

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER No. R2-2014-0039

FINAL SITE CLEANUP REQUIREMENTS AND RESCISSION OF ORDER NO. 01-054
FOR:

JONES-HAMILTON COMPANY

for the property located at

8400 ENTERPRISE DRIVE
NEWARK
ALAMEDA COUNTY

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

1. **Site Location:** The property is located at 8400 Enterprise Drive, Newark, Alameda County (hereinafter the Site). The Site is located west of I-880 and east of salt evaporation ponds. The area of Newark was historically used for various industrial and commercial uses and is currently being redeveloped into a mix of residential and commercial uses as part of a transit-oriented development. The Site occupies an area of 21.27 acres and consists of three parcels (see attached Site Map). The eastern parcel (9.2 acres, APN 092-0116-060) is largely undeveloped. The western half of the Site consists of the former industrial facility area (6.23 acres, APN 092-0116-058) and capped wastewater impoundments (5.92 acres, APN 092-0116-059).
2. **Site History:** The northwestern portion of the Site was developed by the Jones-Hamilton Company when it began operations in 1956 as a chemical blending and packaging facility. Prior to 1956, the Site was used for agricultural purposes. From 1956 to the early 1980s a variety of chemicals were blended, packaged and warehoused on-site. Chemicals handled included sodium bisulfate, hydrochloric acid, arsenic acid, chromic acid, cupric acid, pentachlorophenol (PCP), tetrachlorophenol (TCP) and others. Sodium bisulfate was also manufactured on-site before 1985. Packaging of hydrogen peroxide was started in the early 1970s and sulfuric acid purification and packaging operations started in late 1985. Hydrogen peroxide and sulfuric acid were the only two chemicals packaged on-site since the end of 1985, and this use ended in 2001. Two underground storage tanks (USTs) were installed at the Site to provide gasoline for forklifts. A 500-gallon and 1,000-gallon UST were located north of Building 100. The USTs were removed in November 1986 as part of a permanent closure program.

Jones-Hamilton Company operated two surface wastewater ponds on the southwestern portion of the Site between 1975 and 1985. Each pond had a surface area of approximately 1.1 acres and a storage capacity of 1.5 million gallons. Stormwater and process wastewater were discharged into the ponds for evaporation. Both ponds were initially constructed of compacted native soil. The wastewater ponds were identified as the source of PCP contamination in shallow groundwater beneath the Site. They were closed in-place in October 1988 with a three-foot wide soil-bentonite slurry wall circling the two ponds, and covered by several layers of low-permeability surface covers. The Board certified the pond closure on December 12, 1990. The largely undeveloped eastern half of the Site had a slaughterhouse and meat packing facility on its northern end, which began operations in the early 1940s and ended in the early 1980's. The 9-acre former slaughterhouse parcel was purchased by Jones-Hamilton Company in the 1973 and its structures were demolished in 1986.

Jones-Hamilton Company ceased all operations in 2001. In 2010, Newark Enterprise Joint Venture, LLC (NEJV), became the owner of the Site.

3. **Future Site Use:** Currently, the Site is restricted to commercial and industrial uses via an October 4, 2005 environmental deed restriction recorded by Jones-Hamilton Company, as required by the Regional Water Board in Site Cleanup Order No. 01-054. Presently, the Site is slated for redevelopment as part of City of Newark's Dumbarton Transit Oriented Development Specific Plan. NEJV plans to construct 217 detached single family homes at the Site. The additional remedial actions described in this Order are needed to prepare the Site for residential use, and will result in cleanup that is protective of human health based on the residential land use approved by the City. The existing deed restriction will be allowed to be terminated. Prior to sale and occupancy of any of the new homes, a new deed restriction will be required at the Site to address management of any residual pollution present, risk posed by this pollution, and to ensure engineered controls are properly maintained and monitored. In the time period between termination of the existing deed restriction and recordation of a new deed restriction, the property will not be occupied for other than investigative, remedial or construction purposes.
4. **Named Discharger:** Jones-Hamilton Company is named as a discharger because of substantial evidence that its operations at the Site resulted in discharges of waste to soil and groundwater. These operations include its manufacture of wood preservative products and the presence of associated chemicals in soil and groundwater at the Site. Jones-Hamilton Company is also named as a discharger because it owned the Site during and after the time of its activities that resulted in the discharge of pollutants to soil and groundwater, had the knowledge of the discharge or the activities that caused the discharge, and had the legal ability as an operator and owner to prevent the discharge.

Ordinarily, the current property owner is named as a discharger in situations where contamination is present on or under the property and continues to migrate, as is the case here. In addition, current property owners are routinely named as dischargers to ensure access to the property for purposes of cleanup. NEJV, the current property owner, is not

named as a discharger in this Order for the following reasons: Jones-Hamilton Company has adequate financial resources to comply with this order, Jones-Hamilton Company has complied with the prior Order, Jones-Hamilton Company has requested that NEJV not be named in this order, and NEJV has promised to provide reasonable access for proposed investigative and cleanup activities. NEJV meets the criteria for being named as a discharger and may be named in future if the aforementioned circumstances change.

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 was subject to the following orders:

- a. Cleanup and Abatement Order No. 85-009 adopted March 14, 1985.
- b. Cleanup and Abatement Order No. 85-016 adopted June 27, 1985.
- c. Cleanup and Abatement Order No. 86-015 adopted October 16, 1986.
- d. Site Cleanup Requirements Order No. 89-110 adopted June 21, 1989.
- e. Site Cleanup Requirements Order No. 98-067 adopted July 15, 1998.
- f. Site Cleanup Requirements Order No. 01-054 adopted May 22, 2001.

These orders required investigation and remediation to allow for continued industrial use of the Site. All the orders except Order No. 01-054 have been rescinded. This Order supercedes and rescinds Order No. 01-054.

The purpose of updating Order No. 01-054 is to require additional cleanup to residential standards given the changes in the City's land use plans described in Finding 3 above. This Order requires additional investigative and remedial action necessary for soil, soil vapor, and groundwater in light of future residential development of the Site. The Order sets cleanup levels for groundwater, soil, soil vapor, and indoor air quality considering residential exposures. The Order requires the submittal and implementation of a Final Remedial Design Implementation Plan to address soil contamination (and groundwater in the source area of soil contamination). It also requires further evaluation of soil vapor and groundwater quality. Following these actions risk will be re-evaluated and an appropriate Risk Management Plan developed and implemented.

6. **Site Hydrogeology:** The Site is located within the Niles Cone groundwater basin. The vadose zone occurs in a layer of clays and silts overlying the Shallow Zone and extends approximately 3 to 7 feet below ground surface (bgs). The Shallow Zone is the uppermost aquifer and consists of silty sands and poorly graded sands. This semi-confined aquifer generally occurs from 5 to 11 feet bgs and is typically 10 to 15 feet thick. Groundwater flow in the Shallow Zone varies between northerly and northeasterly direction with a nearly flat gradient. The Newark Aquitard extends from the bottom of the Shallow Groundwater Zone to approximately 50 feet bgs. Thickness of the Newark Aquitard is highly variable. The upper portion of the Newark Aquitard consists of highly

plastic clays while the moderately permeable lower portion consists of silty and sandy clays. The Newark Aquitard is underlain by a semi-confined aquifer. The Newark Aquifer consists of sand and gravel and occurs at approximately 43-55 feet bgs. Groundwater of the Newark Aquifer generally flows west with a nearly flat gradient. Groundwater potentiometric measurements have reported an upward vertical hydraulic gradient between the Newark Aquifer and the Shallow Zone. Groundwater monitoring in the Site vicinity shows an upward vertical hydraulic gradient with transient hydraulic gradient reversals (upward to downward) between the Newark Aquifer and the Shallow Zone. Topographically, the Site is relatively level with an elevation of approximately 11 feet above Mean Sea Level.

The nearest surface water body in this area is Plummer Creek which is approximately 0.25 miles south of the Site. Plummer Creek is a tidal tributary of South San Francisco Bay. Plummer Creek drains into the Newark Slough at the southwest direction of the Site. The Newark Slough drains into the Bay.

7. **Remedial Investigation:** Remedial Investigation began in 1984. Groundwater at the Site has been monitored regularly since 1985. On-site and off-site investigations reported various organic compounds of concern in the shallow groundwater and in the vicinity of the two closed surface evaporation ponds. The detected chemicals in shallow soil are PCP, TCP, dioxins, furans, 1,1-dichloroethane (1,1-DCA), 1,2-dichloroethane (1,2-DCA), arsenic, chromium, total petroleum hydrocarbons as gasoline (TPHg), and fuel additives benzene, toluene, ethylbenzene, and xylenes (BTEX). The detected chemicals in shallow ground water are PCP, TCP, dioxins, furans, 1,1-DCA, 1,2-DCA, TPHg, and BTEX.

Between 1957 and 1984, a PCP-based wood treatment material was formulated within Buildings 110 and 150 at the Site. PCP was reportedly purchased from others and contained, as contaminants, other polychlorinated phenols, polychlorinated dibenzo-p-dioxins and polychlorinated dibenzofurans. Consequently, polychlorinated phenols, dioxins and furans are found in soils at the Site.

Groundwater and soil at the Site is impacted with 1,2-DCA. The source of the 1,2-DCA is unknown and it is also unknown whether the source originated onsite or offsite. 1,2-DCA historically has been detected at significantly higher concentrations on adjacent sites, and Jones-Hamilton reportedly has no known history of purchasing, storing or using 1,2-DCA.

The source of chromium and arsenic were likely from poor housekeeping practices in the formulation of chromated copper arsenate which used concentrated arsenic acid, copper oxide and chromic acid. These chemicals were reportedly purchased and blended by Jones-Hamilton Company between 1975 and 1987 at the Site.

The source of gasoline and BTEX was a 1,000 gallon UST, which was removed in November 1986. The contamination of gasoline constituents is limited to the former UST location (near well J10).

- a. **Soil:** In 1985, Jones-Hamilton began soil investigations within the operating facility and evaporation ponds areas of the Site. Initial results showed that shallow soils inside the ponds were impacted with heavy metals, PCP, PCP-derivative products, dioxins, and furans. High metal concentrations were found in soil along a ditch south of Buildings 150 and 160 which carried process wastewater to the evaporation ponds. In 2003, soil investigations of the facility area found metal concentrations above Regional Water Quality Control Board's Environmental Screening Levels (ESLs, *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Regional Water Board, December, 2013*) in 3 of 39 soil samples analyzed, including mercury (66 mg/kg maximum), arsenic (1,300 mg/kg maximum), and chromium (950 mg/kg maximum). Other ESL exceedances included 2-methylnaphthalene near the sump area and benzene near the former 1,000-gallon UST area. In 2004 and 2007, Jones-Hamilton Company performed excavation activities to remove mercury, arsenic, and chromium hotspots in the facility area (Finding 10).

Soil investigations in 1989 also detected PCP, 1,2-dichlorobenzene, total petroleum hydrocarbons as diesel (TPHd), and xylene contamination in the sump area southwest of Building 110 up to the following maximum concentrations: 48.3 mg/kg PCP, 2,030 mg/kg TPHd, 20.1 mg/kg xylene and 7.79 mg/kg 1,2-dichlorobenzene, respectively. Re-sampling of this area in 2003 reportedly did not detect these constituents above laboratory detection limits. In 2007, soil concentrations of 1,2-DCA were found to be greatest in the northwest corner of the capped impoundment area at 8.5 mg/kg at 8 ft bgs.

In October and November 2013, additional soil investigations reported that the upper 1 to 2 feet of soil at the Site exceeded the proposed dioxin cleanup goal of 4.6 pg/g (Finding 14.d).

- b. **Soil Vapor:** In September 2011, Cornerstone Earth Group (Cornerstone), on behalf of NEJV, performed a soil vapor investigation in support of residential development of the Site. Twelve vapor probes (SV-1 through SV-12) were installed to a depth of 4-5 feet bgs. Three vapor probes were installed in the undeveloped area (SV-9 through SV-11), six in the former facility area (SV-4 through SV-8, SV-12), and the remaining three near the former evaporation ponds (SV-1 through SV-3). The samples were analyzed for volatile organic compounds (VOCs) and TPHg. In vapor probes SV-4 and SV-5, soil vapor concentrations of benzene, 1,2-DCA, and TPHg were above residential soil vapor ESLs and reached as high as 475 $\mu\text{g}/\text{m}^3$, 60,000 $\mu\text{g}/\text{m}^3$, and 34,000 $\mu\text{g}/\text{m}^3$, respectively. 1,2-DCA was not detected in the other 9 soil vapor samples collected. Vinyl chloride concentrations were above residential soil vapor ESLs in one vapor probe (SV-4)

and reached as high as 370 $\mu\text{g}/\text{m}^3$. Tetrachloroethene (PCE) was detected above residential soil vapor ESLs in one of twelve vapor probes (SV-6) at a concentration of 466 $\mu\text{g}/\text{m}^3$. While soil vapor data has been collected, additional soil vapor data is needed to define at a higher resolution areas which have been impacted with soil vapor. This additional data can then be used to determine areas needing remediation and/or risk management.

- c. **Shallow Zone Groundwater:** Since 1985 shallow groundwater has been monitored at the Site for VOCs, semi-volatile organic compounds (SVOCs), gasoline and its constituents. Additionally, collective monitoring of 1,2-DCA has been done with neighboring sites (former Romic, Ashland, and FMC) to determine the extent of groundwater contamination. Presently, groundwater samples are analyzed for VOCs and SVOCs annually. In March 2014, a one-time sampling event for dioxins and furans was conducted.

As of January 24, 2014, the highest concentration of 1,2-DCA is 2,000 $\mu\text{g}/\text{L}$ in well J-3, a significant decrease from a historical high of 37,000 $\mu\text{g}/\text{L}$ found at the Site in 1991 after remedial measures were implemented (Finding 9). The highest concentration of PCP is 1,000 $\mu\text{g}/\text{L}$ in well J-2 (near the former surface evaporation ponds), a significant decrease from a historical high in 1994 of 1,500 $\mu\text{g}/\text{L}$ found at the Site. The highest concentration of TCP is 640 $\mu\text{g}/\text{L}$ in well J-2, a significant decrease from a historical high of 1,700 $\mu\text{g}/\text{L}$ found at the Site in 1993. The highest concentration of benzene is 5.0 $\mu\text{g}/\text{L}$ in well J-10, a significant decrease from a historical high of 27,000 $\mu\text{g}/\text{L}$ in 1991. TPHg concentration has consistently fallen below laboratory reporting limits since 2004 when it reached a high of 21,900 $\mu\text{g}/\text{L}$ in well J-10. No dioxins or furans have been found in groundwater above their Maximum Contaminant Level (MCL).

The Shallow Zone groundwater beneath the Site is naturally brackish (high in total dissolved solids). Although Shallow groundwater is not currently used for drinking water purposes, it overlies the Newark Aquifer from which brackish groundwater is extracted by the Alameda County Water District (ACWD) desalination facility to augment municipal water supplies.

Following source removal activities, shallow groundwater quality will need to be re-evaluated to in order to determine the effect of the removal activities on groundwater and to determine if additional actions are necessary.

- d. **Newark Aquifer:** The Newark Aquifer has been monitored collectively with neighboring sites (former Romic, Ashland, and FMC) using 11 monitoring wells including two monitoring wells (J-8, J-16), located on the southern portion of the Site. Concentrations of SVOCs in the Newark aquifer have not been detected. 1,2-DCA was detected in the Newark Aquifer as early as 1987 (Emcon Hydrogeologic Assessment Report, July 1987). However, annual groundwater monitoring in the Newark Aquifer has shown no detections of 1,2-DCA since

2005. In July 2009, low concentrations of BTEX were detected in wells J-8 and J-16 but have not been observed again. No additional work on the Newark Aquifer is needed.

- e. **Newark Aquitard:** The Newark Aquitard is not considered an effective barrier to the downward migration of solvent-impacted groundwater in the vicinity of the Site. The existence of contaminants in the Newark Aquifer at nearby sites (ethylene dibromide at FMC, PCE and trichloroethene (TCE) at former Baron Blakeslee, and 1,2-DCA at FMC and Ashland Chemical) indicates that transport of contaminants from the Shallow Zone to the Newark Aquifer has occurred in the vicinity of the Site. A hydraulic connection between the Shallow Zone and the Newark Aquifer has been reported from earlier investigations in the Site vicinity. Groundwater potentiometric measurements at the Site have reported a consistent upward vertical hydraulic gradient between the Newark Aquifer and the Shallow Zone. However, groundwater monitoring at Baron-Blakeslee (cross-gradient of the Site) reports that transient reversals in the vertical gradient (from upward to downward) has led to contamination of the Newark Aquifer with PCE and TCE.
8. **Risk Assessment:** In September 2007, URS voluntarily submitted on behalf of Jones-Hamilton Company a *Draft Human Health Risk Assessment* in response to a prospective purchaser of the Site who planned to develop it for commercial/industrial uses. The assessment provided Maximum Allowable Concentrations (MACs) of chemicals of potential concern in soil to enable remediation and risk management decisions based on commercial/industrial land use. In 2011, the City of Newark Dumbarton Transit Oriented Development Specific Plan changed the Site zoning to residential. Consequently, in December 2012, Cornerstone (on behalf of Jones-Hamilton) submitted a revision of the 2007 risk assessment (*Revised Remedial Actions and Cleanup Standards Report - RAP*) that recalculated MACs based on residential use. These are known as Residential Maximum Allowable Concentrations (RMACs). Chemicals of potential concern include arsenic, chromium, dioxins/furans, PCP, TCP and 1,2-DCA, and vinyl chloride. The revision identified adult and child residents as two receptors for potential chemical exposure in addition to construction workers previously identified in the 2007 risk assessment. The revision also identified inhalation (vapor intrusion into indoor environments) and direct contact (incidental ingestion, dermal contact, outdoor inhalation of dusts) as potentially complete and significant exposure pathways. The risk assessment specifies a vapor intrusion risk estimate of 3.1×10^{-4} which exceeds the risk management range of 1×10^{-6} to 1×10^{-4} . The primary risk drivers include 1,2-DCA and vinyl chloride.

An additional Human Health Risk Assessment will need to be conducted after remedial soil excavation activities and soil vapor evaluations are performed. This assessment will be used in development of an appropriate risk management plan for the Site.

9. **Adjacent Sites:** Five neighboring sites are currently conducting groundwater cleanup under Board Orders. The following sites with their corresponding addresses are: FMC

(8787 Enterprise Drive, Newark), Romic Environmental Technologies (37445 Willow Street, Newark – formerly known as Romic Chemicals), Ashland Chemicals (8610 Enterprise Drive, Newark), former Baron Blakeslee (8333 Enterprise Drive, Newark), and Torian Properties (37555 Willow Street, Newark). Four of these sites are located immediately downgradient of the Site. Former Baron Blakeslee is cross-gradient of the Site and is currently undergoing soil and groundwater remediation to address PCE and TCE contamination. Pollutants from the Site and neighboring sites have commingled to some extent in the Shallow Zone. There is currently limited coordination of remedial actions involving groundwater elevation measurements of the Shallow Zone and the Newark Aquifer.

10. **Interim Remedial Measures:** An extraction and treatment system operated on the Site from 1989 to 2001. The system used five Shallow Zone groundwater wells. The groundwater was treated with granulated activated carbon prior to discharge to the sewer system. Two of the five extraction wells (EW-2 and EW-4) are located inside the capped impoundments, one (J-10) is located near the former 1,000 gal. UST, and the other two (J-4R and J-15) are located in areas near the closed evaporation ponds where shallow groundwater containing 1,1-DCA, residual PCP and TCP was extracted. In May 2006, well J-4R was destroyed by permit. In 2001, the pump-and-treat system was discontinued after a plume modeling report determined that its contribution was insignificant in contaminant removal (URSGWC, December 1999). As a result of the operation of this system, the following reduction in chemical concentrations occurred: (1) PCP concentrations decreased from the peak level of 1500 µg/L in 1994 to 700 µg/L in 2000, (2) TCP concentrations decreased from the peak level of 1700 µg/L in 1993 to 680 µg/L in 2000, (3) 1,1-DCA concentrations decreased from 120 µg/L in 1996 to 86 µg/L in 2000, (4) 1,2-DCA concentrations decreased from 37,000 µg/L in 1991 to 2,100 µg/L in 2000, and (5) benzene concentrations decreased from 27,000 µg/L in 1991 to 68 µg/L in 2000.

During 2003-2004 and 2006-2007, Jones-Hamilton conducted closure activities on the Site under guidance of the City of Newark Fire Department's Hazardous Materials Bureau. Closure activities involved: (1) removal of heavy metals-contaminated soils inside the former Building 160, (2) removal of PCP-contaminated soils exceeding 5 mg/kg (3) removal of arsenic-contaminated soils exceeding 10 mg/kg, (4) removal of chromium-contaminated soils exceeding 100 mg/kg, and (5) in-situ pH neutralization for soils impacted with sulfuric acid, hydrochloric acid, and sodium hydroxide.

Approximately 358 tons of contaminated soils were disposed offsite at the Kettleman Hill's Class I Landfill in Kettleman City, California. All buildings were demolished by the end of January 2007.

11. **Remedial Design Implementation Plan:** In December 2012, Cornerstone submitted on behalf of NEJV the *Revised Remedial Actions and Cleanup Standards Report* (RAP) which proposed corrective actions for Site soil remediation and developed soil residential cleanup goals (also referred to as RMACs) in support of planned residential development. In January 2014, a Removal Action Plan Addendum (Addendum) was submitted by

Cornerstone to expand on soil quality evaluation of undeveloped areas, soil re-use activities, soil sampling verification, and waste characterization and disposal. In April 2014, the Water Board staff approved the RAP and Addendum and requested a comprehensive Remedial Design Implementation Plan (RDIP) prior to initiation of soil removal activities. A draft RDIP was submitted on July 21, 2014. Regional Water Board staff will provide comments on the draft RDIP which will need to be adequately addressed prior to approval.

12. **Soil Vapor Investigation** A *Workplan for Soil Vapor Quality Investigation* dated August 4, 2014, was approved by Regional Water Board staff. The results of this soil vapor evaluation will be used to identify areas of the Site which require remediation and/or risk management measures.

13. **Basis for Cleanup Levels**

- a. **General:** 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.

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 which is reasonable, if background levels cannot be restored. 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. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

Potential impact to human health due to exposure to contaminants in soil and groundwater has been the primary concern for the Site and has therefore been considered in selecting soil and groundwater cleanup standards, in addition to protection of groundwater resources.

- b. **Beneficial Uses:** The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the 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 Water Board and approved by the State Water Resources Control Board, Office of Administrative Law and the U.S. EPA, where required.

Regional Water Board Resolution No. 89-39, "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 (TDS), 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:

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

At present, there is no known use of groundwater underlying the Site for the above purposes.

The existing and potential beneficial uses of the Plummer Creek, a tidal tributary of South San Francisco Bay, include:

- Water contact and non-contact recreation
- Wildlife habitat
- Estuarine habitat
- Preservation of rare and endangered species

- c. **Basis for Groundwater Cleanup Levels:** The groundwater cleanup levels for the Site are based on applicable water quality objectives and are the more stringent of EPA and California primary MCLs. Cleanup to this level will result in acceptable residual risk to humans and protect beneficial uses of groundwater. MCLs are required as groundwater cleanup standards because the Site overlies the Newark Aquifer which is used by ACWD Newark Desalination Facility to supply municipal drinking water. For pollutants where MCLs have not been developed, cleanup levels are risk-based, as summarized in either ESLs or EPA Regional Screening Levels (RSLs).
- d. **Basis for Soil Cleanup Levels:** The site-specific soil cleanup levels are based on risk-based Residential Maximum Allowable Concentrations (RMACs). These soil cleanup levels will protect human health in a residential setting and prevent leaching of contaminants to groundwater. Soil cleanup levels for arsenic and chromium (total) are based on background levels

- e. **Basis for Soil Gas Cleanup Levels:** The soil gas cleanup levels for the Site are intended to prevent vapor intrusion into occupied buildings in an unrestricted land use scenario and will result in acceptable residual risk to humans.
 - f. **Basis for Indoor Air Cleanup Levels:** The indoor air cleanup levels for the Site are intended to prevent unhealthy levels of VOCs in indoor air in an unrestricted land-use scenario as a result of vapor intrusion. These levels will apply to future buildings designated for human occupancy.
14. **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 may consider revising those cleanup levels.
 15. **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 assessment and evaluation for this Site found contamination-related risks in excess of these acceptable levels. Active remediation will reduce these risks over time. However, risk management measures are needed at this Site during and after active remediation to assure protection of human health. A risk management plan setting forth engineering controls (such as engineered caps, vapor mitigation or wellhead treatment) will be developed. A deed restriction, incorporating the risk management plan will enforce compliance with the risk management plan, thereby protecting engineered controls. The deed restriction would also prohibit use of underlying groundwater and other land uses or activities, as appropriate.
 16. **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.
 17. **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.
 18. **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.
 19. **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 meet MCLs designed to protect human health and ensure that water is safe for domestic use.

20. **CEQA:** The City of Newark (City) is the lead agency under CEQA and certified, in July 2011, the Final EIR for the Dumbarton Transit Oriented Development Specific Plan. In March 2014, the City certified the Final Supplemental Environmental Impact Report (SEIR) (SCH#2010042012) for the Trumark Dumbarton Transit Oriented Development Residential Project.

The Regional Water Board, as a responsible agency, has reviewed and considered the environmental effects of the project as shown in the Final EIR and the SEIR. The Water Board finds that the significant environmental effects of the proposed project, which are within the Board's purview and jurisdiction, have been identified and mitigated to less than significant levels.

21. **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 and has consider these comments.

IT IS HEREBY ORDERED, pursuant to section 13304 of the 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.

B. CLEANUP LEVELS

1. **Groundwater Cleanup Levels:** The following groundwater cleanup levels shall be met in all wells identified in the attached Self-Monitoring Program:

Constituent	Level (µg/l)	Basis
1,2-Dichloroethane (1,2-DCA)	0.5	California MCL
1,1-Dichloroethane (1,1-DCA)	5.0	California MCL
Pentachlorophenol (PCP)	1.0	California MCL
Tetrachlorophenol (TCP)	240	USEPA Region 9 RSL ¹
Vinyl chloride	0.5	California MCL
Tetrachloroethene (PCE)	5	California MCL
Trichloroethene (TCE)	5	California MCL
Benzene	1.0	California MCL
Ethylbenzene	30	GCCV ²
Toluene	40	GCCV
Xylenes (Total)	20	GCCV
Total Dioxin/Furan TEQ	0.00003	California MCL
TPH-gasoline	100	GCCV
TPH-diesel	100	GCCV
Arsenic	10	California MCL
Chromium (Total)	50	California MCL
Mercury	2	California MCL

µg/L = microgram per liter

¹ RSL = Regional Screening Levels (May, 2014).

² GCCV = Gross Contamination Ceiling Value (Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Regional Water Board, December, 2013).

2. **Soil Cleanup Levels:** The following soil cleanup levels shall be met in all on-Site vadose-zone soils. If additional constituents are detected in soil during site cleanup activities, the discharger may choose to use as cleanup levels the residential ESLs or propose a cleanup level.

Constituent	Level (mg/kg)	Basis
Arsenic	10	(background)
Chromium	100	(background)
Total Dioxin/Furan TEQ	0.0000046 (soils 0-5 feet below final grade) 0.00005 (soils greater than 5 feet below final grade)	RMAC: Human health – direct exposure (site- specific risk assessment)
Pentachlorophenol	4.9 (soil contact)	RMAC: Human health – direct exposure (site- specific risk assessment)
1,2-Dichloroethane	0.44 (soil contact) 0.074 (protection of indoor air)	RMAC: Human health – direct exposure (site- specific risk assessment)

mg/kg = milligram per kilogram

RMAC = residential maximum allowable exposure

3. **Soil Gas Cleanup Levels:** The following soil gas cleanup levels shall be met in all on-site vadose-zone soils.

Constituent	Level ($\mu\text{g}/\text{m}^3$)	Basis ¹
1,2-Dichloroethane (1,2-DCA)	58	Human Health – VI
1,1-Dichloroethane (1,1-DCA)	760	Human Health – VI
1,1-Dichloroethene (1,1-DCE)	100,000	Human Health – VI
Vinyl chloride	16	Human Health – VI
Tetrachloroethene	210	Human Health – VI
Trichloroethene	300	Human Health – VI
Benzene	42	Human Health – VI
Ethylbenzene	490	Human Health – VI
Toluene	160,000	Human Health – VI
Xylenes (Total)	52,000	Human Health – VI
TPH-gasoline	50,000	Human Health – VI
TPH-diesel	6,800	Human Health – VI

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter

¹ VI = Vapor Intrusion into Buildings, residential land use scenario (Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Regional Water Board, December, 2013).

4. **Indoor Air Cleanup Levels:** The following indoor air cleanup levels shall be met in occupied on-Site buildings. Any vapor mitigation system designs proposed for the Site must, at all times, achieve these standards at a minimum.

Because of possible detection of VOCs originating from building materials, furnishings and household products, air samples for comparison to indoor air cleanup levels may be collected from probes installed above the sub-slab membrane and below the concrete slab, with probe design approved by Regional Water Board staff. This sampling location immediately above the sub-slab membrane may be used as the point of compliance.

Constituent	Level ($\mu\text{g}/\text{m}^3$)	Basis ¹
1,2-Dichloroethane (1,2-DCA)	0.12	Human Health - Inhalation
1,1-Dichloroethane (1,1-DCA)	1.5	Human Health - Inhalation
1,1-Dichloroethene (1,1-DCE)	210	Human Health - Inhalation
Vinyl chloride	0.031	Human Health - Inhalation
Tetrachloroethene	0.41	Human Health - Inhalation
Trichloroethene	0.59	Human Health - Inhalation
Benzene	0.084	Human Health - Inhalation
Ethylbenzene	0.97	Human Health - Inhalation
Toluene	310	Human Health - Inhalation
Xylenes (Total)	100	Human Health - Inhalation
TPH-gasoline	100	Human Health - Inhalation
TPH-diesel	140	Human Health - Inhalation

$\mu\text{g}/\text{m}^3$ = microgram per cubic meter

¹ Inhalation in residential land use scenario (Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Regional Water Board, December, 2013).

C. TASKS

1. TERMINATE EXISTING DEED RESTRICTION

COMPLIANCE DATE: November 14, 2014

Submit a copy of the deed restriction termination that has been duly signed by all named parties and has been recorded with the appropriate County.

2. FINAL REMEDIAL DESIGN IMPLEMENTATION PLAN

COMPLIANCE DATE: November 14, 2014

Submit a technical report acceptable to the Executive Officer which adequately addresses Regional Water Board staff's comments on the July 21, 2014 draft RDIP described in Finding 11.

3. **IMPLEMENTATION OF SOIL VAPOR QUALITY EVALUATION WORK PLAN**

COMPLIANCE DATE: November 30, 2014

Submit a technical report acceptable to the Executive Officer documenting the implementation of the work plan described in Finding 12. The report may present preliminary risk management measures for vapor intrusion, to be updated in the Risk Management Plan set forth in Task 7 following implementation of the final RDIP.

4. **IMPLEMENT FINAL REMEDIAL DESIGN IMPLEMENTATION PLAN**

COMPLIANCE DATE: April 30, 2015

Submit a technical report acceptable to the Executive Officer documenting the implementation of the Final RDIP. The technical report shall include documentation of completion of all tasks outlined in the Final RDIP and assess the effectiveness of the source removal.

5. **WORK PLAN TO RE-EVALUATE GROUNDWATER QUALITY**

COMPLIANCE DATE: April 31, 2015

Submit a work plan acceptable to the Executive Officer that re-evaluates groundwater quality following soil removal activities described in Task 3.

6. **IMPLEMENTATION OF WORK PLAN TO RE-EVALUATE GROUNDWATER QUALITY**

COMPLIANCE DATE: July 30, 2015

Submit a technical report acceptable to the Executive Officer documenting the implementation and results of investigation set forth in the work plan identified in Task 5. To the extent groundwater exceeds MCLs, the report shall also propose a Self-Monitoring Program and schedule. Additionally, the report shall evaluate whether or not additional actions are needed to achieve groundwater cleanup levels. If additional corrective action is needed, provide a work plan acceptable to the Executive Officer, including a feasibility study, to evaluate alternative final remedial actions and recommend one or more alternatives for implementation. The work plan must propose remedial work that has a high probability of eliminating unacceptable threats to human health and restoring beneficial uses of water in a reasonable time, with "reasonable time" based on the severity of impact to the beneficial use (for current impacts) or the time before the beneficial use will occur (for potential future impacts).

7. **RISK MANAGEMENT PLAN**

COMPLIANCE DATE: July 30, 2015

Submit a Risk Management Plan (RMP), acceptable to the Executive Officer. The RMP shall include a risk assessment that assesses risks and identifies exposure pathways. The RMP shall propose measures to mitigate risks and reduce/minimize exposure via engineering and institutional controls. The RMP shall address risks prior to, during and post-construction. The RMP shall also propose a reporting program and schedule for the period during construction (Construction Reporting) and following construction (Long-Term Reporting). This Construction Reporting shall document the proper installation, construction and inspection of engineering controls. The Long-Term Reporting shall include a long-term monitoring and reporting program following construction of the proposed homes to insure continued protection of engineering controls. The dischargers may propose RMP modifications, as appropriate. Any modifications must be approved by the Executive Officer.

8. **PROPOSED DEED RESTRICTION**

COMPLIANCE DATE: August 1, 2015

Submit a proposed deed restriction, acceptable to the Executive Officer, to limit onsite occupants' exposure to Site contaminants to acceptable levels. The proposed deed restriction shall prohibit the use of shallow groundwater beneath the site as a source of drinking water until cleanup levels are met, protect engineering controls and prohibit other land uses that would not be protective of human health, as appropriate. The proposed deed restriction shall incorporate by reference and require compliance with the Risk Management Plan required by Finding 7 above. The proposed deed restriction shall name the Regional Water Board as a beneficiary and shall anticipate that the Regional Water Board will be a signatory.

9. **RECORDATION OF DEED RESTRICTION**

COMPLIANCE DATE: 60 days after Executive Officer approval of the proposed deed restriction and prior to sale of any homes

Submit a technical report acceptable to the Executive Officer documenting that the deed restriction has been duly signed by all named parties and has been recorded with the appropriate County Recorder. The report shall include a copy of the recorded deed restriction. Since only the Site owner can record the deed restriction, this task only applies to Newark Enterprise Joint Venture, LLC. In the event the Site ownership transfers to another owner prior to recordation and/or

cleanup of the Site, this Order will be amended to include the new owner as a named discharger, as appropriate.

10. **RISK MANAGEMENT PLAN REPORTING**

COMPLIANCE DATE: Initial reporting, no later than December 31, 2015. Additional reporting will be as set forth in the approved RMP.

Submit technical reports acceptable to the Executive Officer documenting implementation of the RMP (and any modifications which have been approved by the Executive Officer). Initial reporting will the date certain described above. The additional reporting procedures are described in detail within the approved RMP.

11. **FIVE-YEAR STATUS REPORT TO EVALUATE EFFECTIVENESS OF REMEDIAL ACTIONS TAKEN**

COMPLIANCE DATE: January 31, 2016 and every five years thereafter

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the remedial actions taken. The report should include as appropriate:

- a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment, including the application and effectiveness of any contingency plan for in-situ remediation;
- b. Performance data (e.g., groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted, if applicable);
- c. Comparison of contaminant concentration trends with cleanup levels;
- d. Comparison of anticipated versus actual costs of cleanup activities;
- e. Summary of additional investigations (including results) and significant modifications to remediation systems; and
- f. Additional remedial actions proposed to meet cleanup levels (if applicable), including a time schedule.

If cleanup levels have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup levels and may propose an alternative cleanup strategy.

12. **PROPOSED CURTAILMENT**

COMPLIANCE DATE: 60 days prior to proposed curtailment

Submit a technical report acceptable to the Executive Officer containing a proposal to curtail remediation. Curtailment includes system closure (e.g., well abandonment), system suspension (e.g., cease extraction but wells retained), and significant system modification (e.g., major reduction in extraction rates, closure of individual extraction wells within extraction network). The report should include the rationale for curtailment. Proposals for final closure should demonstrate that cleanup levels have been met, contaminant concentrations are stable, and contaminant migration potential is minimal.

13. **IMPLEMENTATION OF CURTAILMENT**

COMPLIANCE DATE: 60 days after Executive Officer approval of proposed curtailment

Submit a technical report acceptable to the Executive Officer documenting completion of the tasks identified in Task 8.

14. **EVALUATION OF NEW HEALTH CRITERIA**

COMPLIANCE DATE: 90 days after evaluation report required by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved remedial action plan of revising one or more cleanup levels in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

15. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after evaluation report required by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved remedial action plan and cleanup levels for this Site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be required unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved remedial action plan or cleanup levels.

16. **Delayed Compliance:** If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer, and the Regional Water Board may consider revision to this Order.

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 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 which 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 required 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 on-site (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 agencies:
 - a. City of Newark
 - b. County of Alameda Department of Environmental Health
 - c. Alameda County Water District

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 property 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 Emergency Management Agency required pursuant to the Health and Safety Code.

- 11. **Rescission of Existing Order:** This Order supercedes and rescinds Order No. 01-054.
- 13. **Periodic SCR Review:** The Regional Water Board will review this Order periodically and may revise it when necessary.

October 22, 2014

Date

Bruce H. Wolfe
Executive Officer

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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
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Attachments: Site Map



SITE