

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

ORDER No. R2-2016-0013

**ADOPTION OF SITE CLEANUP REQUIREMENTS for:
*PHILLIPS 66 COMPANY***

for the property located at:

*CONCORD NAVAL WEAPONS STATION AND 330 HOLLY DRIVE
CONCORD, CONTRA COSTA COUNTY*

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter Regional Water Board), finds that:

1. **Site Location:** The site is located on the southern boundary of the Concord Naval Weapons Station (CNWS) and the adjacent former residential property to the south at 330 Holly Drive, Concord (Site), which is part of a residential area of single family houses (Figure 1). The Site is about 1,000 feet north of Kirker Pass Road. The Phillips 66 Company's (Phillips 66) Line 200 oil pipeline includes a 7-mile-long segment that runs parallel to the southern boundary of CNWS. Phillips 66 Line 200 is a 16-inch diameter steel oil pipeline, buried approximately 6 feet below ground surface (bgs) (top of pipe) that runs along the southern boundary of CNWS between two parallel pipelines. Shell Oil Company (Shell) and Kinder Morgan Energy Partners, L.P. (KM), also operate pipelines adjacent to Phillips 66 Line 200.
2. **Release History:** On November 7, 2011, a leak was identified in Phillips 66 Line 200. The leak was discovered by Phillips 66 personnel investigating complaints from nearby residents about odors emanating from the vicinity of the Site. Following the discovery, Phillips 66 immediately shut down the pipeline and undertook an emergency response. Subsequent investigations revealed that the leaked oil or light non-aqueous phase liquid (LNAPL) had impacted surface and subsurface soil, soil vapor, and groundwater. Some of the LNAPL migrated underground from CNWS to the adjacent 330 Holly Drive property to the south, which was then being used as a residence, resulting in soil, soil vapor, and groundwater contamination on both the CNWS and 330 Holly Drive properties.
3. **Site Ownership History:** CNWS is owned by the United States Department of the Navy and was commissioned in 1942. Phillips 66 purchased the 330 Holly Drive property (APN 117-070-009) effective August 4, 2015, from Mr. Mark McCullah and Ms. Marcy McCullah, who resided there prior to and subsequent to the pipeline release in 2011.
4. **Named Discharger:** Phillips 66 is named as the Discharger because it operated Phillips 66 Line 200 during or after the time of the activity that resulted in the discharge, had knowledge of the discharge or the activities that caused the discharge, and had the legal ability to prevent the discharge.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the State, the Regional Water Board will consider adding those parties' names to this Order.

5. **Regulatory Status:** The Site is currently not subject to Regional Water Board order.
6. **Site Hydrogeology:** The Site is located to the southwest of a line of hills that runs from the northwest to the southeast. Surface drainage at the Site currently flows to the southeast through a low-lying area. The soils at CNWS and the eastern portion of the 330 Holly Drive property consist of silt and clay from the surface to about 20 feet below ground surface (bgs). There are about 3 to 5 feet of fill material overlying the silt and clay on the western portion of the 330 Holly Drive property. Depth to groundwater at the Site varies from about 7 to 12 feet bgs. The horizontal hydraulic gradient direction is toward the south and has been generally consistent.
7. **Site Wetlands:** Seasonal wetlands were present in the area of the three pipelines. These wetlands were damaged as part of the emergency response work. Some restoration work has been undertaken, but, as part of the planned remediation, this area will be excavated again. As part of the planned remediation of the Site, Phillips 66 is required to prepare and implement a wetland mitigation plan acceptable to both the Regional Water Board and the U.S. Army Corps of Engineers (Corps). Site remediation and mitigation require a federal Clean Water Act section 404 permit from the Corps and a section 401 water quality certification from the Regional Water Board prior to implementation. The Regional Water Board issued water quality certification on May 23, 2016. The wetland mitigation plan is required by this Order as Mitigation Measure BIO-4, which is described in Attachment A. In addition, the U.S. Fish and Wildlife Service (USFWS), in its June 28, 2013, letter “Biological Opinion,” determined that a take of threatened and endangered species (Central California tiger salamander and the California red-legged frog) has likely occurred, and associated mitigation is also required by this Order as Mitigation Measures BIO-6 and BIO-7.
8. **Remedial Investigation:** Between 2012 and 2014, extensive investigations were performed at the Site that determined the extent of petroleum hydrocarbons in soil, soil gas, and groundwater (Figure 2). Contamination is present at both the CNWS and 330 Holly Drive properties but has not spread beyond those properties. Site soil is impacted in the vicinity of the pipeline release and in subsurface soil on the 330 Holly Drive property to the north of the house. LNAPL is present in this same area and may extend beneath the garage and adjoining house. The dissolved phase groundwater plume extends beneath the garage and the house towards the southern property edge but has not migrated off of the 330 Holly Drive property at this time.

Sampling to support a vapor intrusion evaluation for the house with crawlspace and the attached slab-on-grade garage was performed in 2013 and 2014. Sampling data indicate that there was no significant health risk, and vapor intrusion may not be occurring at all.
9. **Interim Remedial Measures:** Phillips 66 conducted an emergency response between November 2011 and February 2012 to repair the pipeline and excavate soil contamination along the pipeline alignment. About 3,800 cubic yards of soil and debris were removed and disposed during this work, and the pipeline was returned to service.

In 2013, Phillips 66 installed a new municipal water supply to the residence on the 330 Holly Drive property, which previously used a private onsite groundwater well for domestic and irrigation supply. The new water supply, installed as a protective measure, included a water meter, backflow prevention, new piping, and a booster pump. The new municipal water supply provided both domestic and irrigation water for the residence, and the private well was

removed from service. The private well was sampled periodically prior to and following new municipal service; no impacts to groundwater quality were observed at the private well.

In 2013, a groundwater interim remedial measure (IRM) was implemented to extract groundwater and LNAPL from a single extraction well downgradient of the release area. Also, an oxygen-release compound was injected near the downgradient extent of the groundwater plume on the 330 Holly Drive property to accelerate natural biodegradation in groundwater and prevent migration of the groundwater plume off of the 330 Holly Drive property. In 2014, the groundwater extraction system was augmented with two additional groundwater extraction wells. A water treatment system, located at the 330 Holly Drive property, removes petroleum constituents from extracted groundwater, and the treated effluent is discharged to the Central Contra Costa Sanitary District sewer system under a special discharge permit. Based on the results of recent groundwater monitoring, the downgradient extent of the groundwater plume has receded and concentrations of petroleum constituents are declining.

In October 2014, Phillips 66 installed and began operation of a temporary fan-powered ventilation system in the crawlspace of the house to ensure the prevention of vapor intrusion into the house. In January 2015, Phillips 66 installed and began operation of an active, permanent ventilation system in the crawlspace of the house. This system was deactivated in August 2015 after Phillips 66 became the owner of the 330 Holly Drive property, and the house no longer was used as a residence.

The residence, pump house, and associated hardscape were demolished in early April 2016, and associated utilities were abandoned.

10. **Adjacent Sites:** Although CNWS is undergoing investigation and cleanup related to past use by the Navy, the closest CNWS cleanup site is the Site 22A Group 5 Magazine Area, which is greater than 1,500 feet north of the Phillips 66 Line 200 release area. The chemical of concern at that site is arsenic in surface soil, which is unrelated to the Phillips 66 Line 200 spill. Therefore, Phillips 66 is not coordinating cleanup with the Navy, and non-spill related pollutants are not believed to be present in the soil.
11. **Remedial Action Plan:** Phillips 66 submitted the *Revised Excavation Interim Remedial Measure Work Plan* dated October 24, 2014, and Regional Water Board staff concurred with the plan in a letter dated January 15, 2015. On January 14, 2016, Phillips 66 submitted *Addendum 01 to Revised Excavation Interim Remedial Measure Work Plan*, and Regional Water Board staff concurred with the addendum and revised plan in a letter dated January 22, 2016. The plan describes the proposed soil cleanup levels and a plan to excavate the majority of the petroleum-contaminated soil beneath CNWS and the 330 Holly Drive property (Figure 3). The Site will be cleaned up commensurate with the future long-term use of the Site as open space and be protective of the utility worker. The excavation is planned to a maximum depth of 16 feet bgs. The total estimated volume of soil to be excavated is 10,440 cubic yards. This includes an estimated 8,230 cubic yards of petroleum-contaminated soil to be removed for offsite disposal at an appropriate facility and an estimated 2,210 cubic yards of fill soil on the 330 Holly Drive property that is not contaminated. The fill soil overlies the petroleum-contaminated soil and must be removed to access the petroleum-contaminated soil. The removed fill soil will be segregated and reused at the 330 Holly Drive property as backfill.

12. **Basis for Cleanup Levels**

- a. **General:** State Water Resources Control Board (State Water Board) Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge. It requires maintenance of background levels of water quality unless a lesser water quality is consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in exceedance of applicable water quality objectives. This Order and its requirements are consistent with Resolution No. 68-16 because the cleanup levels established in this Order are consistent with the maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses of such water, and will not result in exceedance of applicable water quality objectives. The cleanup levels are consistent with the maximum benefit to the people of the State because they will adequately protect human health in the event of direct contact with soil or groundwater and because, as a result of the residual contamination, the Site will be preserved as open space, which provides aesthetic and recreation benefits of its own. The cleanup levels will not adversely affect the current or future beneficial uses of groundwater or surface water at the Site, including use as drinking water, even though the groundwater is no longer being used for this purpose. In addition cleanup will achieve water quality objectives in a reasonable timeframe.

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges under Water Code Section 13304," applies to this discharge. It directs the Regional Water Boards to set cleanup levels equal to background water quality or the best water quality that is reasonable, if background levels cannot be restored. Here, cleanup is expected to achieve background levels of water quality in a reasonable timeframe. In addition, the cleanup levels established by this Order will immediately achieve the highest water quality reasonable and will be both protective of human health and consistent with the continued use of this Site as open space. Therefore, this Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

- b. **Beneficial Uses:** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Regional Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Regional Water Board and approved by the State Water Board, Office of Administrative Law, and U.S. EPA, where required.

Regional Water Board Resolution No. 89-63, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high total dissolved solids, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

- o Municipal and domestic water supply
- o Industrial process water supply
- o Industrial service water supply
- o Agricultural water supply

At present, there is an inactive domestic water well on the 330 Holly Drive property. Phillips 66 connected the property to municipal water supply in 2013. There is no known current or planned use of groundwater underlying the Site for any of the above purposes.

The existing and potential beneficial uses of Mt. Diablo Creek include:

- o Cold freshwater and warm freshwater habitat
- o Fish migration and spawning
- o Preservation of rare and endangered species
- o Wildlife habitat
- o Recreation

- c. **Basis for Interim Groundwater Cleanup Levels:** The interim groundwater cleanup levels for the Site and downgradient properties are intended to protect beneficial uses of groundwater and will result in acceptable residual risk to human health, safety, and the environment. The interim groundwater cleanup levels are selected from the Regional Water Board's February 2016 Environmental Screening Levels (ESLs) and are listed in section B.2. Phillips 66 may propose site-specific groundwater cleanup levels for Regional Water Board staff concurrence.
 - d. **Basis for Soil Cleanup Levels:** The soil cleanup levels were proposed by Phillips 66 in the *Addendum 01 to Revised Excavation Interim Remedial Measure Work Plan* dated January 14, 2016. Regional Water Board staff concurred with the soil cleanup levels in a letter dated January 22, 2016. The soil cleanup levels are intended to protect against human health risk (direct contact and outdoor air exposure) and migration of LNAPL. The soil cleanup levels are listed in section B.3.
13. **Future Changes to Cleanup Levels:** If new technical information indicates that the established cleanup levels are significantly over-protective or under-protective, the Regional Water Board will consider revising those cleanup levels.
14. **Risk Management:** The Regional Water Board considers the following human health risks to be acceptable at remediation sites: a cumulative hazard index of 1.0 or less for non-carcinogens and a cumulative excess cancer risk of 10^{-6} to 10^{-4} or less for carcinogens. The risk screening level evaluation for this Site found contamination-related risks in excess of these acceptable levels. Active remediation will reduce these risks over time.
15. **Reuse or Disposal of Extracted Groundwater:** Regional Water Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible.

16. **Basis for 13304 Order:** Water Code section 13304 authorizes the Regional Water Board to issue orders requiring a discharger to cleanup and abate waste where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.
17. **Cost Recovery:** Pursuant to Water Code section 13304, the Discharger is hereby notified that the Regional Water Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this order.
18. **California Safe Drinking Water Policy:** It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes.

This Order promotes that policy by requiring discharges to be remediated to meet maximum contaminant levels, which are designed to protect human health and ensure that water is safe for domestic use, are met in existing and future supply wells. In addition, Phillips 66 will destroy the existing domestic supply well on the 330 Holly Drive property. All other supply wells are distant from the Site and will not be impacted by any residual contamination. Following removal of the contaminated soil at the Site, which is acting as a pollution source to groundwater, the remaining groundwater contamination is expected to remediate over time through natural microbial biodegradation.

19. **California Environmental Quality Act Compliance:** On January 22, 2016, Regional Water Board staff provided concurrence with an October 24, 2014, *Revised Excavation Interim Remedial Measure Work Plan* and a January 14, 2016, *Addendum 01 to Revised Excavation Interim Remedial Measure Work Plan*.

The Regional Water Board, as lead agency for this project, prepared an Initial Study, Mitigated Negative Declaration (MND), and Mitigation Monitoring and Reporting Program (MMRP), which evaluate and address the interim remedial measure work plan for the Site. These documents have been circulated for public review in compliance with CEQA and applicable regulations. On April 1, 2016, the Executive Officer of the Regional Water Board adopted the MND and MMRP as Resolution No. R2-2016-0012, finding that they reflect the independent judgment and analysis of the Regional Water Board and that there is no substantial evidence in the record that the project will have significant impacts, if mitigated in compliance with the MMRP (Cal. Code Regs., tit. 14 § 15074(b)-(d)). The MND and all supporting documentation and records are available at the Regional Water Board's office and on the GeoTracker publically-accessible database.

20. **Notification:** The Regional Water Board has notified the Discharger and all interested agencies and persons of its intent under Water Code section 13304 to prescribe site cleanup requirements for the discharge and has provided them with an opportunity to submit their written comments.

IT IS HEREBY ORDERED, pursuant to sections 13304 and 13267 of the California Water Code, that the Discharger (or its agents, successors, or assigns) shall clean up and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner that will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.
2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.
3. Activities associated with the subsurface investigation and cleanup that will cause significant adverse migration of wastes or hazardous substances are prohibited.
4. Filling of additional wetlands or waters of the State without the Regional Water Board’s certification of water quality impacts pursuant to section 401 of the Clean Water Act is prohibited.
5. Stormwater that comes in contact with contaminated soil shall not be discharged to waters of the State or of the United States except as authorized under the statewide Construction Activities Storm Water General Permit (Order No. 2009-0009-DWQ).

B. REMEDIAL ACTION PLAN AND CLEANUP LEVELS

Presented below are both interim cleanup levels proposed by Regional Water Board staff and final cleanup proposed by Phillips 66 with concurrence from Regional Water Board staff:

1. **Implement Remedial Action Plan:** The Discharger shall implement the remedial action plan described in finding 11.
2. **Interim Groundwater Cleanup Levels:** The following interim groundwater cleanup levels shall be met in all wells identified in the attached Self-Monitoring Program:

Constituent	Level (µg/L)	Basis
Gasoline (TPH-G) (C5-C12)	100	Protection of groundwater as a source or potential source of drinking water; ESLs
Diesel Fuel (TPH-D)* (C12-C22) and Motor Oil (TPH-MO)* (C23-C36)	100	Protection of groundwater as a source or potential source of drinking water; ESLs. TPH-D and TPH-MO are to be added.
Benzene	1	Drinking water; CA MCL
Ethylbenzene	300	Drinking water; CA MCL
Naphthalene	0.17	Protection of groundwater as a source or potential source of drinking water; ESLs

ESLs – Regional Water Board Environmental Screening Levels (February 2016)

CA MCLs – California Maximum Contaminant Levels

3. **Soil Cleanup Levels:** The following soil cleanup levels shall be met in all onsite soils:

Constituent	Level (mg/kg)	Basis
Surface Soil (less than or equal to 10 feet bgs)		
Benzene	2.5	Outdoor Air; site-specific evaluation
Ethylbenzene	162	Direct Contact; LTUCP
Naphthalene	219	Direct Contact; LTUCP
PAHs (BaP equivalent)	4.5	Direct Contact; LTUCP
Total TPH*	2,000	Mobile or migrating LNAPL; site-specific evaluation
Deep Soil (greater than 10 feet bgs)		
Total TPH	2,000	Mobile or migrating LNAPL; site-specific evaluation

* Total TPH is the sum of TPH Gasoline (C5 to C12); TPH Diesel** (C12 to C22); and TPH Motor Oil** (C23 to C36)

** – without silica gel cleanup

BaP – Benzo(a)pyrene equivalent

bgs – below ground surface

ESLs – Regional Water Board Environmental Screening Levels (February 2016)

LNAPL – Light, non-aqueous phase liquid

LTUCP – State Water Resources Control Board Low Threat Underground Storage Tank Case Closure Policy (August 2012)

PAHs – Polycyclic aromatic hydrocarbons

C. TASKS

1. SOIL REMEDIAL ACTION WORK PLANS

COMPLIANCE DATE: **June 15, 2016**

Submit a technical report(s) acceptable to the Executive Officer presenting a plan of details of the excavation implementation, including: health and safety plan, community protection plan, air monitoring plan, odor control plan, dust control plan, stormwater pollution prevention plan, excavation and stockpile management, confirmation sampling, offsite materials transport and disposal, import and reuse of soils, and dewatering and fluids management.

2. IMPLEMENTATION OF MITIGATION MEASURES

COMPLIANCE DATE: **March 1, 2017**

Regional Water Board staff prepared an Initial Study and Mitigated Negative Declaration, including a Mitigation Monitoring and Reporting Program that was adopted by the Regional

Water Board on April 1, 2016. Phillips 66 concurs that all of the mitigation measures can be included as requirements of this Order. The required mitigation measures are included as Attachment A.

3. **COMPLETION OF SOIL REMEDIAL ACTION**

COMPLIANCE DATE: **March 1, 2017**

Submit a technical report acceptable to the Executive Officer documenting completion of the excavation of soil, disposal, backfilling, and site restoration. The report shall summarize implementation of the work required by Task 1.

4. **GROUNDWATER REMEDIAL ACTION WORK PLAN**

COMPLIANCE DATE: **May 15, 2017**

Submit a technical report acceptable to the Executive Officer containing a plan to monitor groundwater following the completion of Task 1 to assess whether contaminant concentrations at the Site are stable or declining. The plan shall specify post-IRM monitoring wells as required by Section 2 of the Self-Monitoring Program. If required post-IRM monitoring wells are damaged or temporarily abandoned, then propose the location of replacement monitoring wells. A technical report shall summarize existing and anticipated replacement well construction details, proposed analytes, and the estimated length of time necessary to monitor to establish a trend after completion of Task 1. The plan must contain an estimate of the time needed to achieve the interim groundwater cleanup levels.

5. **COMPLETION OF GROUNDWATER REMEDIAL ACTION**

COMPLIANCE DATE: **Acceptable date to be proposed by Discharger in Task 4. Requires Executive Officer concurrence.**

Submit a technical report acceptable to the Executive Officer demonstrating that that interim groundwater cleanup levels have been achieved at the Site.

6. **FAILED REMEDIATION CONTINGENCY WORK PLAN**

COMPLIANCE DATE: **60 days after receiving notification from Executive officer that a task has not been completed.**

In the event that the remediation efforts do not achieve the remedial goals, and the Discharger is not able to successfully complete Tasks 1 through 5, this work plan will be required. Successful completion of Tasks 1 through 5 will serve as completion of this task.

7. **DOMESTIC WELL DESTRUCTION WORK PLAN**

COMPLIANCE DATE: **June 30, 2016**

Submit a technical report acceptable to the Executive Officer containing a plan to properly destroy the inactive private water well on the 330 Holly Drive property.

8. **DOMESTIC WELL DESTRUCTION REPORT**

COMPLIANCE DATE: **December 15, 2016**

Submit a technical report acceptable to the Executive Officer documenting the destruction of the inactive private water well on the 330 Holly Drive property.

D. **PROVISIONS**

1. **No Nuisance:** The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in Water Code section 13050(m).
2. **Good Operation and Maintenance (O&M):** The Discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.
3. **Cost Recovery:** The Discharger shall be liable, pursuant to Water Code section 13304, to the Regional Water Board for all reasonable costs actually incurred by the Regional Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Water Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the Discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.
4. **Access to Site and Records:** In accordance with Water Code section 13267(c), the Discharger shall permit the Regional Water Board or its authorized representative:
 - a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.
 - b. Access to copy any records required to be kept under the requirements of this Order.
 - c. Inspection of any monitoring or remediation facilities installed in response to this Order.
 - d. Sampling of any groundwater or soil that is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the Discharger.
5. **Self-Monitoring Program:** The Discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor / Consultant Qualifications:** All technical documents shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.
7. **Lab Qualifications:** All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Regional Water Board using approved U.S. EPA methods for the type of analysis to be performed. Quality assurance/quality control (QA/QC) records shall be maintained for Regional Water Board review. This provision does not apply to analyses that can only reasonably be performed onsite (e.g., temperature).
8. **Document Distribution:** An electronic and paper version of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided to the Regional Water Board, and electronic copies shall be provided to the following agency:

U.S. Navy Base BRAC PMO West
Attention: Mark Smits, BRAC Environmental Coordinator
NWS Concord
33000 Nixie Way, Bldg 50
San Diego, CA 92147
(619) 524-4610; mark.smits@navy.mil

The Executive Officer may modify this distribution list as needed.

Electronic copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be uploaded to the State Water Board's GeoTracker database within five business days after submittal to the Regional Water Board. Guidance for electronic information submittal is available at:

http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal

9. **Reporting of Changed Owner or Operator:** The Discharger shall file a technical report on any changes in contact information, Site occupancy or ownership associated with the Site described in this Order.
10. **Reporting of Hazardous Substance Release:** If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the Discharger shall report such discharge to the Regional Water Board by calling (510) 622-2369.

A written report shall be filed with the Regional Water Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified.

This reporting is in addition to reporting to the California Office of Emergency Services required pursuant to the Health and Safety Code.

11. Periodic SCR Review: The Regional Water Board will review this Order periodically and may revise it when necessary. The Discharger may request revisions and upon review the Executive Officer may recommend that the Regional Water Board revise these requirements.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on June 6, 2016.

Bruce H. Wolfe
Executive Officer

=====
Failure To Comply With The Requirements Of This Order May Subject You To Enforcement Action,
Including But Not Limited To: Imposition Of Administrative Civil Liability Under Water Code
Sections 13268 Or 13350, Or Referral To The Attorney General For Injunctive Relief Or Civil Or
Criminal Liability
=====

Attachments: Self-Monitoring Program
 A – Mitigation Measures

Figure 1 – Site Location Map
Figure 2 – Site Plan (Sampling Location Map)
Figure 3 – Soil Excavation Limits

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

SELF-MONITORING PROGRAM for:

PHILLIPS 66 COMPANY

for the property located at:

*CONCORD NAVAL WEAPONS STATION AND 330 HOLLY CREEK PLACE
CONCORD, CONTRA COSTA COUNTY*

1. **Authority and Purpose:** The Regional Water Board requests the technical reports required in this Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2016-0013 (site cleanup requirements).
2. **Monitoring:** The Discharger shall measure groundwater elevations quarterly in all monitoring wells, which may need to be destroyed and replaced during the excavation required by Order No. R2-2016-0013, and shall collect and analyze representative samples of groundwater according to the following schedule, after excavation is complete:

Well #	Sampling Frequency	Analyses
MW-34, MW-41, MW-42, MW-43, MW-46, and MW-49	Quarterly	TPH-G by 8015M, TPH-D by 8015M, TPH-MO by 8015M, BTEX, and naphthalene by 8260B

Key: SA = Semi-Annually (May and November)
TPH-G = total petroleum hydrocarbons as gasoline
TPH-D = total petroleum hydrocarbons as diesel (with and without silica gel cleanup)
TPH-MO = total petroleum hydrocarbons as motor oil (with and without silica gel cleanup)
BTEX = benzene, toluene, ethylbenzene, and total xylenes
8015M = U.S. EPA method 8015M or equivalent
8260B = U.S. EPA method 8260B or equivalent

- a. Measure groundwater elevation quarterly in all monitoring wells (February, May, August, and November).
- b. Measure thickness of free product in wells that contain free product or sheen. These wells will not be sampled; analytical data from such wells do not represent dissolved concentrations.
- c. Sheen will be confirmed using a clean disposable bailer. Groundwater samples are to be collected using the standard three well volume purge procedures.

The Discharger shall sample any new monitoring or extraction wells quarterly and analyze groundwater samples for the same constituents as shown in the above table. The Discharger may propose changes in the above table; any proposed changes are subject to Regional Water Board staff approval.

3. **Quarterly Monitoring Reports:** The Discharger shall submit self-monitoring reports (SMRs) to Regional Water Board staff in accordance with the following schedule. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable.

Reporting Frequency	Report Due Dates
Semi-Annual	February 15, August 15

The reports shall include:

- a. **Transmittal Letter:** The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the Discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.
- b. **Graphic Presentation:** The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:
 - (1) Plan-view maps showing all monitoring and sampling locations, surface water bodies, and the Site's boundaries;
 - (2) Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing calculated groundwater gradients and flow directions under/around the Site, based upon the present water level elevations and pertinent visual observations;
 - (3) Iso-concentration contour maps displaying analyte concentrations and sample locations for each constituent of concern;
 - (4) Concentration vs. time graphs for key sampling parameters for select sampling locations; and
 - (5) Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this Order.
- c. **Tabular Presentation:** The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:
 - (1) Well designations
 - (2) Well location coordinates (latitude and longitude)
 - (3) Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation)
 - (4) Groundwater depths

- (5) Groundwater elevations
 - (6) Isoconcentration contours for each detected constituent of concern, in consultation with Regional Water Board staff
 - (7) Horizontal groundwater gradients
 - (8) Vertical groundwater gradients (including comparison wells from different zones) when appropriate
 - (9) Phase-separated product elevations
 - (10) Phase-separated product thicknesses
 - (11) Current analytical results (including analytical method and detection limits for each constituent)
 - (12) Historical analytical results (including at least the past five years unless otherwise requested)
 - (13) Measurement dates
 - (14) Groundwater extraction, including:
 - (a) Average daily extraction rate
 - (b) Total volume extracted for monitoring period
 - (c) Cumulative total volume extracted since system inception
 - (15) Contaminant mass removal, including:
 - (a) Average daily removal rate
 - (b) Total mass removed for monitoring period
 - (c) Cumulative total mass removed since system inception
- d. **Discussion:** Discussion of the following information, based on field and laboratory data results, shall be provided in each SMR:
- (1) Data Interpretations
 - (2) Conclusions
 - (3) Recommendations
 - (4) Newly implemented or planned investigations & remedial measures
 - (5) Data anomalies
 - (6) Variations from protocols
 - (7) Condition of wells
 - (8) Explanation why monitoring could not be performed at any required location
- e. **Appendices:** The following information shall be provided as appendices in electronic format (PDF format). Hard copies of the following information shall be submitted only if requested by Regional Water Board staff:
- (1) New boring and well logs
 - (2) Method and time of water level measurements (field data sheets)

- (3) Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity, calibration of the field equipment, pH, temperature, conductivity, and turbidity measurements, and method of disposing of the purge water
 - (4) Sampling procedures, field and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations
 - (5) Documentation of laboratory results, analytical methods, detection limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.
 - (6) Copies of TPH analysis chromatograms for the samples and laboratory standards and blanks.
4. **Violation Reports:** If the Discharger violates requirements in the Site Cleanup Requirements, then the Discharger shall notify the Regional Water Board caseworker by telephone as soon as practicable once the Discharger has knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the Discharger to submit a separate technical report on the violation within five working days of telephone notification.
5. **Other Reports:** The Discharger shall notify the Regional Water Board in writing prior to any Site activities, such as construction or underground tank removal, that have the potential to cause further migration of contaminants or that would provide new opportunities for Site investigation.
6. **Record Keeping:** The Discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Regional Water Board upon request.
7. **SMP Revisions:** Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the Discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.
8. **Electronic Reporting:** All SMRs submitted pursuant to this SMP shall be submitted as electronic files in PDF format. The Regional Water Board has implemented a document imaging system, which is ultimately intended to reduce the need for printed report storage space and streamline the public file review process. Documents in the imaging system may be viewed, and print copies made, by the public, during file reviews conducted at the Regional Water Board's office. PDF files can be created by converting the original electronic file format (e.g., Microsoft Word) and/or by scanning printed text, figures and tables.

Upon request by Regional Water Board staff, monitoring results, including water level measurements, sample analytical results, coordinates, elevations, etc., shall be provided electronically in Microsoft Excel® or similar spreadsheet format. This format facilitates data computations and/or plotting that Regional Water Board staff may undertake during their

review. Data tables submitted in electronic spreadsheet format will not be included in the case file for public review as long as a PDF version is included.

All electronic files shall be submitted via the Regional Water Board's GeoTracker website (<http://geotracker.waterboards.ca.gov>). Files may additionally be sent on CD or via email (only if the file size is less than 10 MB). CD submittals may be included with a print report. Email notification shall be provided to Regional Water Board staff whenever a file is uploaded to GeoTracker.

Attachment A - Mitigation Measures

Air Quality

Mitigation Measure AQ-1: *Bay Area Air Quality Management District (BAAQMD) Required Dust Control Measures:* The contractor shall reduce remediation-related air pollutant emissions by implementing BAAQMD's basic fugitive dust control measures, including:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- A publically visible sign shall be posted with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.
- Stockpiles and waste containers (e.g. trucks, roll-off bins) shall be covered at all times when not in use. Additionally, any open excavations with impacted soil shall be covered at the end of the day prior to leaving the site. Any exposed non-contaminated soil shall be wetted to prevent fugitive dust.
- Perimeter monitoring for fugitive dust shall be performed during all soil moving activities.
- If dust from activities on the site is observed, immediate corrective actions shall be taken to minimize dust generation using the measures listed above and/or the work shall be temporarily halted until more favorable conditions exist.

Mitigation Measure AQ-2: *BAAQMD Required Basic Exhaust Emissions Reduction Measures:* The contractor shall implement the following measures during excavation to reduce remediation-related exhaust emissions:

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control

measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for workers at all access points.

- All off-road equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Mitigation Measure AQ-3: *BAAQMD Enhanced Exhaust Emissions Reduction Measures:* The contractor shall implement the following measures during excavation to further reduce remediation-related exhaust emissions:

All off-road equipment greater than 25 horsepower (hp) and operating for more than 20 total hours over the entire duration of remediation activities shall meet the following requirements:

- Where access to alternative sources of power are available, portable diesel engines shall be prohibited; and
- All off-road equipment shall have:
 - a) Engines that meet or exceed either U.S. EPA or CARB Tier 2 off-road emission standards, and
 - b) Engines that are retrofitted with a CARB Level 2 Verified Diesel Emissions Control Strategy (VDECS). Acceptable options for reducing emissions include the use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, add-on devices such as particulate filters, and/or other options as such are available.

Mitigation Measure AQ-4: *Implement a Health and Safety Plan.* The contractor shall implement an air monitoring program to identify required health and safety procedures, thresholds for action, equipment, and frequency of monitoring. VOC concentrations shall be measured continually during all excavation activities.

Mitigation Measure AQ-5: *Implement an Odor Control Plan.* The construction contractor shall prepare and implement an odor control plan to identify measures to prevent on- and offsite odor nuisances throughout implementation of the project. At a minimum, required procedures shall include: (a) limiting the area of open excavations and (b) shrouding open excavations with plastic sheeting or other covers. If odors develop and cannot otherwise be controlled, additional means to eliminate odor nuisances would include: (c) direct load-out of soils to trucks for off-site disposal or (d) use of the same technique as employed during the emergency response activities, namely utilizing a high pressure washer with a vapor suppressant (mixture of water, Simple Green, and Sulfree). If nuisance odors are identified during remediation, work shall be halted and the

source of odors would be identified and corrected. Work shall not resume until all nuisance odors have been abated.

Biological Resources

Mitigation Measure BIO-1: To compensate for the loss of one “protected” California black walnut, in accordance with the Concord Municipal Code, three five-gallon, California black walnuts will be planted on the project site as the smaller size will ensure higher odds of survival at the project site.

Additional compensatory mitigation includes that the 330 Holly Drive property will be restored to a natural landscape condition. All structures will be removed down to the dirt. The vegetable beds and landscape vegetation will be removed from a drainage swale on this property. In addition, the applicant will implement a native oak woodland planting plan on the western one half of the private property where the structures are being removed.

Upon completion of the remediation project, the 330 Holly Drive property will be preserved in perpetuity via recordation of an open space Perpetual Deed Restriction that is recorded on the title of the private property. The native oak tree restoration project will create a wildlife oasis between residential subdivisions south of the former 330 Holly Drive Property and the CNWS. Monk&Associates also confirmed in a meeting with the City of Concord on September 18, 2015, that under the City of Concord Reuse Plan for the CNWS, the area of the CNWS affected by the proposed remediation project, and significant contiguous acreage to the north of this area, will be deeded directly from the U.S. Navy to the East Bay Regional Park District to be managed as open space/park land. Thus, in consideration that an existing conservation easement occurs immediately south of the 330 Holly Drive property, and 1.4 acres of the 330 Holly Drive property will be permanently protected as open space via the recordation of an open space Perpetual Deed Restriction, the restored and preserved private property will add to a significant regional open space.

Mitigation Measure BIO-2: In order to avoid impacts to nesting birds, a nesting survey should be conducted 15 days prior to commencing with construction work or tree removal if this work would commence between February 1st and August 31st. The nesting survey should include examination of all trees within 200 feet of the entire project site (i.e., within a zone of influence of nesting birds), not just trees slated for removal. The zone of influence includes those areas off the project site where birds could be disturbed by earth- moving vibrations and/or other construction-related noise. A nest survey report should be prepared upon completion of the survey and provided to the City of Concord with any recommendations required for establishment of protective buffers as necessary to protect nesting birds.

If birds are identified nesting on or within the zone of influence of the construction project, a qualified biologist should establish a temporary protective nest buffer around the nest(s). The nest buffer should be staked with orange construction fencing or orange lath staking. The buffer must be of sufficient size to protect the nesting site from construction related disturbance and should be established by a qualified ornithologist or biologist with extensive experience working with nesting birds near and on construction sites. Nesting buffers can be up to 50 feet from the nest site or nest tree dripline for small birds and up to 300 feet for sensitive nesting birds that include several raptor species known from the region of the site. The amount, extent, and timing of disturbance are all relative parameters that must be evaluated by a qualified ornithologist to establish an effective nesting buffer that will prevent harm to the eggs and/or young. Upon completion of nesting surveys, if nesting birds are identified on or within a zone of influence of the site, a qualified ornithologist/biologist that frequently works with nesting birds should prescribe adequate nesting buffers to protect the nesting birds from harm.

No construction or earth-moving activity should occur within any established nest protection buffer prior to September 1 unless it is determined by a qualified ornithologist/biologist that the young have fledged (that is, left the nest) and have attained sufficient flight skills to avoid project construction zones, or that the nesting cycle is otherwise completed. In the region of the project site, most species complete nesting by mid-July. This date can be significantly earlier or later, and would have to be determined by the qualified biologist. At the end of the nesting cycle, and abandonment of the nest by its occupants, as determined by a qualified biologist, temporary nest buffers may be removed and construction may commence in established nesting buffers without further regard for the nest site.

Mitigation Measure BIO-3: In order to avoid impacts to roosting special-status bats, a biologist should survey trees and buildings on the project site 15 days prior to commencing with any removal or demolition. All bat surveys should be conducted by a biologist with known experience surveying for bats. If no special-status bats are found during the surveys, then there would be no further regard for these bat species.

If special-status bat species are found on the project site a determination should be if there are young bats present. If young are found roosting in any tree or building, impacts to the tree or building should be avoided until the young have reached independence. A non-disturbance buffer fenced with orange construction fencing should also be established around the maternity site. The size of the buffer zone should be determined by a qualified bat biologist at the time of the surveys. If adults are found roosting in a tree or building on the project site but no maternal sites are found, then the adult bats can be flushed or a one-way

eviction door can be placed over the tree cavity (or building access opening) prior to the time the tree or building in question would be removed or disturbed. No other mitigation compensation would be required.

Mitigation Measure BIO-4: Based on the Corps' confirmed map, 0.20 acre of jurisdictional seasonal wetlands and 0.01 acre of jurisdictional ephemeral drainage will be impacted by the project. The applicant is applying for a Corps permit, requesting authorization to use Nationwide Permits (NWP) 20 (Oil Spill Cleanup) and 47 for impacts to 0.21 acre of waters of the U.S./State. NWP 47 authorizes activities required for the inspection, repair, rehabilitation, or replacement of any currently serviceable structure or fill for pipelines that have been identified by the Pipeline and Hazardous Materials Safety Administration's Pipeline Safety Program (PHP) within the U.S. Department of Transportation as time sensitive and additional maintenance activities done in conjunction with the time sensitive inspection and repair activities. The Water Board issued 401 water quality certification on May 23, 2016, which authorized the fill of the waters of the State for the project.

There are no wetland conservation banks approved for use by the San Francisco Regulatory District of the Corps and/or the Water Board available for use by the applicant to compensate for impacts to waters of the U.S./State from the initial remediation emergency response. Thus, to mitigate impacts to waters of the U.S./State, the applicant is proposing to re-create seasonal wetlands and other water swales at the project site in the same immediate area where these features were impacted. To mitigate for permanent impacts to 404 square feet (202 linear feet) of ephemeral drainage ("other waters") that occurred during the initial emergency response in 2011-2012, in 2012 the applicant created two new drainage swale features on the CNWS. In addition, a third drainage swale is proposed to be created on the 330 Holly Drive property (Sheet 3). The created drainage swale on this property will deliver storm event flows to the re-created seasonal wetlands on the CNWS. The new swales (other waters) total 785 linear feet providing a 3.9:1 mitigation ratio for linear impacts to waters of the U.S./State. In addition, proposed re-created seasonal wetlands on the project site total 10,650 square feet providing a 1.25:1 mitigation ratio for seasonal wetland impacts that occurred during the emergency response.

Additional compensatory mitigation includes that the 330 Holly Drive property will be restored to a natural landscape condition. All structures will be removed down to the dirt. The vegetable beds and landscape vegetation will be removed from a drainage swale on this property. In addition, the applicant will implement a native oak woodland planting plan on the western one half of the 330 Holly Drive property where the structures are being removed. Upon completion of the remediation

project the 330 Holly Drive property will be preserved in perpetuity via recordation of an open space Perpetual Deed Restriction that is recorded on the title of the private property. The native oak tree restoration project will create a wildlife oasis between residential subdivisions south of the former residence and the CNWS. M&A also confirmed in a meeting with the City of Concord on September 18, 2015, that under the City of Concord Reuse Plan for the CNWS, that the area of the CNWS affected by the proposed remediation project, and significant contiguous acreage to the north of this area will be deeded directly from the U.S. Navy to the East Bay Regional Park District to be managed as open space/park land. Thus, in consideration that an existing conservation easement occurs immediately south of the 330 Holly Drive property, and 1.4 acres of the 330 Holly Drive property will be permanently protected as open space via the recordation of an open space Perpetual Deed Restriction, the restored and preserved private property will add to a significant regional open space.

Mitigation Measure BIO-5: Any proposed changes/modifications to the drainage swale on the 330 Holly Drive property would require entering into a SBAA with CDFW. The applicant may satisfy this mitigation requirement by providing the City of Concord with a fully executed copy of a SBAA with CDFW for the project. The conditions of the executed SBAA shall become a condition of project approval.

Mitigation Measure BIO-6: The USFWS has already provided an incidental take permit for the portion of the project on the CNWS; and the work area on the CNWS will not be expanded by the project. In addition, because the CNWS is being regulated under CERCLA, it is exempt from state law/regulation administrative requirements, although it must comply with the substantive requirements¹. Accordingly, no new incidental take permit is required for proposed remediation work on the CNWS. However, all avoidance measures required by the USFWS's BO must be implemented prior to commencing with remediation work on the CNWS.

Pursuant to Section 2081 of the Fish and Game Code, incidental taking authority must be obtained from the CDFW for impacts to the swale on the 330 Holly Drive property. Similarly, as the USFWS did not cover the 330 Holly Drive property with its BO for the emergency project, this agency must also amend its BO (or reissue a BO) for the Corps prior to the time the Corps can issue its permit for the project. The proposed remediation project shall not be allowed to commence until such time that incidental take permits are issued by the CDFW and USFWS, or there is written evidence that these agencies have declined to process incidental take permits for the remediation project.

¹ This sentence was errata in the adopted MND and has been revised in this order.

Avoidance measures that must be implemented per the USFWS' last BO include that the project area be excluded from migrating California tiger salamanders via the installation of an exclusion fence. The exclusion fence shall consist of a qualified wildlife exclusion fence material for California tiger salamanders such as silt fence or a commercially available wildlife exclusion fence such as those made by ERTEC Corporation. The project site should be surrounded with silt fencing backed by orange construction fence, or with an orange silt fence. The silt fencing should either be landscape stapled every three inches and/or be buried three inches deep along the bottom edge to prevent animals from slipping under the fence. A qualified biologist should conduct a pre-installation survey of the fence installation area immediately prior to installation and should inspect it daily for the duration of the project.

Mitigation Measure BIO-7: The USFWS has already provided an incidental take permit for the portion of the project on the CNWS and the work area on the CNWS will not be expanded by the project. Accordingly, no new incidental take permit is required for proposed remediation work on the CNWS. However, the USFWS did not cover the 330 Holly Drive property, and, thus, this agency must amend its BO (or reissue a BO) for the Corps prior to the time the Corps can issue its permit for the project. The proposed remediation project shall not be allowed to commence until such time that an incidental take permit is issued by the USFWS for the 330 Holly Drive property or there is written evidence that USFWS has declined to process a new or amended incidental take permit for the remediation project.

The project site should be staked and surrounded with silt fencing backed by orange construction fence. The silt fencing should be installed at the bottom edge either via installation of landscape staples and in lieu of landscape staples should be buried three inches deep along the bottom edge to prevent animals from slipping under the fence. A qualified biologist should conduct a pre-installation survey of the fence installation area immediately prior to installation and should inspect it daily for the duration of the project.

All construction equipment and work should be limited to the area within the fence line. This minimizes the project-related disturbance to habitats outside the footprint of the project to the maximum extent possible. A biologist should remain onsite during the remediation work to salvage any California red-legged frog or California tiger salamander should one be encountered over the course of the remediation work. If a federally listed species is encountered then all work should be paused while USFWS is consulted for appropriate next steps.

Best Management Practices should be implemented to minimize the potential mortality, injury or other impacts to federally listed species.

All trash items should be removed daily from the project site to reduce the potential for attracting predators such as crows and ravens. Any impacted soils and materials that are excavated should be containerized and removed from the site expeditiously to prevent local wildlife and federally listed species from becoming exposed or killed by the effects of petroleum products.

All fueling and maintenance of equipment and vehicles, and staging areas should remain at least 20 meters (67 feet) from any drainage feature, or as far away as available space allows at the work area.

Cultural Resources

Mitigation Measure CR-1: If any historic or prehistoric cultural artifacts are encountered during site disturbance, all ground disturbance within 100 feet of the find shall be halted until the Water Board and the City of Concord are notified, and a qualified archaeologist can identify and evaluate the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). Indicators of historic resources could include items of ceramic, glass, or metal, and could include building foundations. Prehistoric indicators could include chipped chert and obsidian tools and tool manufacture waste flakes; grinding and hammering implements; or locally darkened soil.

The results of any additional archaeological effort required through the implementation of Mitigation Measures CR-1 or CR-2 shall be presented in a professional-quality report to the Water Board, the City of Concord, and the Northwest Information Center at Sonoma State University in Rohnert Park. The project sponsor shall fund and implement the mitigation in accordance with Section 15064.5(c)-(f) of the *CEQA Guidelines* and Public Resources Code Section 21083.2.

Mitigation Measure CR-2: In the event that any human remains are encountered during site disturbance, all ground-disturbing work shall cease immediately and a qualified archaeologist shall notify the Coroner's Division of the Contra Costa County Office of the Sheriff and advise that office as to whether the remains are likely to be prehistoric or historic period in date. If determined to be prehistoric, the Coroner's Division will notify the Native American Heritage Commission of the find, which, in turn, will then appoint a "Most Likely Descendant" (MLD). The MLD in consultation with the archaeological consultant and the project sponsor, shall advise and help formulate an appropriate plan for treatment of the remains, which might include recordation, removal, and scientific study of the remains and any associated artifacts. After completion of analysis and preparation of the report of findings, the remains and associated grave goods shall be returned to the MLD for reburial.

Mitigation Measure CR-3: If any paleontological resources are encountered during site grading or other construction activities, all ground disturbance shall be halted until the services of a qualified paleontologist can be retained to identify and evaluate the scientific value of the resource(s) and, if necessary, recommend mitigation measures to document and prevent any significant adverse effects on the resource(s). Significant paleontological resources shall be salvaged and deposited in an accredited and permanent scientific institution, such as the University of California Museum of Paleontology (UCMP).

Hydrology and Water Quality

Mitigation Measure WQ-1: Prior to issuance of a grading permit, the project sponsor shall obtain National Pollutant Discharge Elimination System (NPDES) construction coverage as required by Construction General Permit (CGP) No. CAS000002, as modified by State Water Board Order No. 2009-0009-DWQ. In accordance with the CGP requirements, the project applicant shall electronically file the Permit Registration Documents (PRDs), which include a Notice of Intent (NOI), a risk assessment, site map, signed certification, Stormwater Pollution Prevention Plan (SWPPP), and other site-specific PRDs that may be required. The SWPPP shall be prepared by a Qualified SWPPP Developer who has attended a training course sponsored or approved by the Regional Water Board.

At a minimum the SWPPP shall identify Best Management Practices (BMPs) for implementation during project construction that are in accordance with the applicable guidance and procedures contained in the California Stormwater Quality Association's *California Stormwater Best Management Practices Handbook* (2015), or as required by the Contra Costa Clean Water Program. Typical construction BMPs may include hay bales, water bars, covers, sediment fences, sediment ponds, geotextile blankets, fiber rolls, temporary slope drains, mulching of exposed areas vehicle mats in wet areas, and other erosion-reducing features. The remediation contractor shall implement the BMPs identified in the SWPPP throughout the remediation work to help stabilize graded areas and reduce erosion and sedimentation. Structural construction BMPs shall be installed prior to initiation of ground disturbance.

Traffic and Transportation

Mitigation Measure T-1: (a) The contractor shall widen/pave an area at the CNWS entrance to create a better angle for tractor-trailer trucks to turn in and out of the CNWS site. Figure T-5 shows options for the recommended paving/widening at the access point to improve truck access.

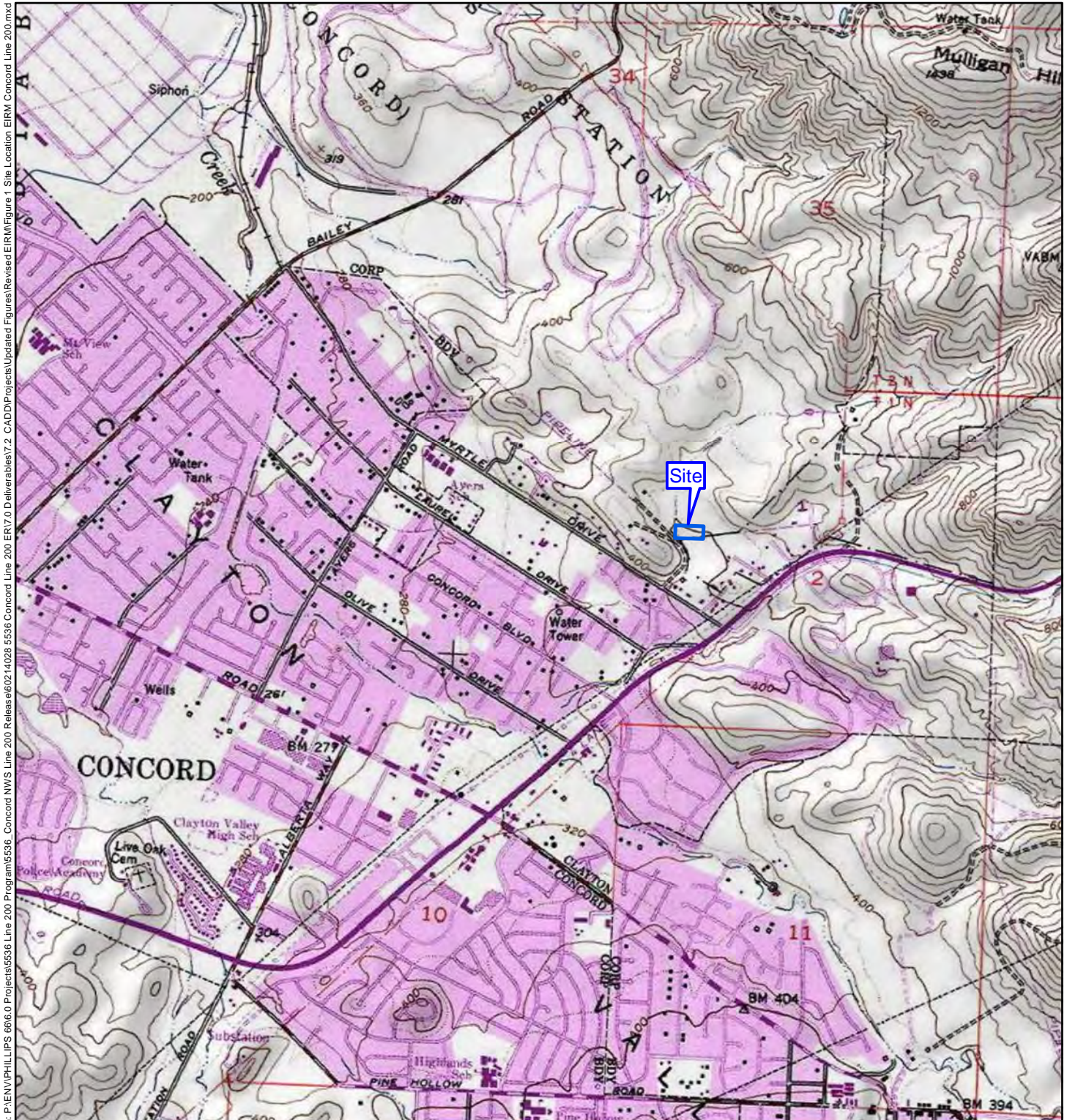
OR

- (b) The contractor shall employ flag men/women to halt traffic in both lanes while trucks maneuver out onto Bailey Road.

OR

- (c) The contractor shall use smaller roll-off container trucks for hauling. Using smaller trucks would mean more haul trips, but Bailey Road carries relatively low traffic volumes and would be able to accommodate the additional trips that would be generated by using smaller trucks. Therefore, this mitigation measure would not create any significant traffic impacts on Bailey Road.

- Mitigation Measure T-2:** Once the type of truck to be used has been selected, the contractor shall test the truck to verify that safe turning movements can be made to and from the CNWS entrance on Bailey Road. If turning movement difficulties are identified, the contractor shall use smaller roll-off container trucks for hauling.
- Mitigation Measure T-3:** The contractor shall place temporary warning signs on Bailey Road near the CNWS access point to warn motorists of truck access.
- Mitigation Measure T-4:** The contractor shall establish safety and precautionary procedures for truckers as set forth in the health and safety plan.
- Mitigation Measure T-5:** The contractor shall require all truckers to test drive the haul route prior to hauling.
- Mitigation Measure T-6:** The contractor shall require truckers to cover haul containers to avoid leaving debris on the roadway during transport, inspect the haul route, and clean up at the end of the day if debris is found.
- Mitigation Measure T-7:** The contract for the proposed work shall prohibit truckers from hauling soil or waste on Bailey Road during the peak commute hours. Hauling shall be prohibited between 7:00 a.m. and 8:00 a.m. and between 4:45 p.m. and 5:45 p.m.



REFERENCE:
 USGS 7.5 Minute Quadrangle; Clayton
 Township 1 N
 Range 1 W
 Section 2 S



**Revised Excavation Interim Remedial Measure
 Work Plan**
Phillips 66 Company
Line 200 Release
Concord Naval Weapons Station
 Concord, California
 Project No.:60315106.5536 Date:10/22/2014

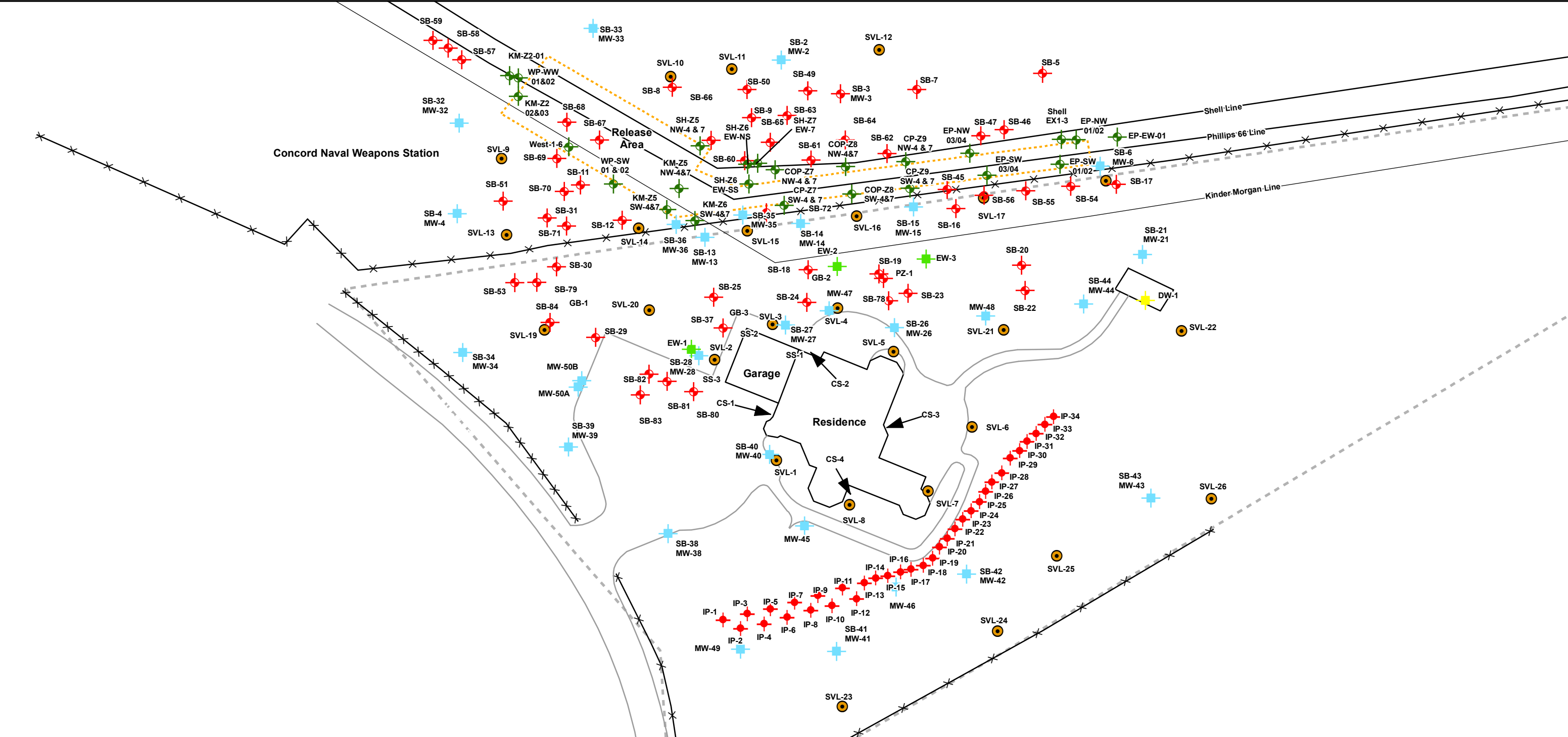
Site Location



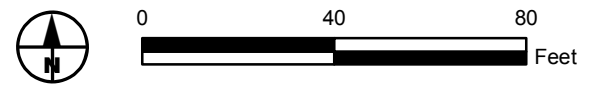
Figure: 1

Path: P:\ENV\PHILLIPS 66\6.0 Projects\5536 Line 200 Program\5536 Concord NWS Line 200 Release\60214028 5536 Concord Line 200 ER\7.0 Deliverables\7.2 CADD\Projects\Updated Figures\Revised EIRM\Figure 1 Site Location EIRM Concord Line 200.mxd

Path: P:\ENV\PHILLIPS 66\6.0 Projects\5538 CNWS Line 200 Release\02-14\2016-5538 Concord Line 200 ER7.0 Deliverables\7.2 CAD\Projects\Updated Figures\SR Figures\Figure 2 Sampling Locations Line 200.mxd



- Legend**
- ◆ Soil Borings
 - Post-Excavation Sidewall Samples
 - Soil Borings and Monitoring Wells
 - Extraction Well
 - Domestic Well
 - Soil Gas Probe
 - ◆ Injection Point
 - CS Crawlspace Sample Location
 - SS Subslab Sample Location
 - Pipeline Location
 - × × × Fence Line
 - - - Residential Property Boundary
 - ▭ Excavation Area During Release Response

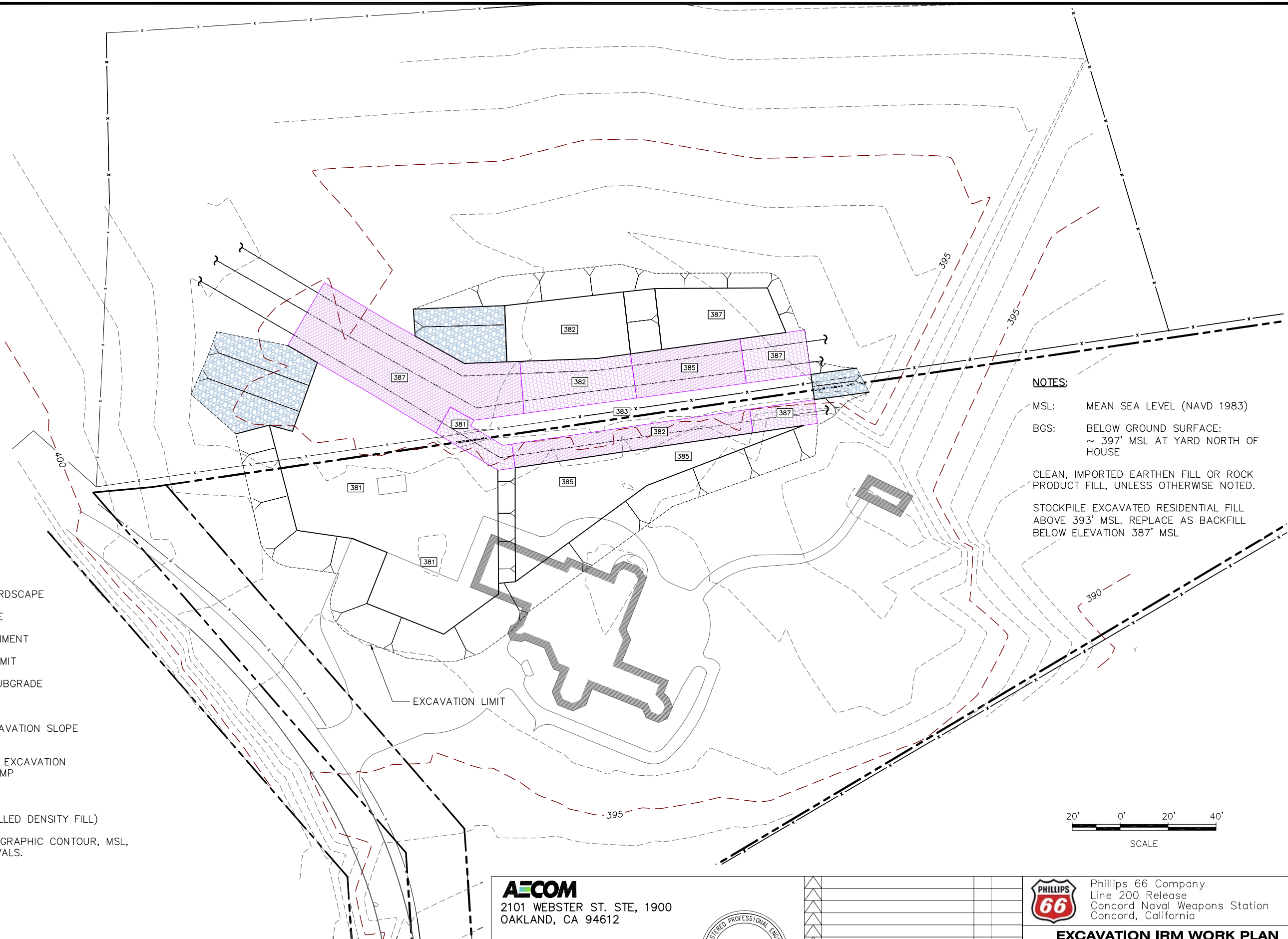


Sampling Location Map

Apr 29, 2016 - 3:23pm \\oakland\Oakland\Projects\Legacy\Trans\60302969-Phillips 66\900-CAD-GIS\910 CAD_BIM\RM rev\Sht D-2 Site Topo - 20150528.dwg - Sht D-2 OaksK

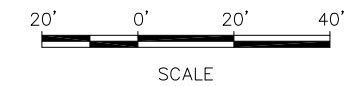


- LEGEND:**
- FENCE LINE
 - EDGE OF PAVEMENT/HARDSCAPE
 - PROPERTY LINE
 - PIPELINE ALIGNMENT
 - EXCAVATION LIMIT
 - EXCAVATION SUBGRADE FEET MSL
 - 1:1 MASS EXCAVATION SLOPE
 - 3:1 H:V MASS EXCAVATION EQUIPMENT RAMP
 - VERTICAL CUT (WITH CONTROLLED DENSITY FILL)
 - EXISTING TOPOGRAPHIC CONTOUR, MSL, 1 FOOT INTERVALS.



NOTES:

- MSL: MEAN SEA LEVEL (NAVD 1983)
- BGS: BELOW GROUND SURFACE:
~ 397' MSL AT YARD NORTH OF HOUSE
- CLEAN, IMPORTED EARTHEN FILL OR ROCK PRODUCT FILL, UNLESS OTHERWISE NOTED.
- STOCKPILE EXCAVATED RESIDENTIAL FILL ABOVE 393' MSL. REPLACE AS BACKFILL BELOW ELEVATION 387' MSL



AECOM
2101 WEBSTER ST. STE, 1900
OAKLAND, CA 94612



NO.	REVISIONS	BY	DATE
1	ELIMINATE SHORING	WLS	5/27/2015
PROJECT NO. 60315106		DRAWING NO. 3	
CADD FILE			

Phillips 66 Company
Line 200 Release
Concord Naval Weapons Station
Concord, California

EXCAVATION IRM WORK PLAN

**SITE TOPOGRAPHY
EXCAVATION LIMITS & SECTIONS**

PRELIMINARY
PHASE 4

DESIGN	BY WLS	DRAWN	BY LD	CHECKED	BY CE
DETAILS	BY WLS	DRAWN	BY LD	CHECKED	BY CE
QUANTITIES	BY	DRAWN	BY	CHECKED	BY

PROJECT ENGINEER

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE