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City of Morro Bay
Community Development Dept.

May 11, 2021

Mr. John Bystra
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826-3200

Subject: Response to Department of Toxic Substances Control Comments on the *Draft Soil Management Plan for the Former Tank Farm Area, Former Morro Bay Power Plant*

Dear Mr. Bystra:

On behalf of Morro Bay Power Company, LLC (MBPC), Terraphase Engineering Inc. (Terraphase) is pleased to provide responses to comments provided by the Department of Toxic Substances Control (DTSC) in your letter dated February 5, 2021 (the comment letter), on the *Draft Soil Management Plan for the Former Tank Farm Area, Former Morro Bay Power Plant* (the Draft SMP), dated October 2020. In addition to your comments, the comment letter included comments from Yun Zhang, Geological Services Unit (GSU), and Uta Hellmann-Blumberg, Human and Ecological Risk Office (HERO).

Responses to DTSC, GSU, and HERO comments are presented below. The SMP has been revised as indicated by the responses. The Final SMP is attached.

Responses to Comments Provided by DTSC Project Manager, John Bystra

DTSC Comment 1

Since the Draft SMP was submitted to DTSC, the Site underwent an administrative name change from Dynegy Morro Bay LLC to Morro Bay Power Company LLC on November 30, 2020. DTSC recommends that the revised version of the Draft SMP identify this fact. This comment affects the title page, Sections 1.0 and 2.2, and Table 2.

Response to DTSC Comment 1: The SMP has been revised accordingly.

DTSC Comment 2

In Section 1.0, the Site is defined as the portion of AOC 1 to which the SMP applies. However, the word Site (capitalized) is used in Section 2.0 and its subsections to denote the entire MBPP property owned by Dynegy/Morro Bay Power Company LLC. Please update the language in the SMP to reflect the difference between the Site and the MBPP property.

Also, the Site, must have a map and specific legal description stamped by a licensed land surveyor to be included in the Land Use Covenant to be recorded for the Site. This will allow clear identification between soils that are managed under the SMP and those that need no specific management to protect human health and the environment.

Please note that DTSC does not expect this legal description to be contained within the SMP for the SMP to be finalized and approved.

Response to DTSC Comment 2: The SMP has been revised to clearly distinguish between the Site (i.e., the Former Tank Farm) and the MBPP.

The stated requirements for the Land Use Covenant are noted.

DTSC Comment 3

In Subsections 4.1 and 4.2, a sentence states that "Soil excavated from the Site may be used as backfill or to grade the Site without analytical testing." While DTSC understands that this is usual to propose for an area containing contaminated soil, the underlying assumption is that the area has relatively uniform contamination in the soil column. However, at the Site, the contamination in shallow soil (i.e., soil at zero to two feet below ground surface (bgs)) is greater than the contamination found in deeper soil. This language should be clarified to say that site soil may be reused without analytical testing if it is used in a manner that keeps it in the same depth range (i.e., zero to two feet bgs or two feet bgs and deeper) where it originates. This would help verify that more highly contaminated soil is not reused in such a way to potentially contaminate less contaminated soil areas.

Response to DTSC Comment 3: Limiting the replacement of soil to the same depth range from which it is excavated is impractical to implement in a construction setting and does not reduce risk to construction workers or the environment. As shown on Figure 3 of the *Final Screening-Level Human Health Risk Assessment Report, Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California*, dated March 12, 2020, total petroleum hydrocarbon (TPH) concentrations that exceed site-specific soil screening levels (SSLs) in AOC 1 soil are spatially limited and sporadic. The few SSL exceedances in AOC 1 are exclusively near the footprints of the former tanks. The TPH concentrations in most of the 0 to 2-foot bgs samples are below the SSLs. Soil will be, invariably, mixed during the excavation process, resulting in some degree of spatial homogenization. Furthermore, placing shallow TPH-containing soil at a greater depth does not affect risk because the San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs), which were used to develop the TPH SSLs, are agnostic of soil depth. It is common practice, however, to avoid placement of contaminated soil below the groundwater table to minimize the potential for contaminant leaching to groundwater. Therefore, the SMP has been revised to limit the placement of shallow (0-2 feet bgs) soil to depths above the maximum historical groundwater elevation.

DTSC Comment 4

In Subsection 4.1.1 (Stockpiles), the procedures for stockpiling soils are described in a list of bullet points. However, this list of bullet points should be clarified using consistent terms. From the described design, it appears as if there will be hay bales outlining the perimeter of a soil pile, with a liner that is placed above the hay bales but below the soil stockpile, creating berms and an area acting as secondary containment for the soil stockpile. Also, plastic sheeting will be placed on top of any soil pile which is not actively being 'used'. However, the hay bales are described as being beneath the liner, even though they must be beneath the 'plastic sheeting' the soils piles will be stockpiled on. This creates ambiguity whether the

liner is the same as the plastic sheeting, or whether there are two layers (plastic sheeting and liner) beneath each soil pile. Please clarify this language.

Response to DTSC Comment 4: The SMP has been revised to clarify the language describing soil stockpiling.

DTSC Comment 5

In Subsection 4.1.2, there are a few bullet points that could benefit from clarification, as follows:

- *The second bullet point states, "Liners shall be disposed of as contaminated debris." DTSC assumes this means the liners used as part of soil stockpiling. When DTSC Comment 4 is addressed, MBPC should consider whether any updates to terminology will affect this bullet point language as well; and*
- *The third bullet point states, "When not in use, securely fastened covers should be installed on all roll-off bins." If the covers need to be 'installed', it infers that the roll-off bins are not already equipped with covers, whether permanently attached or not. Please reword this bullet point to more accurately reflect the roll-off bins' characteristics.*

Response to DTSC Comment 5: The SMP has been revised to clarify the language describing bin covers. Revisions to Section 4.1.1 have resolved any potential ambiguity regarding liner disposal.

Responses to GSU Comments

GSU Comment 1

Table 1 lists soil risk-based screening levels (numbers) for constituents of concern (COCs) at the Site, which include TPH, metals, volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and pesticides. However, the units of the screening numbers are missing. Please revise the table to include units for all COC screening levels.

Response to GSU Comment 1: Table 1 has been revised to include the units (milligrams per kilogram) for all COCs.

Responses to HERO General Comments

HERO General Comment 1

Overall, the content of the Draft SMP seems reasonable but the language and presentation of the SMP introduces unnecessary confusion in some places. Recommendations for clarifications are provided below.

Response to HERO General Comment 1: Comment noted.

Responses to HERO Specific Comments

HERO Specific Comment 1

Section 1.1. (Purpose) second line – clarification of exposure scenario needed. Add “construction” before “workers” for clarification because the construction worker exposure differs from that of a commercial or industrial worker.

Response to HERO Specific Comment 1: The SMP has been revised accordingly.

HERO Specific Comment 2

Section 1.1. (Purpose) second-third line – residual contaminants: Only exposure to petroleum hydrocarbons is mentioned in this section of the text. According to the tables 1 and 2, several additional contaminants could be present in site soils besides petroleum hydrocarbons. Please clarify whether the chemicals in tables 1 and 2 do or do not represent contaminants of concern.

Response to HERO Specific Comment 2: As shown in Tables 1 and 2, only the 95 percent upper confidence limit (95UCL) for diesel-range TPH concentrations at the Site exceeds SSLs. The 95UCL values for all other contaminants of concern are below their respective SSLs. Therefore, the SMP was prepared to protect construction workers from risks due to the presence of TPH. This has been further clarified in the SMP.

HERO Specific Comment 3

Section 2.1. (Site Description) second paragraph: The second sentence is confusing in the way it mentions “berm” twice. Rewording is recommended.

Response to HERO Specific Comment 3: The SMP has been revised accordingly.

HERO Specific Comment 4

Section 2.2. (Site History) – last sentence on page 2: The sentence is confusing and possibly inaccurate. The Screening Level HHRA was conducted in 2019 and finalized in 2020. Table 1 and Table 2 are mentioned in one sentence each, but their significance is not explained. Please add clarifying information.

Response to HERO Specific Comment 4: The date of the Screening-Level HHRA was revised to 2019/2020. The purpose of Tables 1 and 2 is clear in that they provide SSLs and a statistical summary of concentrations of contaminants of concern, respectively. It is common for an SMP to include this information to inform decisions related to worker health and safety.

HERO Specific Comment 5

Section 3.2. (Storm Water Management) – wording not clear (too general). Bullet 1 on top of page 5 states “pollutants and their sources, including construction site erosion, will be controlled”. It is not clear which pollutants and sources will be controlled. Bullet 3 states “best management practices will be used”

and subsequently mentions a fact sheet. However, it is not clear what will be controlled and how. Please be more specific and state which pollutants from which sources will be controlled, for instance.

Response to HERO Specific Comment 5: The SMP should not prescribe best management practices (BMPs) for stormwater protection. BMPs should be selected based on site conditions and the professional judgment of the contractor or consultant. Furthermore, stormwater protection for projects over 1 acre would be implemented under the State Water Resources Control Board's Construction General Permit (Order 2009-0009 DWQ). The text has been revised to provide clarification of Site pollutants and to provide a few examples of applicable BMPs.

HERO Specific Comment 6

Table 1 "Screening Criteria" has several deficiencies:

- a) The soil screening criteria should have units.*
- b) Many screening levels (SLs) in Table 1 have an excessive number of significant figures/digits (some have 1 while others have 8). A consistent number of significant figures (2 would be reasonable) should be used.*
- c) The same petroleum hydrocarbon SLs are listed in the columns for the EPA RSLs and the Water Board ESLs. Please correct.*
- d) Petroleum hydrocarbon mixtures have no screening levels based in cancer; therefore, the basis for the selection cannot be "Min CR/NCR".*
- e) It is not clear why the Table includes RSLs for petroleum because they have not been used. (The ESLs were used for petroleum mixtures.)*
- f) Recommendation for the "Notes" below Table 1:*
 - i. DTSC-SL: a date should be provided.*
 - ii. RSL: The RSLs are published twice a year; therefore, a month should be provided.*
 - iii. SL: This should be "Screening Level" not "DTSC HERO Note 3 Screening Level".*

Responses to HERO Specific Comment 6:

- a. Table 1 has been revised to include the units (milligrams per kilogram) for all COCs.
- b. The significant figures have been revised accordingly.
- c. This typographical error has been corrected.
- d. The basis for selection has been revised accordingly.
- e. This typographical error has been corrected.
- f. Notes have been revised as follows:
 - i. A date for the DTSC-SL reference has been added.

- ii. A month has been added to the date of the EPA RSLs.
- iii. The definition of SL has been revised accordingly.

HERO Specific Comment 7

Table 2: The purpose of Table 2 " Summary Statistics ..." is not explained. Table 2 is briefly mentioned at the end of Section 2.2. (Site History): "Concentrations of TPH and other constituents in the Former Tank Farm soil are summarized in Table 2." Why is that relevant for the SMP?

Response to HERO Specific Comment 7: The purpose of Table 2 is to provide a statistical summary of concentrations of contaminants of concern. It is common for an SMP to include this information to inform decisions related to worker health and safety.

Closing

We appreciate DTSC's review of the Draft SMP. If you have any questions, please feel free to contact me at 510-645-1858 or by email at peter.zawislanski@terraphase.com.

Sincerely,

for Terraphase Engineering Inc.



Peter Zawislanski, P.G., C.Hg.
Principal Hydrogeologist

Attachment: *Final Soil Management Plan for the Former Tank Farm Area*

cc: Dianna Tickner, MBPC

FINAL

Soil Management Plan for the Former Tank Farm Area

MBPC-Owned Portion of the Former Morro Bay Power Plant, Morro Bay,
California

Prepared for

Morro Bay Power Company, LLC
1290 Embarcadero Road
Morro Bay, California 93442

Prepared by

Terraphase Engineering Inc.
1404 Franklin Street, Suite 600
Oakland, California 94612

May 2021

Project Number 0323.001.002

File: rpt-SMP-FormerTankFarm-MBPP-0323-001-002-Final



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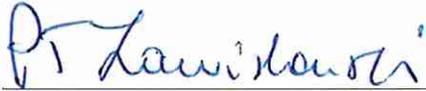
Acronyms and Abbreviations

95UCL	95% upper confidence limit of the mean
amsl	above mean sea level
AOC	area of concern
AOC 1	Area of Concern 1
AST	aboveground storage tank
BMP	best management practice
cy	cubic yard
EPA	United States Environmental Protection Agency
HASP	Health and Safety Plan
HHRA	human health risk assessment
MBPC	Morro Bay Power Company, LLC
MBPP	Morro Bay Power Plant
mg/kg	milligrams per kilogram
mph	miles per hour
RCRA	Resource Conservation and Recovery Act
SSL	soil screening levels
Site	the former Tank Farm portion of AOC 1, within the former Morro Bay Power Plant, located at 1290 Embarcadero Road in the City of Morro Bay, California
SMP	<i>Final Soil Management Plan for the Former Tank Farm Area</i>
Terraphase	Terraphase Engineering Inc.
TPH	total petroleum hydrocarbons



Certification

All geologic information, conclusions, and recommendations in this document have been prepared under the responsible charge of a California Professional Geologist.



Peter T. Zawislanski
Principal Hydrogeologist
California Professional Geologist (7210)
California Certified Hydrogeologist (925)

May 11, 2021
Date

1 Introduction and Purpose

This *Final Soil Management Plan for the Former Tank Farm Area* (SMP) has been prepared by Terraphase Engineering Inc. (Terraphase) on behalf of Morro Bay Power Company, LLC (MBPC)¹ for a portion of the MBPC-owned portions of the former Morro Bay Power Plant (MBPP) located at 1290 Embarcadero Road in Morro Bay, California (Figures 1 and 2). MBPP contains eight separate areas of concern (AOCs). The SMP requirements apply only to the former Tank Farm portion of AOC 1 (Site), which is in the northwestern corner of the MBPP (Figure 2).

A Draft SMP was submitted to the Department of Toxic Substances Control (DTSC) on October 22, 2020. The DTSC commented on the Draft Report in a letter dated February 5, 2021. This Final SMP addresses DTSC's comments.

1.1 Purpose

In the event of future excavation and/or soil movement within the Site, appropriate precautions and controls should be instituted to protect construction workers and the environment from exposure to residual concentrations of total petroleum hydrocarbons (TPH) in soil. As discussed in Section 2, the 95 percent upper confidence limit (95UCL) for diesel-range TPH concentrations at the Site exceeds site-specific soil screening levels (SSLs). The 95UCL values for all other contaminants of concern are below their respective SSLs.

This SMP describes the procedures to be used to manage soil at the Site during future potential intrusive activities, such as excavation, trenching, and underground utility installation, and/or maintenance that may be conducted in support of site redevelopment activities.

2 MBPP Background

2.1 MBPP Description

MBPP is a 140-acre former power generation facility, with ongoing, limited decommissioning/maintenance activities and inspections, and an operational switchyard. The MBPP is bounded to the south by Embarcadero Road, to the west by Morro Bay, to the north by Highway 1, and to the east by residential and small commercial properties.

MBPP includes eight AOCs, with AOC 1 being the largest. AOC 1 includes the Former Tank Farm, a berm surrounding the Former Tank Farm, and areas outside of the Former Tank Farm (Figure 2).

¹ MBPP underwent an administrative name change in November 2020; Dynegey Morro Bay, LLC, was changed to MBPC.



MBPP topography is generally flat with a slight elevation gradient from east to west along the property. The ground surface elevation is approximately 20 feet above mean sea level (amsl) and slopes downhill to 0 feet amsl near the western edge of MBPP, adjacent to Morro Bay (Terraphase 2020).

2.2 MBPP History

Prior to 1951, the MBPP property was owned and occupied by the United States Navy and used as an amphibious training base. Pacific Gas & Electric purchased the property in 1951, and construction of the MBPP began in 1953. After numerous changes in ownership, LS Power acquired MBPP in 2006, and subsequently merged with Dynegy in April 2007. Dynegy permanently closed the power plant in early 2014. An administrative name change from Dynegy Morrow Bay, LLC to MBPC occurred on November 30, 2020.

As stated above, AOC 1 includes the Former Tank Farm, which historically contained six aboveground storage tanks (ASTs), of which five were used to store No. 6 fuel oil, and one was used to store No. 2 fuel oil. Sumps from the secondary containment areas for ASTs 1 through 5 were directed to an oil/water separator unit, located in the southern portion of AOC 1. Also located near the southern portion of AOC 1 was the former Oil Transfer Pond, built in 1971 as a temporary surface impoundment to receive sea water being flushed from the marine fuel oil transfer line. All ASTs were demolished by October 2011 (RPS Group, Inc. 2018).

Soil and groundwater conditions at the MBPP have been investigated under the Resource Conservation and Recovery Act (RCRA) Corrective Action Program since 1986, under Department of Toxic Substances Control oversight. Soil within the top 2 feet in the Former Tank Farm of AOC 1 contains the highest concentrations of TPH at MBPP, at concentrations up to 20,000 milligrams per kilogram (mg/kg) within the former tank footprints (Terraphase 2020). TPH concentrations outside of the tank footprints and/or deeper than 2 feet below ground surface are between non-detect and 189 mg/kg, except for one location at 2,200 mg/kg.

A Human Health Risk Assessment (HHRA) conducted in 2018 concluded that there are no unacceptable risks to receptors under a commercial/industrial land use scenario for AOC 1 (RPS Group, Inc. 2018). The 2018 HHRA did not evaluate residential screening levels.

A Screening-Level HHRA conducted in 2019/2020 concluded that soil in the former Tank Farm portion of AOC 1 does not meet residential screening levels (Table 1); therefore, an SMP is required for the Former Tank Farm soils (Terraphase 2020). Concentrations of TPH and other constituents in Former Tank Farm soil are summarized in Table 2. As shown in Tables 1 and 2, the 95UCL for diesel-range TPH concentrations at the Site exceeds SSLs. The 95UCL values for all other contaminants of concern are below their respective SSLs. Therefore, only diesel-range TPH concentrations at the Site pose a potential risk to construction workers.

An SMP is not required for the remainder of the MBPC-owned portions of MBPP, including the portion of AOC 1 that is outside of the Former Tank Farm, because the Screening-Level HHRA showed that soil in these areas meets residential screening levels.



3 Earthwork Control Measures for Soil-Disturbing Activities

Dust and stormwater control will be performed during soil-disturbing activities, as described in the following sections, to ensure that site workers and offsite receptors are not exposed to unsafe concentrations of airborne contaminants.

3.1 Dust Control

Dust control measures will be implemented during soil-disturbing activities at the Site to reduce dust generation to minimize the exposure of construction workers to dust, and to prevent dust from migrating offsite. Dust generation may be associated with excavation activities, truck traffic, wind traversing uncovered soil stockpiles, loading of transportation vehicles, or other earthwork activities.

3.1.1 Dust Management Measures

The following dust management measures shall be followed:

- Soil-disturbing activities will cease if sustained wind speeds exceed 20 miles per hour (mph) or wind gusts exceed 25 mph. "Sustained" is defined as greater than 5 minutes in a period of one hour. During periods of stop work due to excessive wind speed, soil stockpiles will be tarped or otherwise managed to minimize dust generation. Soil-disturbing activities will not recommence until the wind speed has remained at lower than 20 mph for at least 30 minutes.
- Stockpiles which are not being actively built will be tarped or otherwise managed to minimize dust generation.

3.1.2 Active Controls

The following active controls shall be followed:

- If necessary, a water truck will circulate around the project area to maintain adequate soil moisture.
- Soil drop heights during truck loading will be reduced to the greatest degree practicable. If necessary, a fire hose will be used to wet down soil as it is being loaded to mitigate dust.
- All trucks hauling soil will be tarped before leaving the loading area.
- All trucks will be brushed clean of loose soil before leaving the Site.

3.2 Storm Water Management

The following measures will be taken to reduce the potential for soil-disturbing activities to negatively impact stormwater:

- Pollutants and their sources, including construction site erosion, will be controlled. TPH is the primary pollutant at the Site. Pollutants related to soil excavation, grading, and stockpiling also include sediment (measured as turbidity) and straw/mulch (visual observation).



- Non-stormwater discharges will be identified and either eliminated, controlled, or treated.
- Best management practices (BMPs) will be used to reduce or eliminate pollutants in stormwater discharges and non-stormwater discharges from soil-disturbing activity.

BMPs are measures used to prevent or reduce the potential of pollution from any type of activity. BMPs are a very broad class of measures and may include processes, procedures, scheduling activities, prohibitions on practices, and other management practices to prevent or reduce storm water pollution. The California Stormwater Quality Association website (www.casqa.org) contains factsheets for BMPs that may be implemented on the Site. The BMP factsheets include descriptions and installation/construction requirements for the BMPs. BMPs relevant to soil excavation, grading, and stockpiling include fiber rolls, sweeping, and dust suppression.

If a project soil disturbance area is 1 acre or greater, a Storm Water Pollution Prevention Plan shall be prepared and coverage will be initiated under the State Water Resources Control Board's Order No. 2009-0009 DWQ (as amended by Order Nos. 2010-0014 DWQ and 2012-0006-DWQ) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities.

4 Soil Management

In the event of future soil-disturbing activities at the Site, appropriate precautions and controls shall be instituted to protect workers and the environment from exposure to residual concentrations of TPH in soil. The following sections describe how disturbed site soil will be stored onsite, under what conditions site soil can be reused, and how soil will be characterized and managed for offsite disposal.

Site soil must be managed in accordance with applicable regulations, health and safety requirements, and the applicable procedures described in this SMP.

4.1 Management and Storage of Excavated Soil

Soil-disturbing activities at the Site may include small excavations to install or access buried utility lines and pipes to perform repairs, or larger excavations for site redevelopment. Soil excavated from the Site may be used as backfill or to grade the Site without analytical testing. Excavated or graded soil from the Site cannot be moved outside of the Site or placed in other areas of MBPP without analytical testing and characterization, as discussed in Section 4.2.

It is anticipated that most of the soil excavated from small site improvement and/or maintenance activities will be used for excavation backfill within the Site, but larger excavations may require offsite soil disposal.

Excavated soil shall be stored in stockpiles and/or roll-off bins prior to reuse, characterization, and/or disposal, in accordance with Sections 4.1.1 and 4.1.2.



4.1.1 Stockpiles

At a minimum, the following procedures should be followed for stockpiling excavated site soils:

- Stockpiles should be placed on a liner near the disturbed areas or within a designated storage area.
- Stockpiles shall be provided with cover and perimeter berm to prevent rupture and release or infiltration of liquids.
- Minimum 10-millimeter-thick polyethylene sheeting shall be used for liners and covers.
- A perimeter berm, typically with hay bales placed beneath the liner, shall be constructed to allow for collection of any free liquids draining from the stockpile.
- Covers and perimeter berms shall be secured in place when not in use and at the end of each workday, or as necessary to prevent wind dispersion or runoff from major precipitation events.
- Accumulated free liquids (if any) on the underlying liner shall be pumped (or otherwise removed) to a container for characterization and disposal.
- Accumulation dates shall be maintained in a field notebook for waste stored onsite in stockpiles, including the date of placement and a general description of the location of excavation.

4.1.2 Roll-off Bins

Covered roll-off bins or drums may also be used to temporarily store wastes based on the following procedures:

- Roll-off bins shall be inspected upon arrival onsite by the Contractor. Any roll-off bins that arrive with contents in them should be rejected.
- Liners shall be disposed of as contaminated debris.
- When not in use, covers should be securely fastened on all roll-off bins used to store soil.
- Old or obsolete labels should be removed.
- New and applicable labels shall be applied to roll-off bins and shall include permanent and legible markings indicating the type of waste, location where waste was generated, and accumulation start date.

4.2 Excavated Soil Reuse

Excavated and/or disturbed soil from the Site may be reused within the Site without analytical testing. However, soil that is excavated from the top 2 feet, which is the depth interval containing concentrations of TPH above SSLs, cannot be placed below the maximum historical groundwater elevation, unless it is characterized, and the analytical results are below SSLs presented in Table 1. The maximum groundwater elevation at the Site varies from approximately 14 feet amsl in the northeastern corner (near former well P-10) to approximately 5 feet amsl in the southwestern corner (near former well MW-02).² The depth to the maximum groundwater elevation from ground surface ranges from 8 to

² Historical groundwater elevation data obtained from the most recent groundwater monitoring report (ETIC 2018).



11 feet. To ensure that it is placed above the groundwater table, soil excavated from the top 2 feet shall not be placed deeper than 7 feet below ground surface.

Soil from the Site may only be reused in other portions of MBPP if analytical results from soil sample analysis are below the established SSLs (Table 1). If the maximum concentration exceeds the SSLs, a 95UCL³ shall be calculated for each constituent that is above the SSLs. If the 95UCL computed from the analytical data representing the disturbed soil is below the SSLs, then the soil is acceptable for reuse in other portions of MBPP.

Soil designated for off-site disposal may require additional chemical analysis to meet specific requirements set forth by the receiving disposal facility.

4.3 Excavated Soil Characterization and Profiling

Soil that is to be disposed of offsite will be sampled for waste characterization to evaluate waste disposal options. The analytes and number of samples to be collected for waste characterization will depend on the volume of soil to be disposed of and on the specific landfill acceptance criteria of the waste-receiving facility. In general, characterization will entail collection of composite soil samples from roll-off bins and/or stockpiles. One four-point composite sample will be taken from each roll-off bin. For stockpiles, the number of representative samples to be collected will be as follows, unless otherwise required by the receiving disposal facility:

Stockpile Volume	Frequency
0 to 500 cy	One four-point composite per 250 cy
500 to 1,500 cy	One four-point composite per 500 cy
1,500+ cy	One four-point composite per 1,500 cy

Note: cy = cubic yard

Soil samples shall be collected in laboratory-provided containers, as required by the indicated laboratory method. Soil samples shall be immediately placed on ice and transported to a State of California certified laboratory under chain-of-custody protocol for the following analyses, at a minimum:

- Volatile organic compounds by United States Environmental Protection Agency (EPA) Method 8260B;
- California Assessment Manual 17 metals by EPA Method 600/7400 series;
- TPH by EPA Method 8015; and
- Semivolatile Organic Compounds by EPA Method 8270.

³ 95UCLs should be computed using Environmental Protection Agency ProUCL version 5.1 (<https://www.epa.gov/landresearch/proucl-version-5100-documentation-downloads>). Based on data distribution analyses, the appropriate 95UCL will be selected for comparison to the SSLs.



4.4 Excavated Soil Disposal

Proper soil disposal methods will be evaluated once profiling analytical results have been received. Soil containing non-hazardous concentrations of each of the above-referenced constituents (and other constituents, if applicable) may be disposed of at a properly permitted and approved municipal solid waste landfill. If the excavated material has hazardous concentrations of constituents, the material will be disposed of at a permitted hazardous waste landfill, per the specific landfill acceptance criteria.

5 Waste Transport and Disposal

The results of characterization and profile sampling will be used to determine how the wastes should be transported and disposed of. A contractor licensed for commercial transportation shall transport non-hazardous waste. If a generated waste is hazardous, the transporter must be licensed in accordance with 49 CFR 171-179. The transportation and disposal of waste generated at the Site will be performed in accordance with all applicable federal, state, and local laws, regulations, and ordinances.

When necessary, water spray or mist will be applied for dust control purposes during soil loading activities. Each truck will receive the proper placards and paperwork prior to leaving the Site.

Prior to leaving the Site, the exterior of the transporting vehicle (including the tires), will be cleaned to remove any waste material present and to prevent material being tracked into public roadways. Tarps will be secured over loaded solid materials to prevent release of soil or dust during transport. Prior to leaving the Site, all trucks will be inspected by the Contractor to ensure that the payloads are properly loaded and adequately covered, the vehicles are cleaned of soil, and the shipment is properly documented.

Transportation of wastes shall be inventoried the day of transportation from the Site by the Contractor. A carbon copy or photocopy of the initial manifest or bill of lading form for each load shall be retained. All required transportation manifests shall be prepared and signed by the current Site owner or an official representative.

6 Project Personnel Training Requirements

A training session discussing all components of this SMP will be conducted with all project supervisory personnel prior to the commencement of soil-disturbing activities. A project-specific Health and Safety Plan (HASP) will be prepared. Construction workers involved in soil-disturbing activities shall review and sign the HASP. Field personnel shall have appropriate training and qualifications for the anticipated work (e.g., Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response training, if necessary). All fieldwork shall be performed in accordance with the HASP by staff that are appropriately informed, trained, and certified to complete the work.



Project supervisory personnel are required to ensure that all work is conducted in compliance with this SMP, including completing additional training of their subordinates. Copies of the SMP will be made available to site workers for easy access.

7 Reporting

After each year during which soil-disturbing activities take place, an annual report will be submitted to the Department of Toxic Substances Control by January 30th. The report will provide details identifying the excavation area(s), the amount of soil disturbed, the analyses performed on the disturbed soils, and the disposition of the disturbed soil. All soil disposal manifests will be included with the report. The results of analytical testing, and figures illustrating the areas excavated will be provided.

8 References

- ETIC. 2018. *Semi-Annual Groundwater Monitoring and Sampling Data Transmittal*. 1 January through 30 June 2018. Pacific Gas and Electric Company Morro Bay Power Plant, Morro Bay, California. July 31.
- RPS Group, Inc. 2018. *Draft Human Health Risk Assessment, Morro Bay Power Plant, Morro Bay, California*. August.
- Terraphase Engineering Inc. (Terraphase). 2020. *Final Screening-Level Human Health Risk Assessment Report, Dynegy-Owned Portion of the Former Morro Bay Power Plant, Morro Bay, California*. March 12.

Tables

- 1 Screening Criteria and Site-Specific Soil Screening Levels
- 2 Summary Statistics for Soil Samples Collected in the Former Tank Farm Area



Table 1
 Screening Criteria and Site-Specific Soil Screening Levels
 MBPC-Owned Portion of the Former Morro Bay Power Plant
 Morro Bay, California

Constituents of Concern	Generic Soil Screening Criteria				MBPP Site-Specific Ambient Thresholds	SSL	Basis
	DTSC-SL, Residential	EPA Residential Soil RSLs (Min CR/NCR)	Residential Soil ESLs (Min CR/NCR)	Construction Worker ESLs (Min CR/NCR)			
Petroleum Hydrocarbons							
TPH-md	--	--	2.6E+02	1.1E+03	--	2.6E+02	Residential Soil ESLs ¹
TPH-r	--	--	1.2E+04	5.4E+04	--	1.2E+04	Residential Soil ESLs ²
TPH-u	--	--	2.6E+02	1.1E+03	--	2.6E+02	Residential Soil ESLs ¹
Metals							
Antimony	--	3.1E+01	1.1E+01	5.0E+01	6	1.1E+01	Residential Soil ESLs (Min CR/NCR)
Arsenic	1.1E-01	6.8E-01	6.7E-02	9.8E-01	7.54	7.5E+00	MBPP Site-Specific Ambient Thresholds
Barium	--	1.5E+04	1.5E+04	3.0E+03	207	3.0E+03	Construction Worker ESLs (Min CR/NCR)
Beryllium	1.6E+01	1.6E+02	1.6E+01	2.7E+01	0.55	1.6E+01	Residential Soil ESLs (Min CR/NCR)
Cadmium	--	7.1E+01	7.8E+01	5.1E+01	2	5.1E+01	Construction Worker ESLs (Min CR/NCR)
Chromium	--	1.2E+05	--	--	106	1.2E+05	EPA Residential Soil RSLs (Min CR/NCR)
Cobalt	--	2.3E+01	2.3E+01	2.8E+01	34.3	3.4E+01	MBPP Site-Specific Ambient Thresholds
Copper	--	3.1E+03	3.1E+03	1.4E+04	61.4	3.1E+03	EPA Residential Soil RSLs (Min CR/NCR)
Hexavalent Chromium	3.0E-01	3.0E-01	3.0E-01	2.8E+00	NA	3.0E-01	Residential Soil ESLs (Min CR/NCR)
Lead	8.0E+01	4.0E+02	8.0E+01	1.6E+02	12.2	8.0E+01	DTSC-SL, Residential
Mercury	1.0E+00	1.1E+01	1.3E+01	4.4E+01	0.067	1.0E+00	DTSC-SL, Residential
Molybdenum	--	3.9E+02	3.9E+02	1.8E+03	10	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Nickel	8.2E+02	1.5E+03	8.2E+02	8.6E+01	216	2.2E+02	MBPP Site-Specific Ambient Thresholds
Selenium	--	3.9E+02	3.9E+02	1.7E+03	1.207	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Silver	--	3.9E+02	3.9E+02	1.8E+03	2	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Thallium	--	7.8E-01	7.8E-01	3.5E+00	1	1.0E+00	MBPP Site-Specific Ambient Thresholds
Vanadium	--	3.9E+02	3.9E+02	4.7E+02	106	3.9E+02	EPA Residential Soil RSLs (Min CR/NCR)
Zinc	--	--	2.3E+04	1.1E+05	91.5	2.3E+04	Residential Soil ESLs (Min CR/NCR)
Polynuclear Aromatic Hydrocarbons							
1-Methylnaphthalene	9.9E+00	1.8E+01	--	--	--	9.9E+00	DTSC-SL, Residential
2-Methylnaphthalene	1.9E+02	2.4E+02	2.4E+02	6.7E+02	--	1.9E+02	DTSC-SL, Residential
Acenaphthene	3.3E+03	3.6E+03	3.6E+03	1.0E+04	--	3.3E+03	DTSC-SL, Residential
Acenaphthylene	--	--	--	--	--	--	--
Anthracene	1.7E+04	1.8E+04	1.8E+04	5.0E+04	--	1.7E+04	DTSC-SL, Residential
Azobenzene	--	5.6E+00	--	--	--	5.6E+00	EPA Residential Soil RSLs (Min CR/NCR)
Benzo(a)anthracene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Benzo(a)pyrene	1.1E-01	1.1E-01	1.1E-01	1.0E+01	--	1.1E-01	DTSC-SL, Residential
Benzo(b)fluoranthene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Benzo(g,h,i)perylene	--	--	--	--	--	--	--
Benzo(k)fluoranthene	1.1E+01	1.1E+01	1.1E+01	9.1E+02	--	1.1E+01	DTSC-SL, Residential
Chrysene	1.1E+02	1.1E+02	1.1E+02	9.1E+03	--	1.1E+02	DTSC-SL, Residential
Dibenz(a,h)anthracene	2.8E-02	1.1E-01	1.1E-01	1.1E+01	--	2.8E-02	DTSC-SL, Residential
Fluoranthene	2.4E+03	2.4E+03	2.4E+03	6.7E+03	--	2.4E+03	Residential Soil ESLs (Min CR/NCR)
Fluorene	2.3E+03	2.4E+03	2.4E+03	6.7E+03	--	2.3E+03	DTSC-SL, Residential
Indeno(1,2,3-c,d)pyrene	1.1E+00	1.1E+00	1.1E+00	1.1E+02	--	1.1E+00	DTSC-SL, Residential
Naphthalene	2.0E+00	2.0E+00	3.8E+00	4.0E+02	--	2.0E+00	DTSC-SL, Residential
Phenanthrene	--	--	--	--	--	--	--
Pyrene	1.8E+03	1.8E+03	1.8E+03	5.0E+03	--	1.8E+03	Residential Soil ESLs (Min CR/NCR)
Benzo(a)pyrene Equivalent Value	--	--	--	--	1.5	1.5E+00	MBPP Site-Specific Ambient Thresholds
Volatile Organic Compounds							
Ethylbenzene	--	5.8E+00	5.9E+00	5.4E+02	--	5.8E+00	EPA Residential Soil RSLs (Min CR/NCR)
Toluene	1.1E+03	4.9E+03	1.1E+03	4.7E+03	--	1.1E+03	DTSC-SL, Residential
m-Xylenes	--	5.5E+02	5.8E+02	2.4E+03	--	5.5E+02	EPA Residential Soil RSLs (Min CR/NCR)
o-Xylenes	--	6.5E+02	5.8E+02	2.4E+03	--	6.5E+02	EPA Residential Soil RSLs (Min CR/NCR)
p-Xylenes	--	5.6E+02	5.8E+02	2.4E+03	--	5.8E+02	Residential Soil ESLs (Min CR/NCR)
Pesticides							
Chlordane	1.7E+00	1.7E+00	4.8E-01	1.4E+01	--	4.8E-01	Residential Soil ESLs (Min CR/NCR)

Notes:
 All concentrations in milligrams per kilogram
 -- = not established
 DTSC-SL = California Department of Toxic Substances, HERO Note 3 Screening Level: DTSC HERO Note 3, June 2020
 EPA = United States Environmental Protection Agency
 HERO = Human and Ecological Risk Office of the DTSC
 RSL = EPA Residential Soil Regional Screening Levels (EPA November 2020)
 ESL = San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (SFBRWQCB 2019)
 Min CR/NCR = the lower of cancer and non-cancer criteria, when both criteria are available
 MBPP = Morro Bay Power Plant
 SL = Screening Level
 SSL = Site-Specific Soil Screening Level
 TPH = total petroleum hydrocarbons
 TPH-md = TPH in the middle distillate range
 TPH-r = TPH in the residual range
 TPH-u = undifferentiated TPH
 1 = Residential soil ESL for petroleum in the diesel range
 2 = Residential soil ESL for petroleum in the motor-oil range

Table 2
 Summary Statistics for Soil Samples Collected in the Former Tank Farm Area
 MBPC-Owned Portion of the Former Morro Bay Power Plant
 Morro Bay, California

Constituents of Concern	SSL	Number of Results	Number of Detects	Minimum Concentration (mg/kg)	Minimum Detect (mg/kg)	Maximum Concentration (mg/kg)	Maximum Detect (mg/kg)	Average Concentration (mg/kg)	Median Concentration (mg/kg)	Standard Deviation (mg/kg)	Number of Exceedances	Number of Detects Exceeding SSL	Maximum Detect > SSL?	95UCL (mg/kg)	95UCL > SSL?
Petroleum Hydrocarbons															
TPH-m	260	85	22	<5	5.4	18000	18000	382	2.5	2083	7	7	Yes	1386.0	Yes
TPH-r	12000	85	16	<25	30	20000	20000	1047	12.5	3658	5	5	Yes	2175.0	No
TPH-u	260	123	14	<10	11	25993	25993	60	5.5	318	3	3	Yes	25.9	No
Metals															
Antimony	11	214	0	<0.75	ND	<8	ND	1.7	0.375	1.4	0	0	N	--	--
Aspic	7.54	214	199	<0.5	0.7	<24	7.19	3.5	3.5	1.5	1	0	N	--	--
Bismuth	3000	214	109	1.31	1.31	197	197	34	10.5	45	0	0	N	--	--
Beryllium	16	214	8	<0.25	0.252	<0.7	0.54	0.2	0.25	0.076	0	0	N	--	--
Cadmium	51	214	9	<0.5	0.66	13.5	13.5	0.7	0.8985	0.96	0	0	N	--	--
Chromium (hexavalent)	0.3	69	69	0.02	0.02	0.86	0.86	0.25	0.19	0.17	21	21	Yes	0.284	No
Chromium (III+VI)	110000	214	213	2.93	2.93	148	148	36	2.9	24	0	0	N	--	--
Cobalt	34.3	214	148	<0.25	0.448	45	45	6.7	2.5	8.1	4	4	Yes	9.04	No
Copper	3100	214	165	<0.25	0.584	193	193	12	1.68	22	0	0	N	--	--
Lead	80	214	198	<0.4	0.503	116	116	3.3	1.2	9.8	1	1	Yes	6.25	No
Mercury	1	214	5	<0.05	0.06	0.307	0.307	0.036	0.04175	0.021	0	0	N	--	--
Molybdenum	390	214	17	<0.25	0.335	<14	10.4	2.8	2.7	2.6	0	0	N	--	--
Nickel	216	215	210	0.38	0.38	247	247	43	1.6	52	2	2	Yes	58.3	No
Selenium	390	214	0	<0.75	ND	<1	ND	0.43	0.375	0.069	0	0	N	--	--
Silver	390	214	0	<0.25	ND	<3	ND	0.54	0.125	0.44	0	0	N	--	--
Thallium	1	214	4	0.06	0.06	2	2	0.44	0.375	0.13	1	1	Yes	0.14	No
Vanadium	390	214	211	1.33	1.33	151	151	25	16.7	24	0	0	N	--	--
Zinc	23000	214	211	1.7	1.7	232	232	22	11	27	0	0	N	--	--
Polynuclear Aromatic Hydrocarbons															
2-methylanthracene	190	3	0	<0.33	ND	<0.33	ND	0.17	0.165	0	0	0	N	--	--
Acenaphthene	3300	103	0	<0.1	ND	<0.5	ND	0.055	0.05	0.031	0	0	N	--	--
Acenaphthylene	103	103	0	<0.2	ND	<1	ND	0.11	0.1	0.063	0	0	N	--	--
Anthracene	17000	103	0	<0.1	ND	<0.5	ND	0.085	0.05	0.031	0	0	N	--	--
Benz[a]anthracene	1.1	103	2	<0.1	0.1	<0.5	0.1	0.056	0.05	0.032	0	0	N	--	--
Benz[a]pyrene	0.11	103	2	<0.05	0.07	<0.26	0.1	0.03	0.025	0.018	3	3	N	--	--
Benz[b]fluoranthene	1.1	103	2	<0.1	0.1	<0.5	0.1	0.056	0.05	0.032	0	0	N	--	--
Benz[e]fluoranthene	11	103	1	<0.1	0.1	<0.5	0.1	0.056	0.05	0.032	0	0	N	--	--
Chrysene	110	103	2	<0.1	0.1	<0.5	0.1	0.056	0.05	0.032	0	0	N	--	--
Fluoranthene	0.028	103	2	<0.1	0.1	<0.5	0.1	0.056	0.05	0.032	0	0	N	--	--
Fluoranthene	2400	103	3	<0.05	ND	<0.26	ND	0.029	0.025	0.016	103	103	N	--	--
Fluorene	2300	103	0	<0.1	0.2	<0.5	0.3	0.061	0.05	0.044	0	0	N	--	--
Indeno[1,2,3-c,d]pyrene	1.1	103	1	<0.06	0.1	<0.5	0.1	0.055	0.05	0.031	0	0	N	--	--
Phenanthrene	1800	103	3	<0.1	0.1	0.7	0.7	0.062	0.05	0.07	0	0	N	--	--
Pyrene	1800	103	3	<0.1	0.1	0.7	0.7	0.062	0.05	0.07	0	0	N	--	--

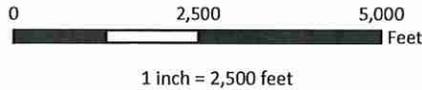
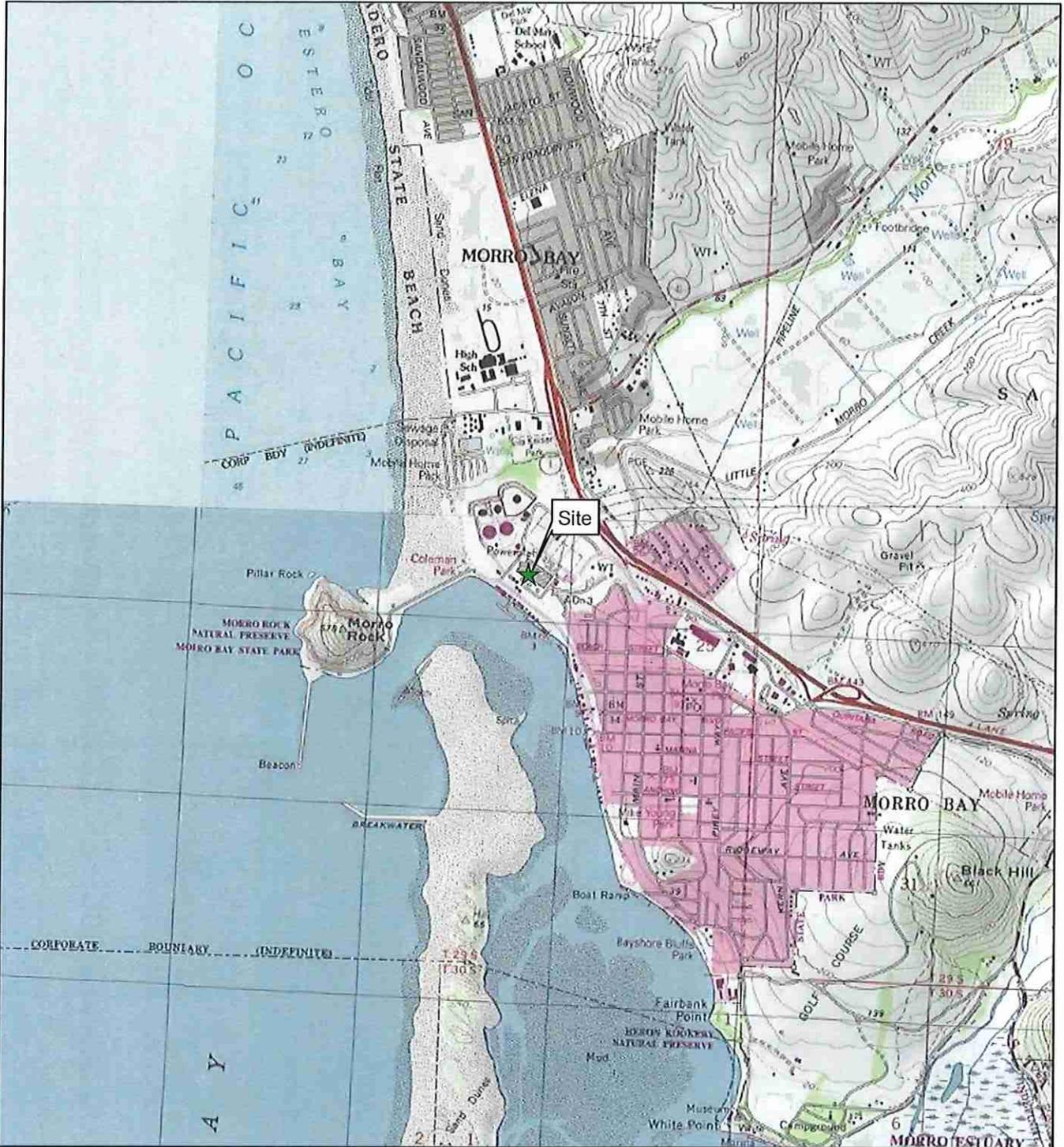
Notes:
 95UCL calculations were performed using ProUCL v. 5.1
 * = 95UCL calculations were performed, but number of detections is low (<10)
 > = greater than
 mg/kg = milligrams per kilogram
 95UCL = 95-percent upper confidence limit of the mean
 SSL = site-specific soil screening level
 TPH = total petroleum hydrocarbons
 TPH-m = middle-distillate range TPH
 TPH-r = residual-range TPH
 TPH-u = undifferentiated TPH
 NC = not calculated; too few detections to calculate 95UCL
 -- = not calculated because maximum detect is not greater than SSL

Figures

- 1 Site Location
- 2 Former Morro Bay Power Plant and Location of Former Tank Farm



File: K:\GIS\Prj\0323.001 Morro Bay Power Plant\WXDs\Fig1_Site Location_TK.mxd 7/15/2019 Created by: Initial Checked by: Initial Coordinate System: NAD 1983 StatePlane California V FIPS 0405 Feet



Legend

★ Site Location

Base Map: USGS CAYUCOS, CA 7.5 Minute Quadrangle.

SAFETY FIRST



CLIENT: Vista Energy Corporation

PROJECT: Morro Bay Power Plant

PROJECT NUMBER: 0323.001.001

Site Location

FIGURE 1

