FINAL

REMEDIATION ACTIVITIES ENVIRONMENTAL MONITORING PLAN, HAMILTON SQUARE PARCEL

Prepared for

City of Novato
922 Machin Avenue
Novato, CA 94945

Prepared by

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

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Project Number S038.001.002

terraphase engineering

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ACRONYMS AND ABBREVIATIONS

ACM	asbestos containing materials
BRAC	Base Realignment and Closure
DON	Department of the Navy
DTSC	Department of Toxic Substance Control
EPA	Environmental Protection Agency
ft^3/min	cubic feet per minute
LUC	land use covenant
µg/m^3	micrograms per cubic meter
MMRP	Mitigation Monitoring and Reporting Program
OSHA	Occupational Safety and Health Administration
PID	photoionization detector
PM	particulate matter
QC	quality control
RAP	Remedial Action Plan
RWQCB	Regional Water Quality Control Board
SAP	Sampling and Analysis Plan
SMP	Soils Management Plan
SSWPPP	Stormwater Pollution Prevention Plan
Terraphase	Terraphase Engineering Inc.
Thompson	Thompson Development
TSP	total suspended particulate
UST	underground storage tanks
XRF	X-ray florescence

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CERTIFICATION

All information, conclusions, and recommendations in this document have been prepared by a California registered professional.

July 9, 2018

Tomer Schetrit, P.E. Date
Associate Engineer

July 9, 2018

Darren Croteau, PG Date
Principal Geologist

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1.0 INTRODUCTION

This Remediation Activities Environmental Monitoring Plan (the "Plan") has been developed for the City of Novato to describe monitoring that will be conducted during remedial excavation and other earthmoving activities performed at the Hamilton Square Main Gate Road and C Street project (the "Site").

1.1 Background

In 2013, Thompson Development (Thompson) submitted an application to develop the Site with 31 townhome units. A service station had previously operated at the Site between the mid-1970s and 1995, and the property has a land use covenant (LUC) and deed restriction that currently prohibits residential use. An Initial Study and Mitigated Negative Declaration (IS/MND) was prepared for the development and made available for public comment in 2015. After comments on the remedial activities were received from the public, plans for the remediation activities were revised and the Initial Study was revised to better address concerns raised by the public. A Revised IS/MND was put out for public comment in October 2016, and the Novato Planning Commission adopted a resolution recommending that the Revised IS/MND and an Errata be adopted by the City Council. On June 13, 2017, the Novato City Council adopted the Revised IS/MND and the mitigation measures included therein (the Mitigation, Monitoring, and Reporting Program, "MMRP"). This Plan fulfills the requirement for a safety and monitoring plan specified in item VIII.HAZ-1b of the MMRP.

1.2 Site History and Regulatory Status

The Site was formerly part of the Hamilton Air Force Base, which was deactivated in 1975. The Site was transferred to the Department of the Navy (DON) through the Base Realignment and Closure (BRAC) process. In 2005, the DON transferred the property to Hamilton Square, LLC, who entered into a land use covenant with the Department of Toxic Substance Control (DTSC), Regional Water Quality Control Board (RWQCB), and DON. The deed restrictions, related to the presence of hazardous materials on-site, included prohibiting residential use, mandating soil and groundwater management controls during development, digging and soil handling restrictions for the entire Site, and handling specifications for asbestos-containing material (ACM) and buildings containing lead-based paint. The deed restriction may be removed if remedial measures are conducted such that the DTSC, RWQCB, and DON approve the removal of the deed restrictions.

A Navy Exchange service station was formerly located at the Site. Three gasoline underground storage tanks (USTs) and one waste oil tank were present on-site. The USTs were removed in 1995, and releases of gasoline from the USTs to soil and groundwater were identified. Remediation of soil and groundwater, including air sparging and soil vapor extraction, was conducted under the oversight of the RWQCB. Remedial activities related to the UST case were discontinued in 2009. Residual concentrations of petroleum hydrocarbons and related compounds are present in Site soil and groundwater.

On behalf of Thompson Development, West Yost Associates prepared a Remedial Action Plan (RAP) to support Thompson's intent to redevelop the property for residential use. Remedial activities proposed in the RAP include pre-excavation soil characterization, soil excavation and removal, post-excavation confirmation sampling, and abandonment of remaining groundwater monitoring wells. After the successful implementation of the RAP and residential standards are met in soil at all required depths, the removal of the LUC between DTSC, RWQCB, DON, and Hamilton Square, LLC to allow for residential development will be requested.

2.0 WORK TO BE MONITORED

Remedial work associated with the former service station will be conducted under the oversight of an independent environmental monitor, who will work in conjunction with the City of Novato to oversee activities that may negatively impact the surrounding community.

2.1 Documents and Monitoring Plans

All work conducted at the Site is performed under the MMRP. Planned remedial activities are discussed in the Remedial Action Plan (RAP) prepared by West Yost Associates (WYA, 2018a). Remedial activities include digging test pits to confirm the extent of contamination, and excavating, stockpiling, loading, and off-hauling contaminated soil. The soil activities will be conducted according to protocols established in the RAP and the Soil Management Plan (SMP; WYA 2018b). Sampling conducted by Thompson's remediation consultant will follow the Sampling and Analysis Plan (SAP; WYA 2018c).

2.2 Independent Environmental Monitor

Terraphase has been retained by the City of Novato to be the independent Environmental Monitor specified in the MMRP. The roles and responsibilities of the Environmental Monitor are detailed in the MMRP and are discussed below. Thompson has agreed in writing that the Environmental Monitor has the authority to monitor remedial activities and stop work if necessary (Appendix C).

2.2.1 Third Party Dust Control Monitoring

The Environmental Monitor will oversee the dust control measures performed by the third party dust control contractor. The dust control contractor is subcontracted through the developer Thompson. The Environmental Monitor will ensure that the dust controls being implemented are sufficient to prevent the migration of dust off-site. Compliance will be verified by on-site observation and real-time perimeter dust monitoring specified in this Plan.

2.2.2 Start/Stop Work Authority

The Environmental Monitor has stop work authority for any violation of the monitoring plan protocols or the exceedance of the perimeter contaminant threshold(s) established in the MMRP. Remedial work shall not begin until the Environmental Monitor has confirmed that the pre-remediation safety measures have been conducted, and the Environmental Monitor will confirm that the post-remediation work hygiene measures have been completed before releasing remediation personnel from the Site. Thompson and its remediation contractor/subcontractors have acknowledged and agreed in writing that the Environmental Monitor has such authorities and will not be obstructed from exercising oversight and monitoring of the remediation phase. A copy of the signed letter is provided in Appendix C.

2.2.3 Documentation

The Environmental Monitor will document daily the activities that occur on-site and inform the City of Novato of any incidences or exceedances of criteria specified in the MMRP. An example of the daily field log related to dust monitoring is included in Appendix A.

2.2.4 Tile Removal Oversight

The Environmental Monitor shall observe and ensure the proper removal and disposal of any floor tiles or remnants thereof affixed to or visible in the vicinity of the foundation slab of the former gas station at the Site. The removal and disposal shall be conducted in accordance with Cal/OSHA Construction Safety Orders for Lead (Title 8, California Code of Regulations, Section 1532.1). The removal process shall be completed prior to the initiation of other remedial activities at the Site to avoid pulverizing the tile.

2.3 Schedule

Excavation, grading, loading, and off-hauling of any contaminated soils during the remediation phase of the project or any subsequent remedial activities shall only be conducted on Saturdays and Sundays when children are not present at the nearby North Bay Children's Center, Novato Charter School, Wonder Nook Preschool, and Hamilton Elementary School. The acceptable hours of operation for such weekend work shall be 10 a.m. to 5 p.m. with permission to perform remediation activities on Sundays granted by the Community Development Director pursuant to Novato Municipal Code Section 19.22.070, as discussed in the Noise Section of the IS/MND.

3.0 OFF-SITE MONITORING MEASURES

Off-site safety measures will be implemented on the following five off-site properties with sensitive receptors:

- North Bay Children's Center,
- Novato Charter School,
- Wonder Nook Preschool,
- Lanham Village (community garden), and
- Hamilton Elementary School.

Excavation, grading, loading, and off-hauling of any contaminated soils will be conducted on Saturdays or Sundays between the hours of 10 am and 5 pm. Remedial work will not begin each day until the Environmental Monitor confirms that all pre-remediation safety measures described in Section 3.1 below have been implemented. At the end of the weekend, the Environmental Monitor will confirm compliance with the post-remediation work hygiene procedures described in section 3.2 below and release remediation personnel once such procedures are deemed complete. Dust control and additional remediation measures required on-site during remediation work are presented in Section 4.0. On weekdays, when no on-site work is taking place, the environmental monitor will verify that stockpiled soil is tarped or covered with plastic and that SWPPP measures remain in place.

3.1 Pre-Remediation Safety Measures

Prior to the start of remedial activities each weekend work period, safety measures including placing plastic sheeting or other acceptable barriers over outdoor eating surfaces, play equipment, vegetable beds, and community gardens will be performed at the facilities listed above. In some cases where placement of plastic sheeting or other barriers over vegetable beds or playground equipment is infeasible, the following measures will be taken:

- Lanham Village Community Garden – install windscreen 6 feet above the existing fence along the south and eastern fence line of the garden.
- Wonder Nook Preschool – no change to precautionary measures; procedures described in mitigation monitoring plan will be used, including tarping and wiping down play equipment.
- North Bay Children's Center & Novato Charter School – tarping will consist of a lean-to style installation on the windward side of the garden beds; all other measures are consistent with those described in the mitigation monitoring plan.
- Hamilton Elementary School – garden beds will be tarped; large play equipment is infeasible to tarp effectively and will be wiped down at the end of each work weekend.

3.2 Post-Remediation Work Hygiene Protocols

After the end of each weekend work period, post-remediation work hygiene protocols including the proper removal of plastic sheeting or other barriers placed over outdoor eating surfaces, play equipment, vegetable beds, and community gardens and the wiping down of all outdoor eating surfaces and play equipment at the noted children's facilities will be performed. Plastic sheeting or barriers will be disposed of as municipal garbage unless exceedances of the monitoring criteria specified in the MMRP have been documented. If exceedances are documented, the plastic sheeting will be contained at the Site and disposed with the construction-generated waste.

4.0 ON-SITE MONITORING MEASURES

The following monitoring measures were specified in the MMRP and will be performed on-site during the duration of remedial activities. The Environmental Monitor will oversee these measures as needed during the implementation of remedial activities, but specific measures will be performed by the general contractor or the third party dust control subcontractor.

4.1 Dust Control and Additional Remediation Measures

The following dust control and other remediation-related measures have been compiled from those specified in the MMRP, RAP, and/or SMP. Elements of the dust control program shall include, but not necessarily be limited to, the following:

- An inventory of construction equipment and schedule for equipment use shall be submitted to the City of Novato before issuance of demolition and/or grading permits.
- All exposed surfaces (i.e., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered using recycled water as necessary to control dust.
- All haul trucks transporting soil, sand, or other loose material off-site shall cover and anchor their load to prevent exposure.
- All visible mud or dirt tracked out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day or more frequently should mud or dirt be visible on adjacent roads. The use of dry power sweeping shall be prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour.

Additional Remediation Mitigation Measures:

- The excavation operations shall be monitored for fugitive dust, and measures such as the application of water or a change in operations or equipment will be taken to reduce the potential for dust to leave the Site.
- Water for dust control will be applied at a rate that prevents runoff to off-site locations and discharge to the storm drain, waters of the State, or any nearby water features.
- Stockpiled soil, if any, will be covered with plastic sheeting or similar material at the end of each workday. Any stockpile that is not being actively worked on for more than 60 minutes will be covered with plastic sheeting to prevent dust from leaving the Site.
- Organic vapors will be monitored, and if needed, measures such as the application of water or a change in operations or equipment will be taken to minimize noticeable or nuisance odors from leaving the Site. If needed, a non-toxic VOC vapor suppressant will be used (see Section 4.4)

- Tarps shall be placed over all open excavation pits after the completion of each day's remedial activities.

- Excavation, grading, loading, and off-hauling of any contaminated soils shall only be conducted on Saturdays or Sundays between the hours of 10 am and 5 pm.

- The dust control subcontractor shall ensure that adequate equipment and water supplies are available prior to the start of work and at all times during the remediation phase to properly suppress dust. At a minimum, two water tankers shall be available and a hose connection to an adjacent fire hydrant to provide sufficient water for dust suppression.

Additional Construction Mitigation Measures specified in the MMRP:

- All paving shall be completed as soon as possible. All exposed soil shall be stabilized (e.g. hydroseeding or soil binders) until the building pad is laid. Paving is not expected to be part of the remediation scope of work monitored under the Plan.

- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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

- A publicly visible sign shall be posted with the name and telephone number of the person representing the project sponsor to contact regarding dust complaints. This person shall respond and take corrective action within one (1) hour of receiving a complaint. The Bay Area Air Quality Management District (BAAQMD) and City of Novato phone number shall also be visible to ensure compliance with applicable regulations.

- All exposed surfaces shall be watered at a frequency adequate to maintain minimum soil moisture of 12 percent. Moisture content can be verified by lab samples or moisture probe, and is not part of the remediation scope of work monitored under the Plan. Water for dust control will be monitored to ensure an application rate that prevents runoff to off-site locations, discharge to storm drain, or any nearby water features (e.g., Pacheco Creek).

- Stockpiled soil, if any, will be covered with plastic sheeting, or other similar material, at the end of each workday. A stockpile that is known to be inactive shall be immediately covered with plastic sheeting or a similar material. A stockpile that is not being actively worked on for more than 60 minutes will be covered with plastic sheeting or a similar material to prevent dust from leaving the Site.

- All excavation, grading, and/or demolition activities shall be suspended when average wind speeds exceed 20 mph.
- Wind breaks (e.g., fences) shall be installed on the windward side(s) of actively disturbed areas of construction. Wind breaks should have at maximum 50 percent air porosity.
- Vegetative ground cover (e.g., fast-germinating native grass seed) shall be planted immediately in areas with exposed soil and no further soil disturbance is anticipated and watered appropriately until vegetation is established.
- The simultaneous occurrence of excavation, grading, and ground-disturbing construction activities on the same area at any one time shall be limited. Activities shall be phased to reduce the amount of disturbed surfaces at any one time.
- All trucks and equipment, including their tires, shall be washed off prior to leaving the Site.
- Site accesses from the paved road shall be treated with a 6 to 12 inch compacted layer of wood chips, mulch, or gravel.
- Sandbags or other erosion control measures shall be installed to prevent silt runoff to public roadways from sites with a slope greater than one percent (see MMRP Mitigation Measure HYD-1 regarding the implementation of a Stormwater Pollution Prevention Plan (SWPPP) and Stormwater Control Plan.
- In conformance with mitigation measure AIR-1 and AIR-2 of the MMRP, the project applicant prepared an air quality review of the construction equipment to be used in construction of the RAP. The review also verifies that the equipment included in the developer-provided construction operations plan will not exceed the BAAQMD project-level health risk cancer significance threshold of 10 in one million by demonstrating that the off-road equipment to be used on-site would achieve a fleet-wide average 45 percent reduction in PM2.5 exhaust emissions or more.
- The Environmental Monitor will confirm that the mitigation measures noted above are in place and record observations in a daily log. The daily log will also include the results of air monitoring readings as required by the SMP.

4.2 Groundwater Control and Disposal, SWPPP

The contractor must demonstrate compliance with the current requirements of the Construction General Permit and MS4 Permit, including preparation of a Stormwater Pollution Prevention Plan (SWPPP) and a Stormwater Control Plan (SCP). These documents have been prepared by Kristopher M. Larson, Qualified SWPPP Developer/Practitioner on behalf of Thompson Builders (July 2018) and approved by the Novato Public Works Department.

The Environmental Monitor will confirm the contractor has installed the approved stormwater measures and maintains these items during the remediation period.

4.3 Noise Suppression

Construction equipment shall be well maintained and used judiciously to be as quiet as practical. The following measures, when applicable, shall be followed to reduce noise from construction activities and shall be the responsibility of Thompson:

- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment.
- Use "quiet" models of air compressors and other stationary noise sources where technology exists.
- Locate stationary noise-generating equipment and construction staging areas as far as feasible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Prohibit unnecessary idling of internal combustion engines.
- Designate a "construction liaison" that would be responsible for responding to any local complaints about construction noise. The liaison would determine the cause of the noise complaints (e.g., starting too early, bad muffler, etc.) and institute reasonable measures to correct the problem. Conspicuously post a telephone number for the liaison at the construction Site.
- Hold a pre-construction meeting with the job inspectors and the general contractor/on-site project manager to confirm that noise mitigation and practices (including construction hours, construction schedule, and noise coordinator) are completed.

4.4 Vapor Suppressant

RusFoam® OC (AC645) a non-toxic VOC vapor suppressant will be used according to manufacturer's specifications to suppress vapors during excavation and hauling activities. The vapor suppressant will be applied to excavation sidewalls and bottom and stockpiled material.

5.0 PERIMETER AIR MONITORING PROTOCOLS

Perimeter air monitoring for the Site will be conducted in accordance with the Resolution No. 2017-032 Exhibit A (City of Novato 2017) and Revised Initial Study (City of Novato 2016) Mitigation Measure HAZ-1b. Mitigation Measure HAZ-1b includes monitoring of a third-party dust control subcontractor to insure implementation, at a minimum, of the dust and odor control measures specified in Mitigation Measure AIR-1 and the measures specified in the RAP (West Yost Associates 2018a). Mitigation Measure HAZ-1b-5 includes the establishment and implementation of perimeter air monitoring protocols for lead and other heavy metals, asbestos, particulate matter, and organic vapor consistent with monitoring provisions specified in the RAP. The purpose of the 3rd party monitoring consultant is to ensure that all the protective measures specified in the RAP are being implemented to ensure fugitive dust and odor/vapor leaving the site is avoided and minimized. Perimeter air monitoring protocols and instrumentation are detailed in this section.

5.1 Visual and Olfactory Observation

The environmental monitor will be on-site during construction and will be visually monitoring for dust and observing for any odor emanating from the site. If visual or olfactory observations indicate dust or odor is observed on-site, corrective action will be taken to avoid and minimize dust or odor from leaving the site. Corrective actions may include, but are not limited to, increasing the frequency of dust control measures, modifying dust control procedures, changing soil removal procedures, and/or directing the use of alternate construction equipment or methods.

5.2 Perimeter Action Levels

Perimeter monitoring will verify that dust control BMPs in place are effective. The following minimum action levels are specified in the MMRP and shall be enforced at the Site during construction and remediation activities:

- For lead and particulate matter, action levels shall be the strictest ambient air standard from U.S. EPA or the BAAQMD: 0.15 micrograms per cubic meter ($\mu g/m^3$) for lead and 20 $\mu g/m^3$ for particulate matter (as PM_{10}) measured at downwind locations. With the exception of lead, no ambient air quality standards have been established for heavy metals. Accordingly, any exceedance of perimeter heavy metals concentrations above background levels (measured before remedial activities at the upwind and downwind perimeter locations) shall also represent an exceedance under the Plan. Per BAAQMD 50 $\mu g/m^3$ PM_{10} is also appropriate for the site and is protective of human health. However, 20 $\mu g/m^3$ for PM_{10} is conservative and will be used as the action level.
- No ambient air quality standards have been established for asbestos. Accordingly, any exceedance of perimeter asbestos above background levels (measured before remedial

activities at the upwind and downwind perimeter locations) shall represent an exceedance under the Plan.

- No ambient air quality standards have been established for organic vapor. Accordingly, any exceedance of perimeter organic vapor above background levels (measured before remedial activities) measured at downwind locations shall represent an exceedance under the Plan.

5.3 Sampling Equipment

Equipment necessary to facilitate compliance with the requirements of the MMRP include the following:

- Six personal air pumps (Gillian GilAir Plus Sampling Pumps) for metals and asbestos;
- Two real-time Particulate Monitors (Thermo Scientific ADR-1500) for PM_{10};
- Two Mini RAE 3000 photoionization detector (PID) for real time organic vapor monitoring;
- One X-ray florescence (XRF) analyzer (Thermo Scientific Niton XL3t GOLDD+ XRF Analyzer); and,
- Hand held anemometer to determine wind speed and direction.

5.4 Perimeter Monitoring Locations

Two perimeter air monitoring stations will be set up to collect samples during all periods of remedial earthmoving results: one upwind and one downwind of prevailing wind direction.

Wind speed and direction data obtained from the Gnoss Field Airport weather station from June through August for the years 2013 through 2017 was reviewed to assess the prevailing wind direction. This station is located approximately 7 miles north of the Site. The wind data indicate that the predominant wind directions are from the north and west-southwest. The Site, and the San Francisco Bay Area in general, are subject to significant daily variation in wind direction and speed. Wind direction will be determined daily with the anemometer, and the upwind and downwind sampling locations will be relocated if necessary.

5.5 Background Conditions

Terraphase will measure background perimeter air monitoring conditions at the Site approximately one week prior to the start of remediation activities to establish Site background conditions for heavy metals and asbestos. Samples will be collected during proposed working hours and analyzed for Title 22 metals and asbestos to establish the background Site data set.

VOC background conditions will be established by collecting real time VOC readings at the downwind location during the same time period that the background samples are collected.

5.6 Frequency

Terraphase will provide a qualified staff-level field monitor to perform independent third-party air and dust monitoring inspections for construction activities performed by Thompson at the Site. Monitoring activities will be performed on weekends during construction activities. Additional Site visits will be conducted on weekdays in between construction weekends to ensure dust and stormwater pollution prevention controls remain in place, in particular any tarping of the excavation pits and/or stockpiled soil.

During construction activities, Terraphase will be on-site during working hours to inspect the monitoring equipment, observe the dust control subcontractor, the effectiveness of dust control measures, and collect required air samples for laboratory analysis. Perimeter real time PM^{10} and VOC concentrations at the upwind and downwind sample locations will be checked at least every hour by the on-site field staff. During weekdays, in between construction activities, Terraphase will make daily Site visits to ensure best management practices for compliance with HAZ-1b-a-1&2 and verify that dust and stormwater pollution prevention controls remain in place, in particular any tarping of the excavation pits and/or stockpiled soil. If olfactory observations indicate odor is present on-site additional VOC suppressant will be applied.

5.7 Quality Control

Prior to using the monitoring equipment, Terraphase will properly calibrate the monitoring equipment in accordance with the manufacturer's recommendations.

5.8 Sampling Procedures

5.8.1 Heavy Metals and Asbestos Sampling

Personal air sampling pumps will be used to collect samples over the course of each working day for analysis of metals and asbestos. Samplers will located in the upwind direction and in the downwind direction. One sample will be collected daily from each sampler. Samples will be collected using pre-weighed glass fiber filters obtained from the laboratory. The sample period is during working hours, between approximately 10 a.m. and 5 p.m. Operation procedures will follow manufacturer specifications.

Following sample collection, the filters will be placed into individual receptacles and prepared for shipment to the contract laboratory for analysis following standard chain-of-custody procedures.

The sample filters will be transported to a laboratory for analysis of Title 22 metals using EPA Method 6010B/6010C and asbestos using Transmission Electron Microscopy (TEM) in accordance with a modified version of the Asbestos Hazard Emergency Response Act (AHERA) test method.

5.8.2 Particulate Monitoring

Particulate dust monitors (Thermo Scientific ADR-1500) will be used to monitor PM_{10} levels will be used. One dust monitor will be placed upwind, the second dust monitor will be placed downwind. Each dust monitor will provide real-time, continuous dust levels. If PM_{10} levels exceed 20 $\mu g/m^3$ action level, the work shall stop and the Environmental Monitor will assess the dust control measures being implemented by the dust control contractor pursuant to Section 4.1 of this Plan, and, as necessary, direct corrective action, including, but not limited to, directing the dust control contractor to correct any procedures not being adequately followed and/or prescribe alternative dust control measures based on field conditions.

5.8.3 PID Monitoring

A MiniRAE 3000 photo ionization detector (PID) will be used for organic vapor monitoring upwind and downwind of the work zone at the perimeter. Readings will be taken hourly during construction activities. In the event the downwind PID has a reading greater than the background level established during the background monitoring, the work shall stop and the Environmental Monitor will assess the dust control measures being implemented by the dust control contractor pursuant to Section 4.1 of this Plan, and, as necessary, direct corrective action, including, but not limited to, directing the dust control contractor to correct any procedures not being adequately followed and/or prescribe alternative dust control measures based on field conditions..

5.8.4 XRF Monitoring

A Thermo Scientific Niton XL3t GOLDD+ XRF Analyzer will be used to measure lead concentrations in air particulate samples, prior to transport of the filters to the analytical laboratory. After the dust sample is obtained it will be placed in front of the XRF window and exposed to radiation from the XRF meter. Fluorescent and backscattered X-rays from the sample enter through the detector window and are converted into electrical pulses in the detector, which forms the basis of qualitative X-ray analysis. The XRF reading for lead will be recorded before the samples are submitted to the laboratory.

5.8.5 Anemometer

Prevailing wind direction and speed will be monitored and recorded three times daily by a hand-held anemometer. In the event that a noticeable change in wind speed or direction occurs, the wind monitoring stations will be checked, readings recorded, and the perimeter air monitoring locations relocated as needed.

5.9 Onsite Inspections and Records

Daily on-site field inspections during active remedial activities on the weekends will consist of the following activities:

- Meeting participation with the General Contractor to assess daily work activities;
- Documentation of wind direction and speed;
- Documentation and inspection of dust monitor and organic vapor units;
- Inspection of implemented dust control measures by the dust control subcontractor;
- Collection of two samples each day during construction at upwind and downwind locations for Title 22 metals and asbestos laboratory analysis and transportation of samples to an analytical laboratory;
- Inspection of work areas for migration of visible dust;
- Inspection that water for dust control is applied at rates that prevent runoff off-site
- Notification to City of Novato, if necessary, of any violation of the monitoring plan protocols or an exceedance of the perimeter contaminant threshold action level exceedances including : PM_{10}metals concentrations exceeding background levels at the downwind monitoring stations, or visible dust crossing the Site boundary; and,
- preparation of required documentation.

An example of the field forms are provided in Appendix A.

Daily on- and offsite inspections during weekdays when remedial activities are not occurring will consist of the following activities:

- Inspect the pre-remediation safety measures from the weekend have been properly removed
- Inspect that SWPPP BMPs are in place; and
- Inspect the best management practices to ensure compliance with HAZ-1b-a-1&2. These include inspecting whether tarps are in place over all open excavation pits and if stockpiles are covered.

5.10 Backup Inventory Provisions

An inventory of backup monitoring and testing equipment will be maintained at the project site during remedial activities. Should monitoring equipment fail and a replacement device(s) is not immediately available then all remedial work shall be stopped pending replacement of the monitoring equipment. The following backup equipment will be maintained onsite:

- Two personal air samplers (Gillian GilAir Plus Sampling Pump);
- One real-time Particulate Monitor (Thermo Scientific ADR 1500);
- One Mini RAE 3000;
- One Thermo Scientific Niton XL3t GOLDD+ XRF Analyzer; and,
- One hand held anemometer.

6.0 CORRECTIVE MEASURES

If a perimeter action level is exceeded during remedial activities, the following corrective measures will be implemented:

- Assess the problem.
- Direct corrective actions.
- Stop work.

Corrective actions may include, but are not limited to, increasing the frequency of dust control measures, modifying dust control procedures, changing soil removal procedures, and/or directing the use of alternate construction equipment or methods. The environmental monitor shall recheck perimeter air monitoring levels to determine if the selected corrective actions have been effective.

6.1 Exceedances

In the event that visible dust from soil disturbing activities is observed onsite, but does not cross the Site boundary, the following protocol will be followed to ensure adequate mitigation measures are employed:

1. A more aggressive application of the existing mitigation measures described in Section 4.1 will be utilized to mitigate the specific source of emissions upon initial observation.

2. If visible dust emissions continue for 60 minutes from the time of initial observation despite the more aggressive application of mitigation measures, the specific source of emissions will be temporarily shut down until the implemented mitigation method is effective, or due to changed conditions, is no longer necessary.

In the event that visible dust from soil disturbing activities is observed onsite and exceeds the 30-minute time-weighted average (TWA) of 20 $\mu g/m^3$ above background, the following protocol will be implemented:

1. If a 20 $\mu g/m^3$ PM_{10} above background level is exceeded at the downwind monitoring location based on a 30-minute TWA, the upwind dust monitoring station will be checked to confirm that background levels are not elevated.

2. If dust levels at the upwind monitoring location are elevated, construction activities will continue and the downwind monitoring location will be checked to ensure PM_{10} does not exceed 20 $\mu g/m^3$ above background levels, which is defined as the dust levels for upwind dust monitors.

3. If PM_{10} levels at the upwind dust monitor are not elevated, and downwind concentration minus the upwind concentration exceeds the PM_{10} action level, construction activities will be stopped, the specific source of fugitive dust emissions will

be immediately stopped and a more aggressive application of dust mitigation measures described in Section 4.1 or modifications thereto will be applied. Once the mitigation measures have been applied, construction activities will resume and observations will be conducted to confirm that mitigation measures were successful.

7.0 EMERGENCY RESPONSE

If an emergency occurs, the Environmental Monitor will notify the City of Novato immediately. An "emergency" would include an accidental release of contaminated soil and/or groundwater, or a dust control problem that represents an immediate threat to the public or causes contamination of an off-site location warranting the immediate notification of representatives of the offsite properties with sensitive receptors listed in Section 3.0. The emergency contact distribution list is included in Appendix B. If there is an emergency that the environmental believes is a threat to human life in the surrounding area 911 will be called immediately.

Upon notification of an emergency, the City of Novato will notify the representatives listed above and on the distribution list. The environmental monitor will specify the safety guidance and the guidance will be provided by the City of Novato to the representatives for further distribution to stakeholders.

8.0 PROCEDURES FOR UNKNOWN ENVIRONMENTAL FEATURES

If an unknown environmental feature (e.g., stained or odorous soil, tanks, etc.) is discovered during the remedial activities, those procedures listed in Section 6 of the SMP shall be followed. In addition to the measures noted in the SMP, the City of Novato, the Regional Water Board, and any other agency with potential jurisdiction over the environmental feature will be notified.

9.0 REFERENCES

City Council of the City of Novato. 2017. Resolution No. 2017-032, Resolution of the City Council of the City of Novato Adopting a Mitigated Negative Declaration for Hamilton Square (A.K.A., Main Gate Square) Proposed at 970 C Street, APN 157-980-05, Involving the Remediation of Contaminated Soil and Development of 31 Residential Condominiums. April.

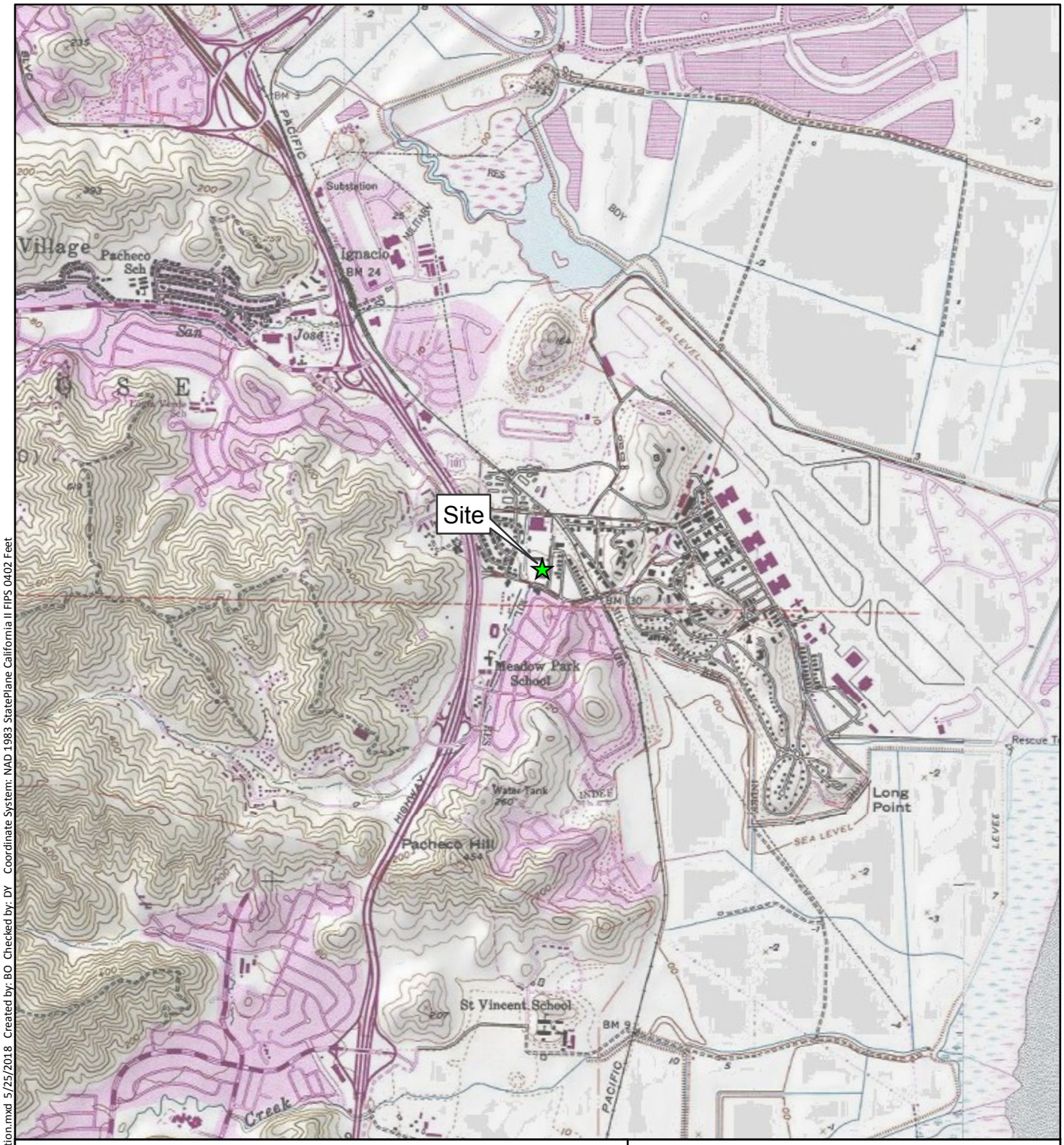
Urban Planning Partners Inc. 2017. Revised Initial Study, Main Gate Road and "C" Street Public Review. October.

West York Associates. 2018a. Remedial Action Plan, Hamilton Square Parcel, 970 C Street, Novato, California 94949, SFBRWQCB Case #T0609592161. April.

——. 2018b. Soil Management Plan. April.

——. 2018c. Sampling and Analysis Plan. April.

FIGURES



0 2,500 5,000 Feet

1 inch = 2,500 feet

N

Legend

Site Location

Base Map: USGS US Topo 7.5 - minute map for Novato CA

SAFETY FIRST

terraphase engineering

CLIENT: City of Novato

PROJECT: Remidial Action Plan
970 C Street, Novato, CA

PROJECT NUMBER: S038.001.002

Site Location

FIGURE 1

File: K:\GIS\Prj\S038 City of Novato\MXDs\Figure 1 - Site Location.mxd 5/25/2018 Created by: BO Checked by: DY Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

0 150 300 Feet

1 inch = 150 feet

N

Legend

Site Boundary

Base Map: Google Earth - February 2018

SAFETY FIRST

terraphase engineering

CLIENT: City of Novato

PROJECT: Remidial Action Plan
970 C Street, Novato, CA

PROJECT NUMBER: S038.001.002

Site Layout

FIGURE 2

File: K:\GIS\Prj\S038 City of Novato\MXDs\Figure 2 - Site Layout.mxd 5/25/2018 Created by: BO Checked by: DY Coordinate System: NAD 1983 StatePlane California II FIPS 0402 Feet

APPENDIX A
SAMPLE FIELD FORMS

Hamilton Square Dust Control Plan
Independent Third Party Inspection Checklist

Inspector Name & Company:	Date:
Weather:	BAAQMD Spare the Air day ☐ Yes ☐ No
Project Name and Location: Hamilton Square	

1. **Equipment and Activity Description.** Provide a description of equipment currently onsite and observed work activities. Use attached map to show locations of activities and provide description.
   - **A. Equipment**

   - **B. Activity Description**

2. **Observations**
   - **A. Describe whether dust is being generated and whether it is crossing the project boundary.** If dust is present, describe contractor response and timing of response. Note location and activity at issue.

   - **B. Describe observed mitigation measures in use** (hoses, water trucks, street sweeper, hand sweeping, road wetting, exit protection including stabilized entrance/exit, wheel wash, etc.).

   - **C. Describe material handling activities and associated mitigation measures** (drop heights minimized, VOC suppressant use, vehicles tarped, proper loading, driving speeds, offsite transport occurring, water added to material processing areas, water placed on internal haul routes, etc.).

D. **Describe stockpile control measures, temporary and final stabilization of inactive or completed areas** (note location and type of stockpile control and stabilization methods).

3. **Monitor Information** (provide monitor number, current reading and time).

DM #	ADR	Netronix	Current Reading	Time
UW DM #1				
DW DM #2				
UW PID #1				
DW PID #2				

4. **XRF Reading**

5. **Communications.** Provide details of communication with construction managers, site superintendents, regulatory personnel or members of the community; include name and time of discussion. Include recommendations here for enhanced mitigation measures and/or timing to rectify a current issue.

6. **Offsite observations/activities**

School Name	Offsite Monitoring Measures in Place (Yes/No)
North Bay Children's Center	
Novato Charter School	
Wonder Nook Pre-School	
Lanham Village Community Garden	
Hamilton Elementary	

Hamilton Square Dust Control Plan
Independent Third Party Inspection Checklist

7. Comments

CERTIFICATION:

I certify that I am an independent third party and I have observed, as stated and appropriate, details described in this report.

Printed Name and Date	Signature

Real-Time Air Monitoring Log
Hamilton Square Parcel

Date:	**Day of the Week:**	**Logged by:**	
Project Name:	Novato	**Project No:**	S038.001.003
Site Location:	970 C Street, Novato, CA		
Weather Conditions:			

Pre-Remediation Safety Measures		
Protective Plastic Sheeting in Place:		
North Bay Children's School	yes □	no □
Novato Charter School	yes □	no □
Wonder Nook Preschool	yes □	no □
Lanham Village (community garden)	yes □	no □
Hamilton Elementary School	yes □	no □

Anemometer Reading

Time	Predominant Wind Direction	Wind Speed	Notes
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Real-Time Air Monitoring Log
Hamilton Square Parcel

Mini RAE 3000 PID (VOC) Reading			
Time	**Upwind**	**Time**	**Downwind**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

ADR-1500 (PM_{10}) Reading			
Time	**Upwind**	**Time**	**Downwind**
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

Real-Time Air Monitoring Log
Hamilton Square Parcel

GilAir Pumps (Metals, Mercury, Asbestos) Reading				
Time	**Location**	**Sample Name**	**XRF Reading (lead)**	**Notes**
	Upwind			
	Downwind			
	Upwind			
	Downwind			
Sample Information				
Sample Name	**Up or Downwind**	**Start Time/ End Time**	**Flow Rate**	**Total Air Volume**
		/		
		/		
Post-Remediation Work Protocals				
Correct disposal of plastic sheets after use and tables wiped down:				
North Bay Children's School	yes □	no □		
Novato Charter School	yes □	no □		
Wonder Nook Preschool	yes □	no □		
Lanham Village (community garden)	yes □	no □		
Hamilton Elementary School	yes □	no □		

Notes:

Appendix B

High Volume Perimiter Sampling Logs

Date	Location	Start Time	Start Flow Rate (cfm)	Stop Time	Stop Flow Rate	Run time	Run time	Avg flow	Tasks Performed

APPENDIX B
LIST OF CONTACTS

Hamilton Square Remediation
970 C Street
Emergency Contacts

Robert Brown, Community Development Director
City of Novato

Steve Marshall, Planning Manager
City of Novato

Yancy Hawkins, Assistant Superintendent of Business and Operations
Novato Unified School District

Mark Silva
Novato Unified School District

Nikki Lloyd, Executive Director
Novato Charter School

April Jackson, Chief Business Officer
Novato Charter School

Ralph O'Rear
North Bay Children's Center

Kim Stafford, Liaison
Lanham Village HOA

Elizabeth Jones, Director
Wonder Nook Preschool

Amy Sonnie, Branch Manager
South Novato Library

Bonny White, Deputy Director
Marin County Free Library

Maggie Beth, Environmental Scientist
C.A. Regional Water Quality Control Board

Cindy Chain-Britton, Project Manager
C.A. Department of Toxic Substances Control

Casey Clement, Development Manager
Hamilton Square LLC

Andres Arce, Project Manager
Asbestos Management Group (Remediation Contractor)

Aubrey Cool, Senior Geologist
Ninyo & Moore

APPENDIX C
STOP WORK AUTHORITY

THOMPSON
DEVELOPMENT INC.

June 14, 2018

Delivered via email

Steve Marshall
City of Novato
899 Machin Ave
Novato, CA 94945

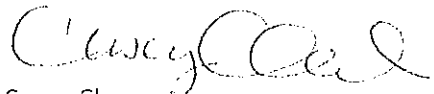
RE: Hamilton Square Remediation
970 C Street, Novato, CA
Mitigation Measure HAZ-1b.b.1

Dear Mr. Marshall,

In accordance with Mitigation Measure HAZ-1b.b.1, we acknowledge as Applicant that the environmental monitor as determined by the City of Novato shall be responsible for reporting directly to the City and shall have the authority to: a) direct the start of each remediation work day after confirming implementation of all pre-remediation safety measures; b) direct corrective action to maintain compliance with the monitoring plan; c) stop work at the project site for any violation of the monitoring plan protocols or an exceedance of the perimeter contaminant threshold(s) established in the monitoring plan; and d) monitor and confirm compliance with post-remediation work hygiene procedures and release of remediation personnel once such work is deemed complete.

All consultants and subcontractors associated with the project also acknowledge that the statement above is true and correct and that they will comply accordingly. Please see their signatures on the following page.

Sincerely,



Casey Clement

Hamilton Square, LLC
Applicant and General Contractor:

Signature | Paul Thompson (Printed Name) | 6/14/18 (Date)

Ninyo and Moore
Environmental Consultant:

Signature | Kris Larson (Printed Name) | 7/1/18 (Date)

AMG
Grading Subcontractor

Signature | Anna Arci (Printed Name) | 7/3/18 (Date)

Thompson Builders, Corp.
Dust Control Subcontractor

Signature | Laurie Weyl (Printed Name) | 7/2/18 (Date)