CCGS LLC
PO Box 1690
Danville, CA 94526

March 25, 2011

Mr. Craig Hoffman, CPM
(09-AFC-4C)
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

SUBJECT: Oakley Generating Station (09-AFC-4C)
WASTE-2 Soil Management Plan

Dear Mr. Hoffman:

Please find attached the draft Soil Management Plan for Staff review, in accordance with Condition of Certification WASTE-2.

Contra Costa Generating Station LLC (CCGS LLC) acknowledges that OGS has not yet been certified by the California Energy Commission (CEC). Submittal of this compliance information is at CCGS LLC's risk and in no way implies or predisposes project certification by the CEC.

If you have any questions regarding this submittal, please do not hesitate to contact me at (916) 799-9463 or Doug Davy at (916) 286-0278.

Sincerely,

Greg Lamberg
CCGS LLC
Senior Vice President

Attachment: Soil Management Plan for OGS (09-AFC-4C)

cc: Jim McLucas, CCGS LLC
Doug Davy, CH2M HILL

Soil Management Plan

For the

Oakley Generating Station

(09-AFC-4C)

Condition of Certification WASTE-2

Prepared by

CCGS LLC

March 2011

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1.0 Introduction

1.1 Project Description

The OGS (formerly the Contra Costa Generating Station) is a combined-cycle, natural gas-fired power plant owned by Contra Costa Generating Station LLC (CCGS LLC). The project will consist of two natural gas-fired combustion turbines with heat recovery steam generators, a steam turbine, air-cooled condenser, and ancillary equipment.

Power from the facility will be transmitted 2.4 miles to PG&E's Contra Costa Substation on a new 230-kV single-circuit transmission line. Construction of this line will follow an existing PG&E transmission line ROW and will consist of replacing existing steel-lattice towers with tubular steel poles and reconductoring the line. It will also be necessary to construct a new sanitary sewer force main from the project tie-in location on Bridgehead Road to the gravity main located in Main Street. Construction of this line would be within the Bridgehead Road and Main Street ROWs. The proposed construction worker parking and laydown area for the project's on-site construction activities will be located east of the proposed project parcel, and soil from the project will be temporarily stockpiled in three areas north of the project parcel.

The project site is located at the intersection of Bridgehead Road and Wilbur Avenue, approximately 3,000 feet south of the San Joaquin River in the City of Oakley, Contra Costa County. The project site is bounded on the west by the PG&E Antioch Terminal, a large natural gas transmission hub; on the north by formerly industrial property belonging to DuPont that has been abandoned; on the east by DuPont's titanium dioxide disposal area; and to the south by a vineyard and the Burlington Northern railroad.

1.2 Project Schedule

Construction of the generating facility, from site preparation and grading to commercial operation, is expected to take place from the second quarter of 2011 to the third quarter of 2013, lasting a total of 27 months.

This Soils Management Plan (SMP) for the Oakley Generating Station (OGS) project in Contra Costa County is being submitted to comply with Condition of Certification, WASTE-2 as set forth in the California Energy Commission's (CEC's) Final Staff Assessment (FSA) for the OGS project dated March 1, 2011. It is anticipated that the CEC will approve the project and issue a license for the construction and operation of the OGS in May of 2011.

The scope of this SMP is limited to activities involving the excavation, characterization, management, reuse and/or disposal of soils at the OGS site. All other onsite activities that could generate wastes will be managed in accordance with plans prepared by OGS and approved by the CEC Compliance Project Manager (CPM) as required by the CEC's Decision.

This plan covers the following as required by COC WASTE-2:

WASTE-2 Prior to initiating any earthwork on the project site, the project owner shall prepare and submit to the CPM for approval, a Soils Management Plan (SMP). The SMP should include but is not limited to the following:

- Land use history, including description and locations of known contamination;
- An earthwork schedule;
- The project owner shall describe methods which will be used to properly handle and/or dispose of soil which may be classified as hazardous or contain contaminants at levels of potential concern, including the identification of legal discharge areas;
- The SMP shall discuss, as necessary, the reuse of soil on site in accordance with applicable criteria to protect construction workers or future workers on site;
- A SMP summary report, which includes all analytical data and other findings, must be submitted once the earthwork has been completed.

Verification: At least 60 days prior to any earthwork, including those earthwork activities associated with the site mobilization, ground disturbance, or grading as defined in the general conditions of certification the project owner shall submit the Soils Management Plan to the CPM for approval.

2.0 Background

This section provides a brief summary of land use history, nature and extent of known contamination, previous investigation and remedial activities at the site, and the extent of potentially impacted areas at OGS. Also provided in this section is a brief summary of the institutional controls applicable to the OGS site. Prior soil management activities and analysis have been extensive, and there are no known areas of the site in need of remediation.

2.1 Site Land Use History

E.I. du Pont de Nemours and Company (DuPont) operated a chemical manufacturing facility at 6000 Bridgehead Road, Antioch, California, that was referred to as the Antioch Plant. Operations at the Antioch Plant began in 1956. Production of fuel-additive anti-knock compounds (AKCs) and chlorofluorocarbons (CFCs) began in 1956, while titanium dioxide (TiO_2) production was added in 1963. Production of all three product lines has been eliminated, beginning with AKC manufacturing in 1981, CFC manufacturing in 1996, and TiO_2 manufacturing in July 1998, followed by a general shutdown of all TiO_2 and CFC blending operations on March 31, 1999. The facility is now referred to as the DuPont Oakley Site and is undergoing investigation and remediation activity under the Resource Conservation and Recovery Act (RCRA), with the eventual goal of redeveloping the site as a business park, including commercial office and retail uses. The property was subdivided into four areas and a separate wetlands area for evaluation of soil, soil gas, and sediment contamination. The Western and Eastern Development Areas[1] consist of relatively uncontaminated areas of the site, such as current and former vineyards, the administrative building, and parking lots. The California Department of Toxic Substances Control (DTSC) released the Western Development Area (WDA) and Eastern Development Area from further regulatory oversight on May 1, 2006.

Remedial field investigations have included the collection of more than 1,200 soil samples and the monitoring of nearly 200 groundwater wells at the site. Constituents of concern (COCs) in soils include primarily: arsenic, lead, organolead, and tetrachloroethene (PCE). COCs detected in groundwater at concentrations exceeding applicable state or federal water quality objectives primarily include arsenic; lead; organolead; carbon tetrachloride (CT) and daughter products; tetrachloroethene (TCE) and daughter products; 1,2 dichloroethane (1,2-DCA); 1,2-dibromoethane (1,2-DBA); trichlorofluoromethane (Freon 11); and 1,1,2-trichlorotrifluoroethane (Freon 113). Regular groundwater monitoring and performance monitoring of a subsurface permeable reactive barrier, installed in 2005, continue at the site. Groundwater constituents have been detected at locations on the neighboring Lauritzen Yacht Harbor property. DuPont continues to collect wet and dry season surface water samples from the San Joaquin River, Lauritzen Yacht Harbor, and

[1] The Western Development Area includes the proposed 21.95-acre CCGS site.

Little Break. DuPont has also collected sediment samples from the San Joaquin River and the Central Slough and Channel.

Phase I and Phase II ESAs were conducted by DuPont for the 44.4 acres of the DuPont property known as the WDA that includes the proposed 21.95-acre CCGS site. The ESAs were conducted in accordance with methods prescribed by the American Society for Testing and Materials document entitled “Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process (Designation: E 1527-93, May 1993).”

DuPont performed an investigation of non-manufacturing areas along the western and southwestern edges of the DuPont property, with the intent of demonstrating that these areas had not been impacted by former manufacturing operations conducted elsewhere at the site. The results of these investigations indicate that no further corrective action obligations remain with respect to the 44.4 acres identified as the WDA (DuPont, 2004).

Prior to construction of the manufacturing facilities, the property was used for agriculture. The WDA parcel of the Oakley Site has been cultivated for weed and fire control and has been used for open space, administrative offices, vineyards, and parking areas. A 0.62-acre wetlands mitigation site is also present in the southwestern corner of the WDA. No manufacturing or waste management facilities were ever located within the boundaries of the WDA (DuPont, 2004).

The Phase I ESA report concluded that an evaluation of historical land uses in the WDA parcel indicated that soil contamination was not anticipated (DuPont, 2004). The electrical substation and former aboveground storage tank (AST) on the property were identified as areas of potential concern. Additionally, the former manufacturing area is adjacent to the WDA parcel. Because of its proximity, it is possible that constituents related to the manufacturing area could have been present in the soil in the WDA parcel. Given these factors, as well as the potential for redevelopment of the WDA, DuPont determined that a Phase II investigation should be performed to establish baseline conditions in the area (DuPont, 2004).

The purpose of the Phase II ESA was to determine whether manufacturing-related constituents resulting from nearby onsite operations were present in the soil in the WDA parcel, to determine whether certain areas of potential concern might have evidence of prior releases to soil, and also to determine whether the WDA would require further evaluation prior to redevelopment (DuPont, 2004). In addition to sampling locations selected for their proximity to the areas of potential concern, the entire remaining area of the WDA was sampled using a randomized parcel-wide sampling grid. The WDA was evaluated for the presence of the primary site-related constituents identified during previous investigations completed at the DuPont manufacturing facility. These constituents include volatile organic compounds (VOCs) and inorganic constituents. These data were evaluated by comparing the results to residential risk-based screening concentrations (RBSCs).

The Phase II ESA report concluded that all of the soil detections were below their respective residential RBSCs, with the exception of arsenic, which appears to be present at background concentrations in this area (DuPont, 2004). Based on the results of the soil samples, the WDA parcel required no further investigation prior to redevelopment.

Although groundwater contamination is present to the east of the WDA, groundwater investigations and the site conceptual model are in agreement with respect to the low potential for further plume migration toward the west (DuPont, 2004). The report concluded that there is a low likelihood of cross-gradient migration of contaminated groundwater from the adjacent manufacturing areas located to the east of the WDA (DuPont, 2004). In 2004, DuPont installed two sentry wells in the surficial and upper aquifers to monitor water quality along the proposed eastern boundary of the WDA. Additionally, DuPont installed two lower aquifer sentry wells in the same location. Together, these four wells are monitored to verify that groundwater plume constituent concentrations remain below site-specific water quality objectives (WQOs) (DuPont, 2004).

According to the Phase I and Phase II ESAs and considering the future intended use of the project site for industrial purposes, potential human health risks are likely to be minimal. Based on these findings, DTSC released the WDA from further regulatory oversight on May 1, 2006. The proposed CCGS property parcel requires no further investigation prior to redevelopment. Copies of the Final Phase I and Phase II ESAs are included in Appendix 5.14A of the OGS AFC.

2.2 Institutional Controls

The CEC retains sole jurisdiction for licensing and compliance of power plants that exceed 50 MW of capacity (as is the case with OGS). The CEC CPM will be responsible for the final approval and implementation of the SMP.

Other institutional controls that currently apply to this SMP include those found in California Code of Regulations (CCR), Title 22, Division 4.5. These regulations detail requirements for management of hazardous and potentially hazardous wastes including requirements applicable to the generation, storage, transport, and treatment or disposal of wastes.

Construction activities will be performed in accordance with the requirements outlined in the CEC's license and conditions of certification, including CBO approval of grading and drainage plans pertaining to excavation and grading operations. The conditions of certification include requirements for permitting, hazard management, erosion control, and inspections for excavation and grading activities. The onsite inspections shall be carried out by the CBO.

To the extent necessary, the SMP shall be updated to reflect changes in laws, regulations or site conditions.

The OGS license, which is anticipated to be issued by the CEC in mid-May, contains requirements for certain notifications in the event of a transfer of the OGS site to another entity as well as requirements for ultimate closure of the site.

3.0 Roles and Responsibilities

This section addresses the roles and responsibilities for the management, implementation, and oversight of this SMP. Table 1 lists major project milestones.

Table 1. Project Schedule Major Milestones

Activity	Date
Mobilization	May 25, 2011
Delineate and mark the boundaries of the construction zone	Prior to construction
Implement perimeter erosion and sediment controls; protect interior and down gradient inlets, waterways, and sensitive areas	Prior to construction
Stabilize construction entrance/exit and roadway (BMP TC-1 and BMP TC-2)	Prior to construction
Establish parking and staging areas for vehicle and equipment storage, maintenance, and fueling in accordance with BMPs NS-8, NS-9, and NS-10	Prior to construction
Establish laydown and parking area(s) for materials storage/staging in accordance with BMPs WM-1 through WM-6	Prior to construction
Establish concrete washout area in accordance with BMPs WM-8, NS-12, and NS-13	Prior to construction
Completion of construction	3rd quarter 2013

3.1 Owner

The OGS compliance manager will be responsible for ensuring that all soil wastes generated as part of construction activities at the project site comply with this SMP and applicable laws, ordinances, regulations and standards. OGS will be considered the generator of excavated soil for construction projects related to improvements or modifications to the existing facilities and related easements or right-of-ways associated with the OGS. As the generator, OGS will be responsible for the management of soil materials generated from site-related construction projects including the characterization, accumulation, and ultimate disposition of the material. This includes the determination of soils as hazardous or nonhazardous waste, monitoring of accumulation times and limits, maintaining records and documents in accordance with applicable federal and state recordkeeping requirements, and submittal of reports where required.

The OGS compliance manager will provide oversight of the construction contractor during the implementation of the procedures outlined in this SMP and will ensure that all required documentation is prepared and submitted according to specified schedules. The OGS compliance manager will also coordinate reviews of the required plans and reports by the CEC CPM. .

3.2 Construction Contractor

On a project-specific basis, the construction contractor will be responsible for proper handling of excavated soil materials in compliance with the procedures outlined in this SMP and all applicable federal, state, and local laws and regulations.

The construction contractor will also be responsible for preparing a site-specific Health and Safety Plan (HSP) for construction projects that is consistent with the SMP. The HSP will be prepared by the contractor's EH&S manager and will be designed to protect onsite workers by including engineering controls, monitoring, and security to prevent unauthorized entry and to reduce construction-related hazards. The HSP will address the possibility of encountering subsurface hazards including hazardous waste contamination and include procedures to protect workers and the public.

The construction contractor will also designate an individual who will have responsibility for implementing project soil waste management activities under the oversight of the OGS compliance manager.

This individual will provide day-to-day oversight of construction waste management including:

- Visual inspections of all waste storage areas
- Identification/classification of wastes generated
- Maintenance of storage areas
- Arranging for and coordinating the offsite transport of generated wastes
- Record keeping of inspections and waste transport/disposal/recycling activities.

The Phase 2 construction contractor and individual(s) responsible for SMP implementation will be provided to the CEC following contractor selection. Construction activities are expected to commence May 25, 2011, and last approximately 27 months.

4.0 Excavated Soil Management

This section addresses the onsite management and re-use or disposal of excavated soils.

4.1 Potentially Contaminated Soils

As indicated in Section 2.1, both a Phase I ESA and a partial Phase II ESA evaluating soil and groundwater contamination at the power plant site have been conducted. During construction activities, the exposure of construction workers, site workers, visitors, and the public to potentially contaminated soil will be minimized by a series of control measures. Equipment operators and laborers will be required to wear personal protective equipment (PPE) such as dust masks or air-purifying respirators when necessary, and as designated by the HSP to avoid potential exposure. The required level of respiratory protection will be determined based the procedures outlined in the project HSP, and may include continuous air monitoring. The PPE requirements for given tasks and anticipated site conditions will be provided in the project HSP.

To protect site workers, visitors, and the public from potential exposure to site contaminants, access to these construction areas will be strictly controlled and only those with the proper authorization and training will be allowed to access the site. Where necessary, the creation of potential dust from excavation activities will be controlled through the use of watering and/or silt fencing to avoid the creation of fugitive dust and other measures as outlined in the OGS Air Quality Construction Mitigation Plan. Additional control measures as defined in the OGS Stormwater Pollution Prevention Plan and provisions of this SMP will be used to minimize the effects of construction efforts on the surrounding environment.

4.2 Pre-excavation/Pre-grading Soil Characterization

In an effort to increase the efficiency of the construction process and to assess potential hazards of previously unidentified contamination, CCGS may elect to characterize specific project work areas for contamination in situ prior to excavation or grading activities. Representative soil samples may be collected and submitted for laboratory analysis on an average frequency of approximately one sample per 100 cubic yards of soil to be characterized (for linear trenching samples will be collected at a frequency of at least one per 100 linear feet).

4.3 Detection of Unanticipated Contaminated Soil

Once earthwork and construction activities commence, the following approach will be taken to address areas of unanticipated contamination beneath the surface soil. Field crews will be directed to stop work if they observe staining, unusual odors, or leaking containers during the excavation activities. The field personnel will be instructed to notify the construction

superintendent, who will, in turn, notify the California licensed Professional Engineer (PE) or Professional Geologist (PG) designated to the project. The PE or PG will inspect and evaluate the potentially contaminated material and direct any collection of samples for analyses as provided in this SMP.

4.4 Stockpiled Soils from Construction Activities

DuPont has requested the use of any excess soils resulting from initial leveling and grading of the OGS site. There are three soils stockpile areas where DuPont proposes to store the stockpiled soil. DuPont plans to use this material during build-out of the DuPont Oakley Specific Plan. Contractor will move the soils and create and stabilize these soil piles in accordance with all applicable BMPs. After this takes place, stockpiled, the soil stockpiles will be owned and maintained by DuPont in accordance with all applicable BMPs.

4.5 Reuse of Soils on Site

Excavated and stockpiled soil will be reused on site to the maximum extent possible. Stockpiled soils intended for offsite disposal will be handled in accordance with Sections 4.7 and 4.8 of this SMP.

4.6 Soil Disposal

Soils that are not reused on site will be stockpiled for DuPont (see section 4.4 above). Any excess soils that are not reused or stockpiled will be sampled and characterized for disposal. There are two possible scenarios for ultimate disposition of the excavated soils that are not reused onsite. The number of composite samples will be dependent on the quantity of excavated soil to be characterized but will be based on a rate of approximately one sample per 1,000 cubic yards of soil. (In-situ characterization results may be used in lieu of additional characterization if determined to be representative of the excavated soil.) Analysis could indicate: (1) Soils are below designated waste levels and are thus acceptable for disposal or reuse at a Class II or III landfill; or (2) the soils exceed not only industrial screening levels but are also above either designated waste levels or are characterized as hazardous waste under CCR Title 22, Division 4.5.

4.7 Waste Disposal Sites

Nonhazardous soil waste that is not reused onsite and is not considered a designated waste will be disposed of at a Class III landfill. Soils that are considered a designated waste will be disposed of at a Class II disposal facility. Hazardous waste will be shipped to a fully permitted offsite Class I disposal facility. The construction contractor will be responsible for establishing contractual agreements with waste disposal and/or recycling companies including any additional chemical constituent analysis that may be required by the landfill. For ultimate disposal, California has the following three hazardous waste (Class I) landfills:

Clean Harbors Buttonwillow Landfill in Kern County: Buttonwillow has been permitted to accept all hazardous wastes except flammables, PCB with a concentration greater than

50 parts per million, medical waste, explosives, and radioactive waste with radioactivity greater than 1,800 picocuries (Buoni, 2009).

Clean Harbors Westmoreland Landfill in Imperial County: The landfill's conditional use permit prohibits the acceptance of some types of waste, including radioactive (except geothermal) waste, flammables, biological hazard waste (medical), PCB, dioxins, air- and water-reactive wastes, and strong oxidizers (Clean Harbors, 2011).

Chemical Waste Management, Inc's Kettleman Hills Landfill in Kings County: The Class I landfill is permitted for and will accept all hazardous wastes except radioactive, medical, and unexploded ordnance (CIWMB, 2007).

In addition to landfills, approximately 25 offsite commercial hazardous waste treatment and recycling facilities operate in the region, including facilities owned by Safety-Kleen in Reedly and San Jose, California. These facilities have sufficient capacity to recycle and/or treat hazardous waste generated in California that does not go to landfills.

5.0 References

California Environmental Protection Agency (CalEPA). 2005. Use of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties. January.

California Integrated Waste Management Board (CIWMB). 2007. Registration Permit for Chemical Waste Management, Inc. – Kettleman Hills Facility (SWIS 16-AA-0023). December 4, 2007.

Clean Harbors Westmoreland Landfill. 2011. Web site: http://www.cleanharbors.com/locations/index.asp?id=54. Accessed January 31.

DuPont Corporate Remediation Group. 2004. *Western Development Area Phase I and Phase II Environmental Site Assessment – DuPont Oakley Site*. October 19.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB). 2008. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater (Interim Final – November 2007 [revised May 2008]).