of the drill string to reduce the potential for mud fracture occurring on the exit side;
- Contractor to notify SDG&E immediately if a sudden loss of drilling fluid circulation occurs;
- If a sudden loss of drilling fluid circulation occurs, Contractor to determine the location of the drilling head and provide coordinates to the monitor to detect the location(s) of fluid loss; and
- Contractor will keep copies of records required by this Plan with the drilling superintendent and shall strictly adhere to this Plan.

8.0 DRILLING FLUID DISCHARGES

Drilling fluid exposure to the marsh can be caused either by an inadvertent surface return within the marsh or by drilling fluids entering the waterway from the shore. The following procedures will be immediately employed in the event of any discharge:

- Notify appropriate parties (per Section 10.0 of this Plan);
- Evaluate and control discharge. Stop the source of the release as quickly as possible;
- Contain the drilling fluid with the emergency response materials maintained on-site;
- Promptly clean up the drilling fluid and recycle it or haul it off-site for disposal; and
- Document any occurrence.

Notification

In the event of loss of circulation and/or the inadvertent discharge of drilling fluid to the surface within the marsh, the Contractor will immediately notify the SDG&E Environmental Monitor. The

SDG&E Environmental Monitor and Site Representative will notify all appropriate authorities including the San Diego RWQCB, and the USACOE.

Evaluation and Control

The Contractor will attempt to restore circulation of drilling fluids by methods such as "sizing" the hole, reducing the drilling fluid flow rate, or modifying the drilling fluid properties.

Generally, a highly viscous drilling fluid and minimum operating pressures are used to prevent the loss or undesirable escape of drilling fluid. Most fractures occur during pilot hole drilling when fluid pressures are high and the outlet flow paths are small. If inadvertent returns cannot be remedied using the procedures presented in this Plan, the on-site mud engineer will be consulted for recommendations on changes to be made to the drilling fluid properties.

In general, drilling will not be stopped due to circulation loss or inadvertent returns unless the returns pose a threat to public health and safety or unless directed by SDG&E or the governing authorities.

Surface returns in waterbodies will be evaluated to determine if additional measures are warranted.

- Minor surface returns will be monitored. If they disperse and/or do not appear to have likelihood to cause significant adverse environmental effects, no cleanup actions will be taken, especially actions that would adversely affect the waterbody itself or shallow substrates.

- Cleanup actions may be desirable, though, and such actions will be determined and implemented expeditiously in consultation with appropriate regulatory agencies.

Containment

Surface returns on land will be immediately contained with hand placed barriers (i.e. hay bales, fiber rolls, gravel or sand bags, silt fences, etc.) and collected using vacuum pumps, as practical. If the amount of the surface return exceeds that which can readily be contained and collected, then drilling operations will be suspended until the surface return volumes can be brought under control. At no time will excess or residual materials be washed down to surface waters or storm drains.

Cleanup

All land based discharged materials will be collected and transferred to the mud cleaning system for reuse or to collection tanks for disposal.

If surface returns occur in accessible areas within the marsh, the SDG&E Environmental Monitor will determine, in consultation with the appropriate regulatory agencies, the necessary cleanup actions. In some situations, allowing the dispersal and precipitation of the muds will be less impactive than any cleanup measures.

Documentation

All discharges and loss of circulation will be recorded by the driller and the SDG&E Site Representative. Control, containment and cleanup measures taken will also be recorded. The SDG&E Environmental Monitor will document all agencies contacted and directions given.

9.0 DISPOSAL OF DRILLING FLUIDS AND CUTTINGS

The Contractor will be required to dispose of all drilling fluids and cuttings at licensed disposal sites approved by SDG&E.

SDG&E has approved the use of the Philadelphia Mine Recycling for the disposal of "wet" drilling fluid and cuttings. Contact information is as follows:

Philadelphia Mine Recycling
12000 Philadelphia Street
Mira Loma, CA 91752
(909) 793-3416

Disposal of "dry" drill cuttings will be at a local municipal landfill if the cuttings meet the applicable disposal standards, including the moisture content standard. If the cuttings are too wet for disposal at a local municipal landfill then the Contractor will be required to dispose of the cuttings at the Philadelphia Mine Recycling or other wet disposal site approved by SDG&E.

Disposal of all materials (drilling fluid and cuttings) will require analysis and approval prior to transport. SDG&E's Environmental Analysis Laboratory will sample and provide analysis of materials for disposal.

10.0 SDG&E AND AGENCY CALL DOWN LIST

In the event of sudden fluid pressure loss that would indicate the migration of fluids outside the drill path, the Contract Administrator will be notified. If circulation cannot be regained, the response actions will be implemented.

Loss of circulation:

- Contractor Project Manager, Tim Burks (Cellular 619-726-0481)
- SDG&E Contract Administration, Richard Leyva (Cellular 619-921-7601)

Loss of circulation that cannot be regained:

- SDG&E Project Manager, Alan Colton (Cellular 619-778-2529)
- SDG&E Transmission Engineering, Charles Eck (Cellular 619-921-5551)

Loss of circulation and indication of mud release into the Marsh:

- SDG&E Environmental Monitor, Kirstie Reynolds (TRC/Essex) (Cellular 619-742-0529)
- SDG&E Environmental Compliance Manager, Shannon Keithley (Cellular 619-733-0440)
- SDG&E Environmental Services, Fred Jacobsen (Cellular 619-987-2473)
- SDG&E SWPPP Monitor, Jason Moon (TRC/Essex) (Cellular 858-967-7671)
- ARB SWPPP Monitor, Jason Mooney (Cellular 619-778-1777)

SDG&E to call the following:

- Regional Water Quality Control Board, Mike Porter (Office 858-467-2726)
- US Army Corps of Engineers, Robert Smith (Office 858-674-6784)
- CPUC Project Monitor, Armen Keochekian (Cellular 760-632-0164)
- USFWS – Sweetwater Marsh NWR, Brian Collins (Cellular 619-778-2003)
- CDFG – Lake and Streambed Alteration Program, Kelly Fisher (Office 858-467-4207)