SEAN G. HERMAN
SENIOR COUNSEL
DIRECT DIAL (415) 995-5899
DIRECT FAX (415) 995-3429
E-MAIL sherman@hansonbridgett.com

HansonBridgett

February 13, 2023

VIA E-MAIL AND OVERNIGHT MAIL

Michael Van Lonkhuysen, Planning Manager
City of Daly City, Planning Division
333 90th Street
Daly City, CA 94015
mvanlonkhuysen@dalycity.org

Re: *Serramonte Del Rey Campus Redevelopment, City of Daly City*
Federal and State Wetlands Jurisdiction Assessment

Dear Mr. Van Lonkhuysen:

Hanson Bridgett, LLP represents Jefferson Union High School District concerning the Serramonte Del Rey Campus Development in Daly City. This letter evaluates the ponding on the Jefferson Union High School District's 22-acre property south of Serramonte Boulevard in Daly City, APN 091-211-2390 ("Site") under legal standards for regulating wetlands, and concludes that evidence demonstrates that it is not a jurisdictional wetland.

Three enclosures accompany this letter:

- Exhibit A: Hydrologic Reconnaissance Report by Balance Hydrologics, Inc. dated February 7, 2023;
- Exhibit B: Engineering Site Investigation Report by BKF Engineers, dated February 7, 2023;
- Exhibit C: Drainage Maintenance History Letter by Jefferson Union High School District, dated February 9, 2023.

These enclosures show how deferred maintenance of the Site's drainage system has created the temporary ponding conditions in the Site's southwestern edge. As this letter explains, the artificial and non-permanent ponding meets neither the federal nor state definitions for regulated wetlands.

I. BACKGROUND ON SITE CONDITIONS

Jefferson Union High School District plans to develop affordable and market-rate housing at the Site, configured into six separate buildings comprised of multi-family units. Water has congregated in the southwestern portion of the Site. That southwestern area is less than 1,000 square feet and is unconnected to a natural drainage of water. The Site handles runoff instead through a designed drainage system.

The District built the drainage system in 1968 as part of the Site's original site plans. The drainage system captures runoff migrating onto and from the Site through swales, drainage inlets, and subsurface drain lines. (Ex. A [Balance Hydrologics, Inc. Report, Feb. 7, 2023], at pp. 3, 4; Ex. B [BKF Site Investigation Report, Feb. 7, 2023], at p. 3, Ex. 1.) It then directs the runoff offsite. (Ex. A at pp. 2-3; Ex. B at p. 2.)

Between August and December 2022, Balance Hydrologics, Inc. and BKF Engineers investigated the southwestern area to assess how the existing drainage system, site grading, and site hydrology affect onsite storm water drainage. (Ex. A at pp. 3, 4; Ex. B at p. 1.) That investigation found that maintaining the drainage system as designed would not result in ponding, flooding, or erosion on the Site. (Ex. A at p. 3; see also Ex. B at pp. 4-6 [finding same].) But recently, the District has deferred maintenance of the drainage system and grading as it has focused maintenance elsewhere. (Ex. C [Van Raaphorst Letter, Feb. 9, 2023], at pp. 2-3.) This deferred maintenance, the reports conclude, has created a low-lying area that cannot drain adequately into the drainage system. (Ex. B at p. 5.) Water then ponds in these low-lying areas. (Ex. A at p. 6.) This water ponding is a more recent phenomenon at the Site. (Ex. C at p. 2.)

The artificial ponding from recent deferred maintenance has created conditions suitable for the vegetation now found in the southwestern area. (Ex. A at p. 6.) The ponding is artificial because regular maintenance—such as clearing vegetation and debris from inlets, removing mineral deposits within drainage pipes, or maintaining proper ground slope towards the inlets—will restore the positive drainage pathway to its original design and eliminate the ponding. (Ex. B at p. 5.) Put otherwise, "this routine maintenance will eliminate water ponding and soil saturation" and will "restore the area to its natural state." (*Id*.; see also Ex. A at p. 6 [concluding same].)

II. BACKGROUND ON WETLANDS REGULATIONS

The federal Clean Water Act and the California Porter-Cologne Water Quality Control Act regulate wetlands. Three regulators enforce these laws in California: the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency share jurisdiction over "waters of the United States," while the California Regional Water Quality Control Boards have jurisdiction over "waters of the State." Their jurisdictions can overlap: all features that the Army Corps or EPA have determined "in an approved determination" are "waters of the United States" are also "waters of the State." (Cal. Code Regs., tit. 23, § 3831(w); State Water Resources Control Board, State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, adopted 2019, revised 2021 ["State Wetland Procedures"] § II, at p. 2 fn. 2.)[1]

Both federal and state law rely on the 1987 Army Corps Wetlands Delineation Manual, which provides a three-parameter test for identifying whether an aquatic feature could be a wetland: if it has (1) hydrophytic vegetation; (2) hydric soils; and (3) wetlands hydrology. Federal jurisdiction, however, does not reach all wetlands delineated under the 1987 Manual. Only those waters with a "significant nexus" to a traditionally navigable water meets this federal jurisdictional requirement. (*Rapanos v. U.S.* (2006) 547 U.S. 715, 779.) Wetlands isolated from navigable waters lack that nexus, and thus fall outside federal jurisdiction. (*SWANCC v. Army Corps of Engineers* (2001) 531 U.S. 159, 167-168.)

Like the Army Corps, the Regional Boards rely on the 1987 Army Corps Manual to determine whether an aquatic feature is a wetland. (State Wetland Procedures § 3 at p. 3.) But an "isolated wetland that has historically been outside of the Corps jurisdiction may still be … a water of the state." (State Water Resources Control Board, Implementation Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, April 3, 2020 ["State Implementation

---

[1] The State Wetland Procedures are found at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/2021/procedures.pdf.

Guidance"], at 10.)[2] The State recently clarified whether the Regional Boards have jurisdiction over an aquatic feature by defining regulated "waters of the State" to include: (1) natural wetlands; (2) wetlands created by modifying surface waters; and (3) artificial wetlands meeting certain criteria, including wetlands that have "[r]esulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape." (State Wetland Procedures § 2, at pp. 2-3.)

Aquatic features that do not fit within the above categories are not wetlands regulated under either the Clean Water Act or the Porter-Cologne Water Quality Control Act.

III. THE SITE HAS NO REGULATED WETLANDS

Because water has ponded in the southwestern portion of the Site, this letter considers whether the Clean Water Act or Porter-Cologne Water Quality Control Act has jurisdiction over the Site to impose wetlands permitting requirements. As the enclosed hydrology, engineering, and drainage history reports explain, the southwestern area is isolated from navigable waters, artificially created as a result of deferred drainage system maintenance, and a temporary phenomenon. Neither the Clean Water Act nor Porter-Cologne Act has permitting authority over aquatic features that arise under these circumstances.

A. There is no federally regulated wetland at the Site.

The Clean Water Act's jurisdiction does not extend to the Site for at least two reasons. First, the southwestern area does not meet all three parameters under the 1987 Army Corps Manual. Even if the area contains hydrophytic vegetation and hydric soils, no evidence indicates that the area enjoys wetlands hydrology. Second, even if the area met all three parameters, it is isolated and not connected to any navigable water. (See Ex. A at p. 2 [Site "is more than a mile from the nearest waterbody"]; *SWANCC*, *supra*, 531 U.S. at p. 167 [Clean Water Act does not regulate isolated waters].) For either reason, the Site's ponding is not a regulated "water of the United States" under the Clean Water Act.

B. There is no state-regulated wetland at the Site.

The Porter-Cologne Act's jurisdiction also does not extend to the Site for four reasons.

First, because the southwestern area does not meet the 1987 Army Corps Manual parameters, it is not a state-regulated wetland. As explained, even if the area contained hydrophytic vegetation and hydric soils, there is no evidence that it enjoys wetlands hydrology. So the area does not meet the three parameters under the 1987 Army Corps Manual.

Second, even if the Site meets the 1987 Army Corps Manual parameters, the Site's ponding lacks "relative permanence" that would trigger the Porter-Cologne Act's jurisdiction. As discussed, the Porter-Cologne Act regulates "[a]rtificial wetlands that ... resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape." (State Wetland Procedures § 2, at pp. 2-3.) In adopting its State Wetland Procedures, the State Board explained that "[b]y requiring that the wetlands are relatively permanent, the framework excludes wetlands that are temporary or transitory." (State Implementation Guidance at p. 11.) And by requiring that wetlands be a "part of the natural landscape," the State Wetlands Procedures require that "the wetland

---

[2] The State Implementation Guidance is found at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredge_fill/revised_guidance.pdf.

is self-sustaining without ongoing operation and maintenance activities, and [that it] provides similar ecosystem services as natural wetlands." (*Id*.)

To illustrate, the State Board offers examples of regulated and unregulated artificial wetlands. The Porter-Cologne Act regulates an aquatic feature when "water flow is permanently redirected as the result of human activity, such as grading in another area, such that new wetlands form in areas that were previously dry." (State Implementation Guidance at p. 11.) This example is unlike the Site's temporary ponding, which does not result from permanently redirected water flow. Unlike the State Board's permanent grading example, the Site's ponding conditions result from a temporary redirection of water flow due to recently deferred drainage system maintenance. (See Ex. A at p. 6 ["deferred maintenance thus has artificially created low-lying wet patches suitable for establishing the willows and rushes"]; Ex. B at p. 5 [deferred maintenance "has created a low-lying area that cannot drain adequately into the drainage system"; Ex. C at p. 2 [ponding "is a more recent phenomenon"].)

By contrast, the State Board offers a "tire rut" as another example of a "transient depression caused by human activity" that would be excluded from regulation. (State Implementation Guidance at p. 11.) Like the unregulated tire rut, recent deferred maintenance has temporarily led to transient depressions and ponding. (Ex. A at p. 6.) The Site's drainage system thus is analogous to the unregulated tire rut as it is a transient depression caused by human activity. And like the tire rut, the Porter-Cologne Act does not regulate it as a jurisdictional wetland.

Third, the Porter-Cologne Act also does not regulate ponding from the drainage system because the system requires "ongoing maintenance." As discussed, the Porter-Cologne Act does not regulate an artificial wetland if it is "subject to ongoing operation and maintenance." (State Wetland Procedures § 2, at pp. 2-3.) The drainage system that has allowed temporary ponding at the Site requires "ongoing operation and maintenance," like clearing and repairing the storm water pipes. (See Ex. B at p. 3 ["It is standard practice to maintain drainage systems by regularly managing and clearing vegetation and maintaining topography (e.g., removing temporary soil accumulation) around inlets and the drainage path leading to the inlets."]; Ex. C at p. 3 [explaining how the District has reinstated regular maintenance of the drainage system].) "Maintaining the drainage system as it was designed will reduce or eliminate ponding, flooding, and erosion on site." (Ex. A at p. 3.) As the Site's human activity creating the ponding is subject to ongoing operation and maintenance, the Porter-Cologne Act does not apply.

Fourth, the southwestern area also lacks the "continuous or recurrent saturation" "under normal circumstances" that the State Wetlands Procedures require for jurisdiction. (State Wetland Procedures § 2, at p. 1.) "Normal circumstances" for aquatic features involving human activity means the hydrology that is "normally present … as it existed before the event" changing the site conditions. (State Water Resources Control Board, Staff Report on State Policy for Water Quality Control: State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, adopted April 2, 2019, revised April 6, 2021 ["Staff Report"], at p. 55.)[3] To illustrate, the State Board has explained that it will not regulate aquatic features resulting from a water conveyance system's "long-term leaks" because, in part, they lack "recurrent or continuous hydrology under normal circumstances." (State Water Resources Control Board's Response to Comments on State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State, March 2019 ["State Response to

---

[3] The Staff Report is found at https://www.waterboards.ca.gov/press_room/press_releases/2021/staffreport.pdf.

Comments"], at p. 152 [Response to Comment 8.51].)[4] Like this leaking water conveyance system example, the Site's ponding is the product of a drainage system not functioning as designed. Since 1968, the Site has routed stormwater runoff offsite through a drainage system. (Ex. A at p. 3 ["Rainfall is to be routed off the site and not ponded on site" through the existing drainage system]; Ex. B at p. 2 [explaining the 1968 site plan and drainage system].) While the drainage system's recent loss in functionality has caused onsite ponding, regular maintenance of the system will "restore the area to its natural state." (Ex. B at p. 5.) The Site conditions thus lack the continuous or recurrent saturation under "normal circumstances" that could trigger regulation. Since the Site's natural state is not a wetland, the Porter-Cologne Act does not regulate it as a jurisdictional wetland.

IV. CONCLUSION

Even if there were evidence that the southwestern edge of the property met each of the 1987 Army Corps Manual's parameters, the ponding in that area is the temporary result of deferred maintenance on the drainage system. Under these circumstances, neither the Clean Water Act nor the Porter-Cologne Act regulates any portion of the Site as a jurisdictional wetland.

Very truly yours,

Sean G. Herman
Senior Counsel

Enclosures

cc: Rose Zimmerman, City Attorney
Tina Van Raaphorst, Jefferson Union High School District
Sean Marciniak, Hanson Bridgett LLP
Chris White, Brookwood Group

---

[4] The State Response to Comments is found at https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wrapp/df_rtc_03222019_v7.pdf.

EXHIBIT A

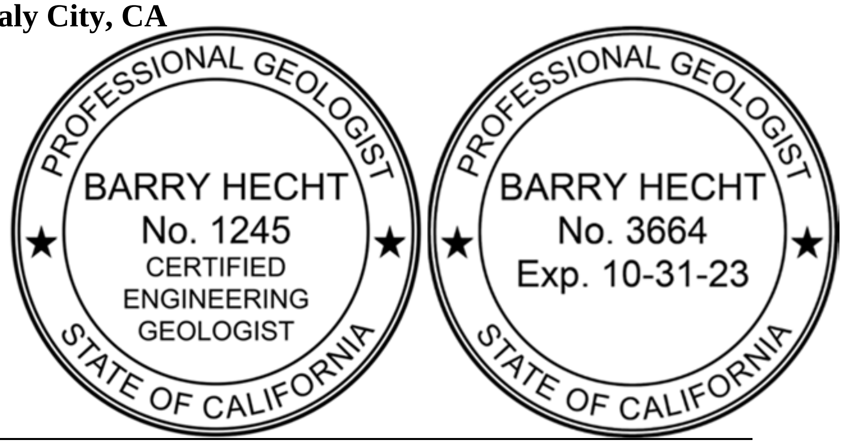
EXHIBIT A

BALANCE HYDROLOGICS, Inc.

MEMO

To: Mr. Chris White and Mr. Alan Katz, Brookwood Advisors
From: Mark Woyshner, M.Sc.Eng.
Date: February 10, 2023
Reviewed by: Barry Hecht, CEG1245, CHg50

Subject: Hydrologic reconnaissance, Jefferson Union High School District, 699 Serramonte Blvd., Daly City, CA



Summary

- Following review of project documents, historical aerial photos, and topographic, geologic, and soils information, Balance Hydrologics (Balance) performed a site reconnaissance to assess possible source of any seeps or wet areas related to the occurrence of willows and rushes on site.

- Water-quality analysis of storm-drain seepage on site ruled out fog drip and leakage from water and sewer pipes as a source of the seepage.

- Storm drain inlets in the area of interest are blocked by either fill materials comprising fine sand and wood-chip mulch or by vegetation and debris accumulation. Placement of the fill piles has created a poorly drained hummocky topography of small hills and depressions on top of former tennis courts, asphalt yard, and surrounding drainage system.

- As a result of deferring maintenance of the drainage-area surface and drainage system, there are low-lying areas that cannot drain adequately and have artificially created conditions supporting the willows and rushes currently found on site. If the drainage system were more routinely maintained, then rainfall would runoff the site via the drainage system installed when the high school was built, and the current wet condition would likely not be present where the willows and rushes are found.

Purpose

At the request of Brookwood Advisors, Balance performed a site reconnaissance of the southwest corner of the Jefferson Union High School District parcel located at 699 Serramonte Boulevard, Daly City, CA (APN 091-211-230). Formerly the Serramonte High School campus, the parcel is the site for a proposed market rate and affordable housing project (Project). The purpose of our reconnaissance was to inspect the site and collect basic on-the-ground data to develop a better understanding of possible source of any seeps or wet areas related to the occurrence of willows and rushes (Juncus spp) at this corner of the site. The scope of our reconnaissance was limited to information contained in a) basic backgrounding of project documents, historical maps and aerial photos, b) an inspection and shallow soil coring of the site, c) field measurements of specific conductance1 and temperature (SCT) of any water found on site, as well as d) collection and laboratory analysis of water-quality samples. Drainage analyses for the larger setting are presented elsewhere.

Setting

The Project site is situated at the headwaters of a historical tributary to Colma Creek on soils derived from coastal deposits – predominantly Pliocene age Merced formation and recent dune deposits. Historical aerial photos as early as the 1940's, show a grazed landscape with extensive erosion throughout the broad area around the Project site prior to the development of the Serramonte High School, neighboring communities, roads, and storm drains (Figure 1). With the growth of Daly City and surrounding areas, most of the landscape has been reworked with artificial fill and underground storm drains, leaving few functional native stream channels. The Project site is more than a mile from the nearest waterbody.

When the Serramonte High School campus was constructed, the site was graded and an engineered drainage system installed. As detailed in the grading and drainage plan (Falk and Booth, 1968), the drainage system for the Serramonte High School campus was originally intended to work as follows (as summarized by BKF Engineers, 2023):

- Runoff from the upper portion of the westerly slope is to be captured in swales on benches or concrete ditches and drained to the north to a below-grade drainage system in the existing parking lot.

- Runoff from the lower portions of the southerly and westerly slopes is to be captured in a concrete swale at the toe of slope and directed to multiple drainage inlets (Inlets 6, 7, and 8) between the toe of slope and the tennis courts. Drawings also indicate a subdrain line at the toe of slope which discharges to the below grade storm drain system.

[1] Specific conductance (SC) measures the ability of the water to conduct electricity and is a widely used index for salinity or total dissolved solids (TDS). Rainwater and snowmelt have very low SC. As water passes over and through the ground, salts are dissolved, increasing the specific conductance. Higher specific conductance indicates longer residence times in the ground or transmittal through salt-bearing geologic formations but not at this site. Normalized to 25°C, the SC of distilled water ranges 0.5 to 3 uS/cm (or µmhos/cm), while water in Hetch Hechy Reservoir is around 10 uS/cm. The drinking water maximum contaminant level (MCL) is 1,600 uS/cm, and seawater is about 50,000 uS/cm.

- Runoff from the tennis courts is to be directed to drainage inlets (T1 and T2) along the eastern edge of the tennis courts and discharged to the storm drain along Campus Drive.

- Runoff from the asphalt yard area along Campus Drive is to be directed to drainage Inlets #1 and #2 and discharged to the drainage system.

- Runoff from Campus Drive is to be collected in drainage inlets along the road and ultimately discharges to a 24" storm drainpipe to Callan Boulevard.

- Rainfall is to be routed off the site and not ponded on site.

Topography and Drainage Areas

It is standard practice to maintain drainage by regularly clearing vegetation and sediment along the drainage path to the inlets. Maintaining the drainage system as it was designed will reduce or eliminate ponding, flooding, and erosion on site. Runoff to the storm drain system, however, was subsequently blocked by fill materials that cover the tennis courts, asphalt yard, and surrounding area (**Figure 2**). The tennis court and the asphalt yard area west of Campus Drive was covered with fill material sometime after closure of the high school and the construction of Campus Drive and housing to the south. Of the five storm-drain inlets in this area identified on the grading and drainage plan (Falk and Booth, 1968), only Inlet #1 and Inlet #2 are currently exposed. Inlet #6 and both tennis court drains (T1 and T2) are buried in the fill materials. Inlets #7 and #8 capture runoff from the westerly slopes above the tennis courts and route it to the main storm drain along Campus Drive. The as-built drainage areas to the inlets are shown **Figure 3.**

The mounds of fill shown on aerial photos are currently present at the tennis court and asphalt yard area and used as a demonstration garden and irrigated with potable water supplied by the public water system. Rainfall on the fill material currently does not "freely" runoff to the inlets as designed, but rather, infiltrates into the fill and mostly perches on the tennis court and asphalt, and spreads laterally. Seepage was observed to percolate below grade into the storm drain system at Inlet #2 (as described below). The drainage area to the inlets have been greatly truncated by the fill as shown in **Figure 4** and summarized in **Table 1**.

Site Reconnaissance

On October 20, 2022, Mr. Mark Woyshner from Balance Hydrologics met with Mr. Chris White (Brookwood Advisors' project manager) and Ms. Stefanie Phillips (Jefferson Union High School director) to inspect the southwest corner of the Project site. The following conditions were noted on the property:

- No surface water or groundwater seepage was present, even in the lowest portions of the area where willows and rushes are found.

- The piles of fill materials create a hummocky surface composed of mainly fine (dune) sand and wood-chip mulch. The piles of fill materials are several feet high with no evidence of runoff or channel flow on the fill.

- Inlet #1 did not have a standard grate to allow stormwater to freely flow into the storm drain. Instead of a standard grate, the inlet was covered with plywood that had 4 drill holes, which would block the flow of water into the inlet. Some of its drainage area also appeared to be covered with fill materials.

- Inlet #2 was blocked by piles of fill materials and clearly appeared to not function as designed (**Figure 5**). Willows and ivy were growing on the fill materials in this area. Shallow groundwater was seen seeping into the drainage system below grade at Inlet #2 at a flow rate less than one gallon per minute (< 1 gpm). It was not possible to remove the grate at Inlet #2 to collect a sample the seepage because of the fill material.

- Inlet #6 and both tennis court drains (T1 and T2) were not found. Inlet #6 appeared to have been covered by regrading from the construction of the housing immediately south of the site. The tennis court inlets were covered with fill materials.

- No seepage was observed upslope of the property. It appeared that engineered ditches to Inlets #7 and #8 have not been recently maintained as the ditches were in need of vegetation, debris, and sediment removal, and accordingly, would block storm runoff to these inlets.

- We hand cored to a depth of two feet in the area where rushes (*Juncus spp*) are found, a 15 ft x 25 ft depression at the south end of the former tennis-court area (**Figure 6**). The soils were a dry brown sandy clay loam with fine lenses of red mottles. The soil mottles indicate periods of saturated soil. At a depth two feet, soils were hard and seemed mechanically compacted. Drainage from this area was blocked by piles of placed fill, as well as vegetation growing on the fill. Upslope erosion to this area was not apparent.

Mr. Woyshner returned to the site on October 27, 2022, to sample seepage at Inlet #2 using a peristaltic sampling pump, and to also collect a water sample from the garden faucet on site. SCT of the two samples were measured with a YSI field meter (**Table 2**). The two samples were sent to University of New Mexico Center for Stable Isotopes for analyses of heavy water isotopes (oxygen-18 and deuterium) which serve to differentiate imported water from the Sierra Nevada (e.g., leaks from water and sewer lines) from coastal rainwater and fog drip.[2]

The seepage sample from Inlet #2 also was sent to Monterey Bay Analytical Services, a California certified analytical laboratory, for the following analyses:

- Major ions, commonly used to "fingerprint" groundwater sources, with results often shown on a Piper diagram[3]; and,

[2] Water with a higher deuterium and oxygen-18 content is generally found near the coast, at low elevations, in warm rains, and in water which has undergone partial evaporation. Lower deuterium and oxygen-18 content is found inland at higher elevations, in cooler climates, and in evaporated water.

[3] Piper diagrams (Piper, 1944) show the relative concentration of major cations and anions, in milliequivalents per liter, to the total ionic content of the water.

- Methylene Blue Active Substances (MBAS) assay to detect the presence of anionic surfactants, such as a detergent or foaming agent, which is commonly used as an indicator of a sewer leak or septic leachate in groundwater.

The water quality and isotopic results are summarized in **Table 3**.

Fill depths were also probed to a maximum depth of 30 inches to confirm the presence of asphalt underlying the fill. Depths of fill between piles are shown in **Figure 7**.

Water-Quality Results

The water-quality results suggest that the source of seepage at Inlet #2 is not related to leaky water or sewer pipes, nor to fog drip, but rather it is primarily related to rainfall not draining off the site as a result of deferred maintenance issues with the drainage system.

- Specific conductance of the Inlet #2 seepage was 2,300 uS/cm@25°C and the at the garden faucet, it was 370 uS/cm@25°C. The specific conductance of rain is around 10 to 40 uS/cm@25°C. The higher specific conductance of the seepage is likely sourced from salts in the fill (dune) material and local soils.

- The general mineral (major ion) composition is plotted in a Piper diagram to illustrate the charge balance of the dissolved ions (**Figure 8**). This plot can be interpreted as showing an ionic fingerprint of water sources. Though groundwater chemistry may change along a flow path, the Inlet #2 seepage is grouped with local groundwater suggesting its source may not be leaks from water or sewer lines (imported water from the Sierra Nevada). Crystal Spring Reservoir, Hetch Hetchy Reservoir, seawater, and regional groundwater data are also plotted for reference.

- MBAS (surfactants) were not detected in Inlet #2 seepage sample, suggesting any leakage sewer pipes is negligible.

- Isotopic results (**Figure 9**) of the Inlet #2 seepage sample grouped with published results of coastal rain and groundwater (such as local Westlake Well water). Results indicate the Inlet #2 seepage water is not imported Sierran water (Crystal Springs Reservoir) and not fog drip.

Conclusions

Placement of fill materials on the former tennis court and asphalt yard area has left piles of fine sandy (dune) soils and wood-chip mulch, which have blocked the flow paths to the inlets in this area and truncated their drainage areas. Three of the five inlets in this area are buried in the fill material, while one of the remining two inlets (Inlet #2) is blocked by fill piles, vegetation, and debris accumulation. In addition, swales and upslope concrete ditches have not been recently cleared of vegetation, debris, and sediment. The placement of the fill piles has created a hummocky topography of small hills and depressions on top of the tennis court and asphalt yard area, and the deferred maintenance of the drainage system has created areas that cannot drain adequately with some of low-lying areas ponding water at ground surface. Runoff from the whole area is broadly obstructed or constrained, and does not naturally drain from slopes to the drainage system, as it should.

These observations, together with our water quality analysis, find that the water supporting the on-site willows and rushes are the result of deferred storm-drain system maintenance. The deferred maintenance thus has artificially created low-lying wet patches suitable for establishing the willows and rushes. If the mounds of fill were removed or regraded to original contours and the drainage path to the inlets were regularly maintained and kept clear of vegetation, debris, and sediment such that rainfall would runoff the site via the storm drain system (as intended), then the current wet condition would likely not be present where the willows and rushes have recently colonized.

Limitations

This memo was prepared for the client's exclusive use on this particular project and in general accordance with the accepted standard of practice in soils, geologic, and groundwater sciences existing in Northern California for projects of similar scale at the time the investigations were performed. No other warranties, expressed or implied, are made. In particular, we note that effects of improper drainage on slope stability or on drainage beyond the immediate area of mounded materials has not been a purpose of this study. It should be recognized that interpretation and evaluation of subsurface conditions is a difficult and inexact art. Balance Hydrologics has drawn on conventional published data sources for this evaluation and has not independently verified mapping or findings by agencies and other established sources. The application of water-quality and isotopic results and aerial photo interpretation to infer a site history, sources of groundwater, and geologic framework of aquifers has a long and respected record in the groundwater sciences. As with all historical investigative analysis, the better the record is known and understood, the more relevant and predictive the analysis can be. The authors encourage those who have knowledge of events or processes that may have affected the site to let Balance Hydrologics know at the first available opportunity.

References Cited

Bess Utility Solutions, 2022, Storm pipeline assessment report: CCTV investigation at 699 Serramonte Blvd, Daly City, CA, prepared for BKF Engineers, No. 44-2-2197

BKF Engineers, 2023, Site investigation, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA: Letter report to Brookwood Advisors, BKF No. 20180823-11, February 7, 2023.

Falk and Booth, 1963, Serramonte High School grading and drainage plan: Prepared for Jefferson Union High School District, February 20, 1963, Sheet 5

Enclosures: Table 1. Drainage areas of inlets #1 and #2.
Table 2. Specific conductance and temperature measurements.
Table 3. Water-quality results of samples collected.
Figure 1. Historical aerial photos prior to development
Figure 2. Historical aerial photos showing progressively adding fill materials blocking drainage.
Figure 3. As-built drainage areas of inlets.
Figure 4. Current drainage areas of inlets.
Figure 5. Site photos showing fill piles and blocked storm drainage at Inlet #2.
Figure 6. Site photos of fill materials.
Figure 7. Soil investigation area.
Figure 8. Piper diagram
Figure 9. Stable isotopes of oxygen and hydrogen
Appendix A. MBAS lab report

TABLES

Table 1. Drainage areas of inlets, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA

ID	Location	As-Built Drainage Area (square feet)	Current Drainage Area (square feet)	Remarks
Inlet 1	Garden entrance	8,339	1,306	Drainage area truncated by Campus Dr. and fill material.
Inlet 2	South of garden	5,667	0	Inlet visible, drainage area blocked by fill and vegetation.
Inlet T1	Tennis courts, north portion	13,275	0	Inlet and drainage area buried with fill.
Inlet T2	Tennis courts, south portion	13,138	0	Inlet and drainage area buried with fill.
Inlet 6	Southerly upland slopes	5,391	0	Inlet and drainage area buried with fill.
Inlet 7	Westerly upland slopes, south portion	21,840	21,840	Swales and ditches to inlet blocked with vegetation, debris, and sediment.
Inlet 8	Westerly upland slopes, north portion	29,702	29,702	Swales and ditches to inlet blocked with vegetation, debris, and sediment.

Table 2. Specific conductance and temperature measurements, Serramonte Del Rey Campus, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA.

ID	Location	Date	Time	Latitude (WGS84)	Longitude (WGS84)	Elevation (ft)	Flow Est. (gpm)	Specific Conductance normalized to 25°C (uS/cm)	Specific Conductance at field temperature (uS/cm)	Water Temperature (°C)	Remarks
1	Serramonte Del Rey Campus storm drain (APN 091-211-230)	10/27/22	10:30	37.667071	-122.478674	484	< 1	2211	1720	13.5	Collected from storm drain
2	Serramonte Del Rey Campus garden faucet (APN 091-211-230)	10/27/22	11:15	37.667071	-122.478674	484	4	371	336	19.9	Collected from garden faucet
3	Westlake Well (4110013-013)	6/1/21	--	37.696	-122.484722	--	--	840	--	--	Local groundwater source well, GAMA groundwater database
4	Lower Crystal Springs Reservoir (3810001-006)	7/28/20	--	--	--	--	--	124	--	--	Sierran source water, DDW database
5	Hetch Hetchy Reservoir (3810001-004)	1996-2011	--	--	--	--	--	9.8	--	--	Sierran source water, DDW database average of 20 samples from 1996 to 2011

Notes:

Abbreviations: GAMA = Groundwater Ambient Monitoring and Assessment Program, State Water Resources Control Board; DDW = California Department of Drinking Water

Table 3. Results of water-quality samples collected at the Serramonte Del Rey Campus, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA.

Analyte					*Lab Results* [1]	
PARAMETER	**UNITS**	**METHOD**	**PQL** [2]	**MCL** [3]	**Serramonte Del Rey Campus subdrain seep at DI-01 and willows**	**Serramonte Del Rey Campus garden faucet**
DESCRIPTORS						
Sample I.D.					221028_07-01	na
Assessors parcel number					091-211-230	091-211-230
Latitude, WGS84	degrees				37.667071	37.667071
Longitude, WGS84	degrees				-122.478674	-122.478674
Elevation (approximate)	feet				484	484
Lab used [4]					MBAS, UNMCSI	UNMCSI
Sample collected by [5]					mw	mw
Field filtered					yes	no
FIELD MEASUREMENTS						
Date	MM/DD/YY				10/27/22	10/27/22
Time	HH:MM				10:30	11:15
Specific conductance (@25°C)	umhos/cm				**2211**	371
Conductance (@ field temp)	umhos/cm				1720	336
Temperature	deg C				13.5	19.9
WATER QUALITY INDICATORS						
Alkalinity (total)	mg/L CaCO3	SM2320B	10	--	300	
Hardness (total)	mg/L CaCO3	SM2340B/Calc	10	--	721	
pH (Laboratory)	pH Units	SM4500-H+B	0.1	8.5	8.1	
Specific conductance (@25°C)	umhos/cm	SM2510B	1	900/1600/2200	**2340**	
Total dissolved solids (TDS)	mg/L	SM2540C	10	500/1000/1500	**1560**	
QC Ratio TDS/SC	--	--	--	--	*0.67*	
MBAS (surfactants)	mg/L	SM5540C	0.05	0.5	0	
GENERAL MINERALS						
Bicarbonate (as CaCO3)	mg/L	SM2320B	8	--	*300*	
Bicarbonate (as HCO3)	mg/L	SM2320B	10	--	366	
Calcium (Ca)	mg/L	EPA200.7	1	--	138	
Carbonate (as CaCO3)	mg/L	SM2320B	10	--	0	
Carbonate (as CO3)	mg/L	SM2320B	10	--	*0*	
Chloride (Cl)	mg/L	EPA300	1	250/500/600	355	
Magnesium (Mg)	mg/L	EPA200.7	0.5	--	91.3	
Potassium (K)	mg/L	EPA200.7	0.5	--	6.5	
Sodium (Na)	mg/L	EPA200.7	1	--	245	
Sulfate (SO4)	mg/L	EPA300	0.05	250/500/600	447	
Major Cations (Ca+Mg+K+Na)	meq/L	--	--	--	*25.22*	
Major Anions (HCO3+CO3+Cl+SO4)	meq/L	--	--	--	*25.32*	
Ion Balance (Cations/Anions)	--	--	--	--	*1.00*	

Table continues to next page.

Table 3. Results of water-quality samples collected at the Serramonte Del Rey Campus, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA.

Analyte					*Lab Results* [1]	
PARAMETER	UNITS	METHOD	PQL [2]	MCL [3]	Serramonte Del Rey Campus subdrain seep at DI-01 and willows	Serramonte Del Rey Campus garden faucet

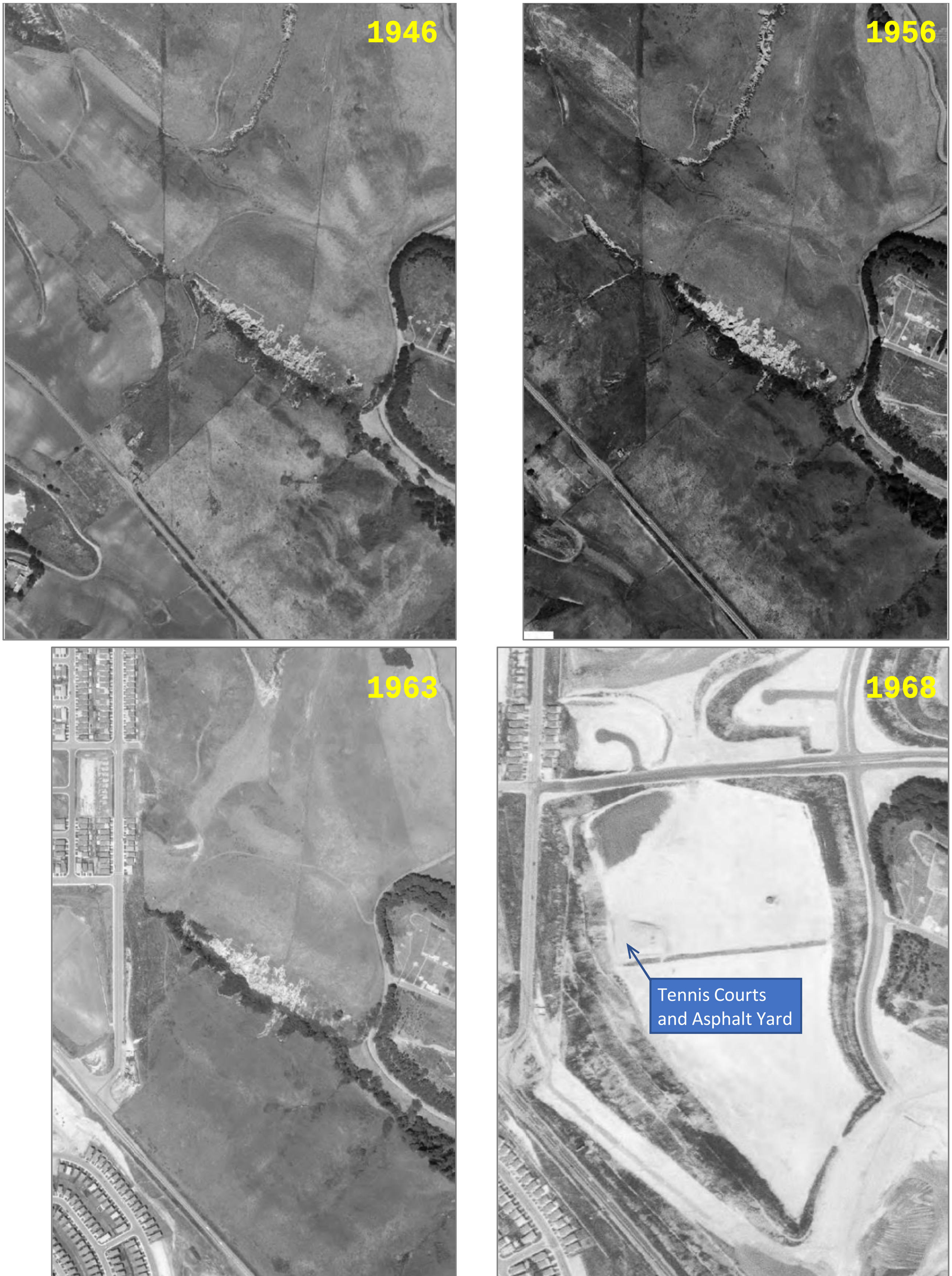
Table continued from previous page.

PARAMETER	UNITS	METHOD	PQL [2]	MCL [3]	Serramonte Del Rey Campus subdrain seep at DI-01 and willows	Serramonte Del Rey Campus garden faucet
OTHER CONSTITUENTS						
Boron (B) [6]	mg/L	EPA200.7	0.05	--	0.12	
Nitrate (as N)	mg/L	EPA300	0.1	10	0.1	
Iron (Fe)	ug/L	EPA200.8	10	300	26	
Manganese (Mn)	ug/L	EPA200.8	10	50	90	
STABLE ISOTOPE RATIOS						
Oxygen-18 (heavy water) [7]	$\delta^{18}O$ (per mil)	--	--	--	-5.77	-11.17
Deuterium (heavy water) [7]	$\delta^{2}H$ (per mil)	--	--	--	-35.2	-79.2

NOTES

1. Lab results: 0 = not detected; blank value = not tested; na = not applicable
2. PQL = Practical Quantitation Limit
3. MCL = California Title 22 Maximum Contaminant Level as listed by California Administrative Code, Title 22. Standards for TDS, specific conductance, chloride, and sulfate have recommended/upper/short term MCLs. **Bold red** font indicates a laboratory result exceeding its MCL.
4. Lab key: MBAS = Monterey Bay Analytical Services; UNMCSI = University of New Mexico Center for Stable Isotopes
5. Observer key: mw = Mark Woyshner (Balance Hydrologics)
6. There is no MCL for boron. Irrigation guidelines for boron have identified increasing problems at values greater than 0.5 mg/L and severe problems at values exceeding 2.0 mg/L (crop dependent).
7. The isotopic composition of water is expressed as a per mil deviation from Standard Mean Ocean Water (SMOW). A water sample with less isotopic composition than SMOW is a negative value, and a sample with more is positive.

FIGURES



Balance Hydrologics

Figure 1. Historical aerial photos show a grazed landscape and extensive erosion prior to development, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA.

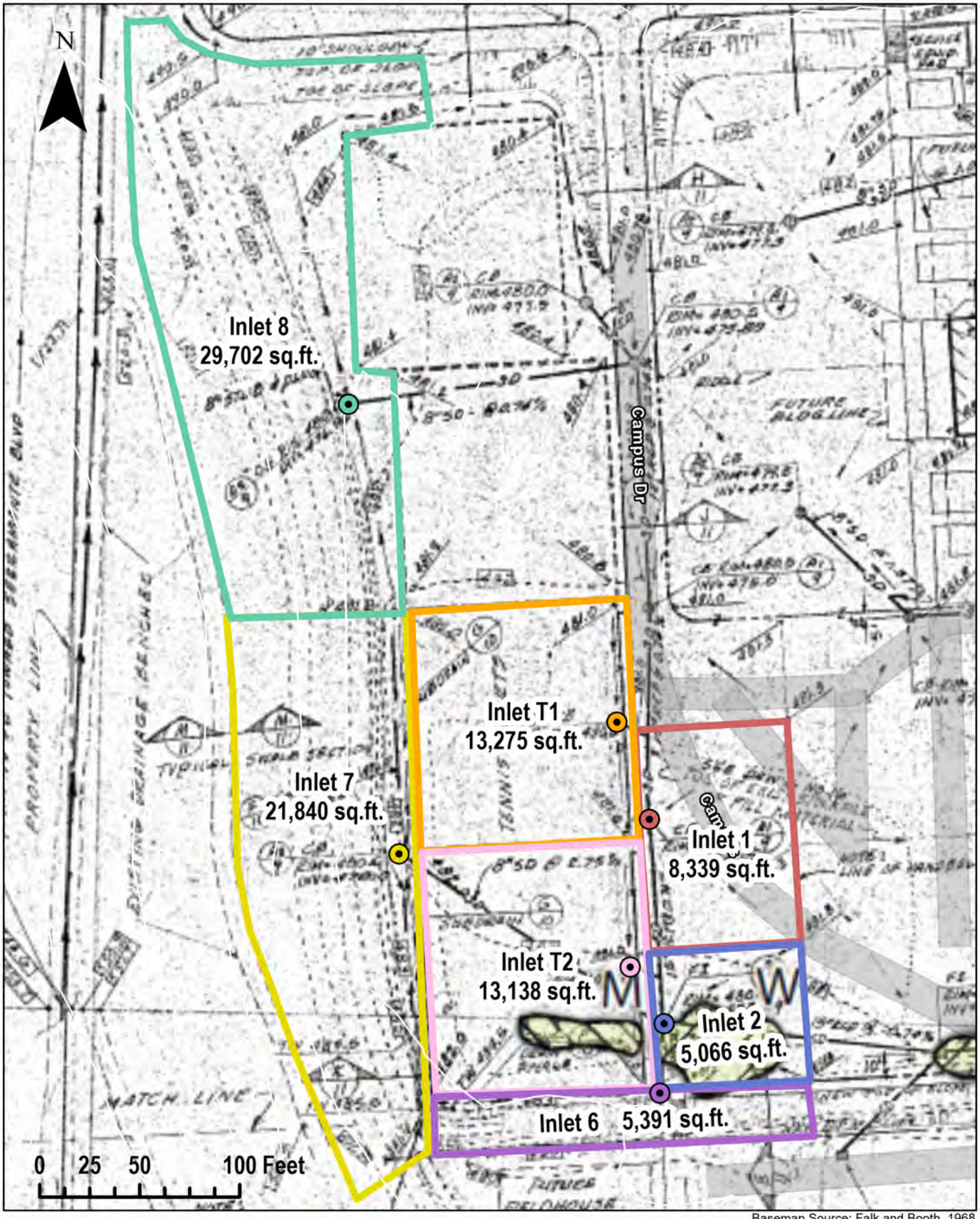
1982
(drainage system functioning prior to the addition of fill material)

2003
(some fill material add on the tennis court area, construction of Campus Dr. and housing to the south)

2010
(more fill material add and expanding onto the asphalt yard area)

Balance Hydrologics

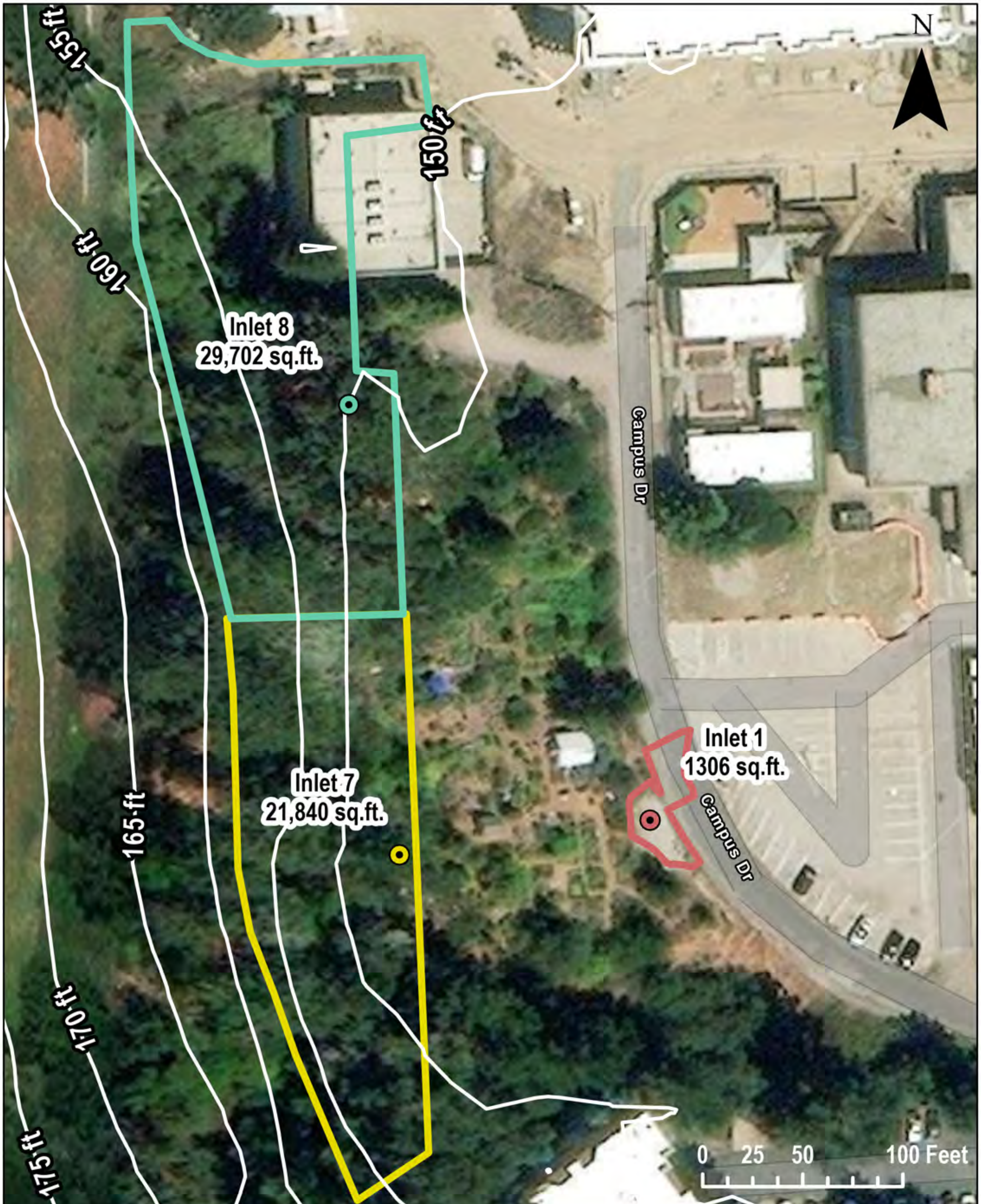
Figure 2. Historical aerial photos showing the blocking of storm drainage and inlets by progressively adding fill material for expansion of the garden area, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA. Fill material is primarily dune sand and wood-chip mulch. Rainfall accumulates within the fill material (perched on asphalt) and settles at the south end of the fill area, rather than as runoff to the storm-drain system.



Basemap Source: Falk and Booth, 1968

Balance Hydrologics

Figure 3. As-built drainage areas of inlets, Jefferson Union High School District, 699 Serramonte Blvd., Daly City, CA



Basemap Source: Maxar

Balance Hydrologics

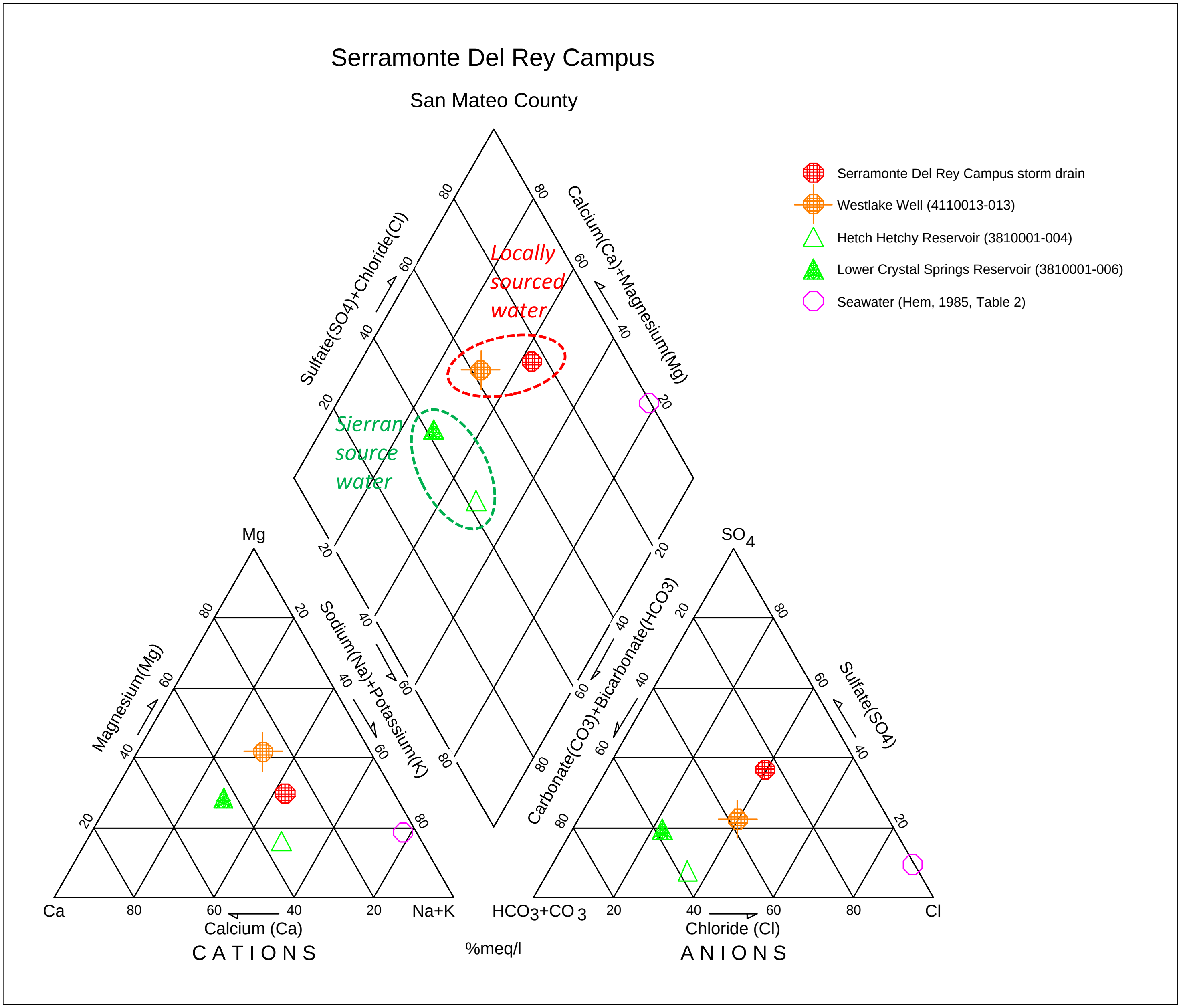
Figure 4. Current drainage areas of inlets, Jefferson Union High School District, 699 Serramonte Blvd., Daly City, CA

Elevation contour interval: 5 feet

Figure 5. Site photos showing fill piles and blocked storm drainage at Inlet #2, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA. A sample of subdrain seepage of less than 1 gpm into the storm drain was collected on October 27, 2022. Surface soils were dry.

Figure 6. Site photos of fill material, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA. Fill material is primarily dune sand and wood-chip mulch. Underlying the fill mounds was either asphalt or compacted soil. Soil was dry with fine lenses of red mottles in the area of the *Juncus*. Photos taken in late October 20, 2022.

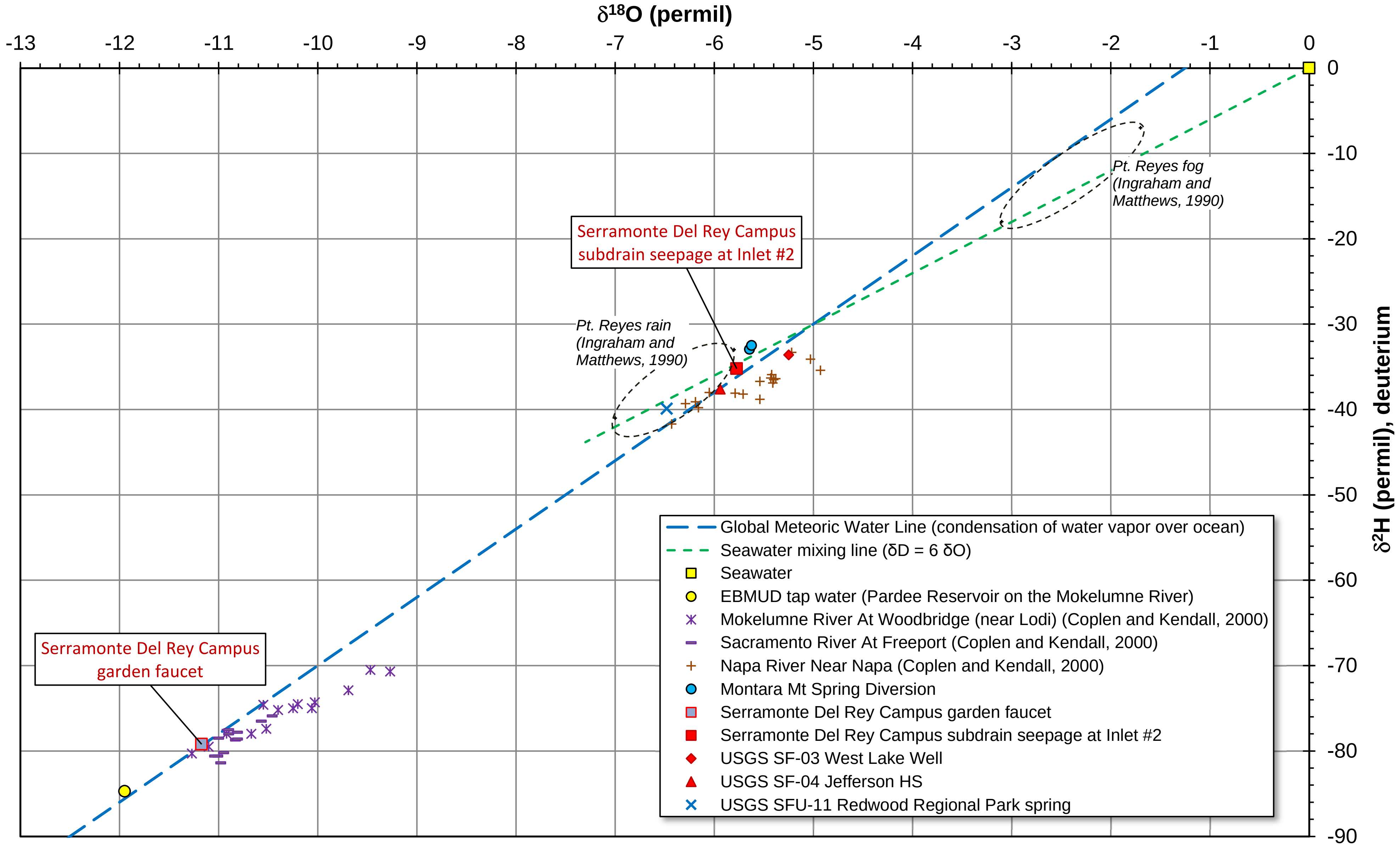
Figure 7. Soil investigation, Jefferson Union High School District, 699 Serramonte Boulevard, Daly City, CA. Base image: Google Earth, May 2021. Tennis court area estimated from 1982 aerial photo. Storm drains from Falk and Booth 1968 grading and drainage plan. Depth to asphalt was measured between fill mounds.



This diagram shows cations in the ternary graph on the left and anions on the right graph. The diamond graph in the center illustrates both cations and anions. Hardness dominated water plots to the left and top on the diamond graph, soft monovalent-salt dominated water to the right, and soft alkaline water towards the bottom.

Balance Hydrologics

Figure 8. Piper diagram illustrating ionic signatures of water samples collected at the Serramonte Del Rey Campus relative to Sierran source water and local groundwater, San Mateo County, California. On-site subdrain seepage at inlet DI-01 is grouped similar to local groundwater suggesting its source may not be leaks from water or sewer lines (imported water from the Sierra Nevada) though groundwater chemistry may change along a flow path.



Balance Hydrologics

Figure 9. Stable isotopes of oxygen and hydrogen in samples collected at Serramonte Del Rey Campus relative to published results from coastal and inland waters. Water with a higher deuterium content is generally found near the coast, at low elevations, in warm rains, and in water which has undergone partial evaporation. The variation of oxygen-18 content generally follow those of deuterium. The subdrain seep sample plots within the range of coastal waters while the garden faucet municipal water plots as Sierran source water. Fog drip does not appear significant as a source of the seepage.

222151_H-O_Isotope_Data_2022-11-22.xlsx, Serramonte Del Rey Campus, 1/26/2023

APPENDICES

APPENDIX A

MBAS lab report

Monterey Bay Analytical Services

Report Amendments Date: 11/11/22 Initials: SS
This amended report supersedes any previous versions of this report issued by the laboratory. Amendments to this report are as follows: Per email from M. Woyshner 11/11/22, Project Name/Sample Description corrected.

4 Justin Court Suite D
Monterey, CA 93940
Phone: (831) 375-MBAS (6227)
www.MBASinc.com

ELAP Certification Number: 2385

Certificate of Analysis

November 11, 2022

Mark Woyshner/Gustavo Porras
Balance Hydrologics, Inc.
800 Bancroft Way, Suite 101
Berkeley,CA 94710

Thank you for using Monterey Bay Analytical Services for your analytical testing needs
In the following pages please find the test results for the samples submitted October 28, 2022
for order ID #: 221028_07

Sample results are on the Sample Results page and are related only to the samples analyzed.

The samples were analyzed in accordance with the attached Chain of Custody document.
Sample receipt conditions were noted on the chain of custody forms and are reported at the end of this report. Any deviations from the quality requirements are specified in the Quality Control report attached (if applicable) to the analytical report.

Authorized by

David Holland
Laboratory Director
Monterey Bay Analytical Services

CALIFORNIA SMALL BUSINESS 23348

Thank you again for using MBAS. We value your business and appreciate your loyalty.

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Friday, November 11, 2022

Sample Results

Lab Number: 221028_07-01 Sample Description: Serramonte Del Rey Campus, Drain inlet near willows

Collection Date/Time: 10/27/2022 10:30 Sample Collector: Woyshner M Client Sample #: 222151

Received Date/Time: 10/28/2022 14:20 System ID:

Analyte	Method	Unit	Result	Dilution	Qual	PQL	MDL	Analysis Date / Time		Analyst
Anion-Cation Balance	Calculation	%	0	1						
QC Anion Sum x 100	Calculation	%	108	1						
QC Cation Sum x 100	Calculation	%	108	1						
QC Ratio TDS/SEC	Calculation	NA	0.66	1						
Boron	EPA200.7	mg/L	0.12	1		0.1	0.05	11/2/2022	16:48	OW
Calcium	EPA200.7	mg/L	138	1		1	0.5	11/2/2022	16:48	OW
Hardness (as CaCO3)	EPA200.7	mg/L	721	1		5	1			
Iron, Total	EPA200.7	µg/L	26	1	J	30	10	11/2/2022	16:48	OW
Magnesium	EPA200.7	mg/L	91.3	1		0.5	0.1	11/2/2022	16:48	OW
Manganese, Total	EPA200.7	µg/L	90	1		15	5	11/2/2022	16:48	OW
Potassium	EPA200.7	mg/L	6.5	1		0.5	0.3	11/2/2022	16:48	OW
Sodium	EPA200.7	mg/L	245	1		1	0.5	11/2/2022	16:48	OW
Chloride	EPA300.0	mg/L	355	1		1	0.2	10/28/2022	14:50	HC
Nitrate as N	EPA300.0	mg/L	0.1	1		0.1	0.01	10/28/2022	14:50	HC
Sulfate	EPA300.0	mg/L	447	1		1	0.1	10/28/2022	14:50	HC
Alkalinity, Total (as CaCO3)	SM2320B	mg/L	300	1		10	2	11/1/2022	15:46	SB
Bicarbonate (as HCO3-)	SM2320B	mg/L	366	1		10	5			
Carbonate as CaCO3	SM2320B	mg/L	ND	1		10	5	11/1/2022	15:46	SB
Specific Conductance (EC)	SM2510B	µmho/cm @25.0°C	2340	1		3	1	11/1/2022	15:46	SB
Total Dissolved Solids	SM2540C	mg/L	1560	1		10	3	10/31/2022	13:12	MW
pH (Laboratory)	SM4500-H+B	pH (H)	8.1	1		1	1	10/28/2022	15:45	CC
MBAS (Surfactants)	SM5540C	mg/L	ND	1		0.05	0.02	10/28/2022	16:23	OW
SAR (Sodium Absorption Ratio)	Suarez, 1981	NA	4.1	1						
SAR, Adjusted	Suarez, 1981	NA	4.9	1						

Abbreviations/Definitions: mg/L: Milligrams per liter (=ppm) µg/L: Micrograms per liter (=ppb) MPN: Most Probable Number
MDL: Method Detection Limit PQL: Practical Quantitation Limit MCL: Maximum Contamination Level ND: Not Detected at the PQL (or MDL, if shown)
E: Analysis performed by External Laboratory; see Report attachments H: Analyzed outside of method hold time QC: Quality Control
J: Result is < PQL but ≥ MDL; the concentration is an approximate value.

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Friday, November 11, 2022

Quality Control Results

QCBatch ID	QC ID	Parameter	Results	Units	% Rec	% RPD	Control Limits
QC22110208	221028_26-01: Duplicate 1	Alkalinity, Total (as CaCO3)	308.9	mg/L		2.4	0 - 10
	221031_24-04: Duplicate 2	Alkalinity, Total (as CaCO3)	136.6	mg/L		0.5	0 - 10
	CCVB 1	Alkalinity, Total (as CaCO3)	ND	mg/L			
	CCVB 2	Alkalinity, Total (as CaCO3)	ND	mg/L			
	CCVB 3	Alkalinity, Total (as CaCO3)	ND	mg/L			
	LCS 1	Alkalinity, Total (as CaCO3)	39.0	mg/L	97		92 - 108
	LCSD 1	Alkalinity, Total (as CaCO3)	42.5	mg/L	106	8.7	0 - 10
	LCSD2 1	Alkalinity, Total (as CaCO3)	39.5	mg/L	99	1.3	0 - 10
	LCSD3 1	Alkalinity, Total (as CaCO3)	38.6	mg/L	96	1.1	0 - 10
	LCSL 1	Alkalinity, Total (as CaCO3)	8.0	mg/L	80		80 - 120
	Method Blank 1	Alkalinity, Total (as CaCO3)	ND	mg/L			
QC22110713	221028_13-05: MS 1	Boron	1.8	mg/L	103		70 - 130
	221028_13-05: MSD 1	Boron	1.8	mg/L	106	1.4	0 - 20
	CCVB 1	Boron	ND	mg/L			
	LCB 1	Boron	ND	mg/L			
	LCS 1	Boron	1.0	mg/L	99		95 - 105
	LCSD 1	Boron	1.0	mg/L	100	1.0	0 - 10
	LFB 1	Boron	1.0	mg/L	100		85 - 115
	LFBD 1	Boron	1.0	mg/L	101	0.8	0 - 20
	Method Blank 1	Boron	ND	mg/L			
	QCS 1	Boron	1.0	mg/L	101		95 - 105
	221028_13-05: MS 1	Calcium	70.0	mg/L	104		70 - 130
	221028_13-05: MSD 1	Calcium	69.8	mg/L	103	0.3	0 - 20
	CCVB 1	Calcium	ND	mg/L			
	LCB 1	Calcium	ND	mg/L			
	LCS 1	Calcium	50.2	mg/L	100		95 - 105
	LCSD 1	Calcium	50.2	mg/L	100	0.1	0 - 10
	LFB 1	Calcium	51.0	mg/L	102		85 - 115
	LFBD 1	Calcium	51.1	mg/L	102	0.2	0 - 20
	Method Blank 1	Calcium	ND	mg/L			
	QCS 1	Calcium	48.0	mg/L	96		95 - 105
QC22103102	221028_13-04: MS 1	Chloride	77.8	mg/L	96		80 - 120
	221028_13-04: MSD 1	Chloride	77.8	mg/L	95	0.1	0 - 10
	CCVB 1	Chloride	ND	mg/L			
	LCS 1	Chloride	19.8	mg/L	99		90 - 110

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Friday, November 11, 2022

Quality Control Results

QCBatch ID	QC ID	Parameter	Results	Units	% Rec	% RPD	Control Limits
	LCSD 1	Chloride	20.2	mg/L	101	2.0	0 - 10
	LCSL 1	Chloride	0.8	mg/L	85		50 - 150
	Method Blank 1	Chloride	ND	mg/L			
QC22110713	221028_13-05: MS 1	Iron, Total	1165.0	µg/L	107		70 - 130
	221028_13-05: MSD 1	Iron, Total	1183.0	µg/L	109	1.6	0 - 20
	CCVB 1	Iron, Total	ND	µg/L			
	LCB 1	Iron, Total	ND	µg/L			
	LCS 1	Iron, Total	1001.0	µg/L	100		95 - 105
	LCSD 1	Iron, Total	1029.0	µg/L	103	2.8	0 - 10
	LFB 1	Iron, Total	1039.0	µg/L	104		85 - 115
	LFBD 1	Iron, Total	1037.0	µg/L	104	0.2	0 - 20
	Method Blank 1	Iron, Total	ND	µg/L			
	QCS 1	Iron, Total	1030.0	µg/L	103		95 - 105
	221028_13-05: MS 1	Magnesium	52.6	mg/L	101		70 - 130
	221028_13-05: MSD 1	Magnesium	52.5	mg/L	101	0.3	0 - 20
	CCVB 1	Magnesium	ND	mg/L			
	LCB 1	Magnesium	ND	mg/L			
	LCS 1	Magnesium	49.4	mg/L	99		95 - 105
	LCSD 1	Magnesium	49.1	mg/L	98	0.6	0 - 10
	LFB 1	Magnesium	49.5	mg/L	99		85 - 115
	LFBD 1	Magnesium	49.5	mg/L	99	0.0	0 - 20
	Method Blank 1	Magnesium	ND	mg/L			
	QCS 1	Magnesium	50.6	mg/L	101		95 - 105
	221028_13-05: MS 1	Manganese, Total	1100.0	µg/L	106		70 - 130
	221028_13-05: MSD 1	Manganese, Total	1105.0	µg/L	106	0.4	0 - 20
	CCVB 1	Manganese, Total	ND	µg/L			
	LCB 1	Manganese, Total	ND	µg/L			
	LCS 1	Manganese, Total	1021.0	µg/L	102		95 - 105
	LCSD 1	Manganese, Total	1042.0	µg/L	104	2.0	0 - 10
	LFB 1	Manganese, Total	1045.0	µg/L	105		85 - 115
	LFBD 1	Manganese, Total	1049.0	µg/L	105	0.4	0 - 20
	Method Blank 1	Manganese, Total	ND	µg/L			
	QCS 1	Manganese, Total	1007.0	µg/L	101		95 - 105
QC22102838	221026_39-02: MS 1	MBAS (Surfactants)	0.3	mg/L	118		80 - 120
	221026_39-02: MSD 1	MBAS (Surfactants)	0.3	mg/L	120	1.3	0 - 20

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Friday, November 11, 2022

Quality Control Results

QCBatch ID	QC ID	Parameter	Results	Units	% Rec	% RPD	Control Limits
	CCVB 1	MBAS (Surfactants)	ND	mg/L			
	LCS 1	MBAS (Surfactants)	0.3	mg/L	100		80 - 120
	LCSD 1	MBAS (Surfactants)	0.3	mg/L	104	3.5	0 - 20
	LCSL 1	MBAS (Surfactants)	0.1	mg/L	132		50 - 150
	Method Blank 1	MBAS (Surfactants)	ND	mg/L			
	QCS 1	MBAS (Surfactants)	0.3	mg/L	118		80 - 120
QC22103102	221028_13-04: MS 1	Nitrate as N	9.7	mg/L	97		80 - 120
	221028_13-04: MSD 1	Nitrate as N	9.7	mg/L	97	0.0	0 - 10
	CCVB 1	Nitrate as N	ND	mg/L			
	LCS 1	Nitrate as N	9.8	mg/L	98		90 - 110
	LCSD 1	Nitrate as N	10.0	mg/L	100	2.0	0 - 10
	LCSL 1	Nitrate as N	0.1	mg/L	100		50 - 150
	Method Blank 1	Nitrate as N	ND	mg/L			
QC22102903	221028_17-02: Duplicate 1	pH (Laboratory)	7.7	pH (H)		0.0	0 - 5
	LCS 1	pH (Laboratory)	6.9	pH (H)	100		95 - 105
	LCSD 1	pH (Laboratory)	6.9	pH (H)	100	0.1	0 - 10
QC22110713	221028_13-05: MS 1	Potassium	16.4	mg/L	114		70 - 130
	221028_13-05: MSD 1	Potassium	16.3	mg/L	114	0.2	0 - 20
	CCVB 1	Potassium	ND	mg/L			
	LCB 1	Potassium	ND	mg/L			
	LCS 1	Potassium	10.2	mg/L	102		95 - 105
	LCSD 1	Potassium	10.7	mg/L	107	5.2	0 - 10
	LFB 1	Potassium	10.8	mg/L	109		85 - 115
	LFBD 1	Potassium	10.9	mg/L	109	0.3	0 - 20
	Method Blank 1	Potassium	ND	mg/L			
	QCS 1	Potassium	10.1	mg/L	101		95 - 105
	221028_13-05: MS 1	Sodium	258.6	mg/L	114		70 - 130
	221028_13-05: MSD 1	Sodium	257.5	mg/L	112	0.4	0 - 20
	CCVB 1	Sodium	ND	mg/L			
	LCB 1	Sodium	ND	mg/L			
	LCS 1	Sodium	49.0	mg/L	98		95 - 105
	LCSD 1	Sodium	49.4	mg/L	99	0.8	0 - 10
	LFB 1	Sodium	49.7	mg/L	99		85 - 115
	LFBD 1	Sodium	49.7	mg/L	99	0.0	0 - 20
	Method Blank 1	Sodium	ND	mg/L			

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Friday, November 11, 2022

Quality Control Results

QCBatch ID	QC ID	Parameter	Results	Units	% Rec	% RPD	Control Limits
	QCS 1	Sodium	48.4	mg/L	97		95 - 105
QC22103110	221028_26-01: Duplicate 1	Specific Conductance (EC)	1098.0	µmhos/cm		1.2	0 - 25
	221031_24-04: Duplicate 2	Specific Conductance (EC)	711.0	µmhos/cm		0.0	0 - 25
	LCS 1	Specific Conductance (EC)	1413.0	µmhos/cm	100		80 - 120
	LCSD 1	Specific Conductance (EC)	1413.0	µmhos/cm	100	0.0	0 - 5
	LCSD2 1	Specific Conductance (EC)	1417.0	µmhos/cm	100	0.3	0 - 5
	LCSH 1	Specific Conductance (EC)	24700.0	µmhos/cm	100		80 - 120
	LCSL 1	Specific Conductance (EC)	145.4	µmhos/cm	99		80 - 120
QC22103102	221028_13-04: MS 1	Sulfate	72.1	mg/L	98		80 - 120
	221028_13-04: MSD 1	Sulfate	71.9	mg/L	97	0.3	0 - 10
	CCVB 1	Sulfate	ND	mg/L			
	LCS 1	Sulfate	19.6	mg/L	98		90 - 110
	LCSD 1	Sulfate	20.1	mg/L	100	2.5	0 - 10
	LCSL 1	Sulfate	0.8	mg/L	76		50 - 150
	Method Blank 1	Sulfate	ND	mg/L			
QC22110225	221028_13-03: Duplicate 1	Total Dissolved Solids	520.0	mg/L		1.2	0 - 10
	221028_26-02: Duplicate 2	Total Dissolved Solids	1394.0	mg/L		0.7	0 - 10
	221031_20-05: Duplicate 3	Total Dissolved Solids	1700.0	mg/L		0.7	0 - 10
	CCVB 1	Total Dissolved Solids	ND	mg/L			
	CCVB 2	Total Dissolved Solids	ND	mg/L			
	CCVB 3	Total Dissolved Solids	ND	mg/L			
	LCS 1	Total Dissolved Solids	498.0	mg/L	100		90 - 110
	LCSD 1	Total Dissolved Solids	490.0	mg/L	98	1.6	0 - 10
	LCSD2 1	Total Dissolved Solids	486.0	mg/L	97	2.4	0 - 10
	LCSD3 1	Total Dissolved Solids	488.0	mg/L	98	2.0	0 - 10
	LCSL 1	Total Dissolved Solids	40.0	mg/L	80		50 - 150
	Method Blank 1	Total Dissolved Solids	ND	mg/L			

Monterey Bay Analytical Services
4 Justin Court Suite D, Monterey, CA 93940
831.375.MBAS (6227)
www.MBASinc.com
ELAP Certification Number: 2385

Balance Hydrologics, Inc.
Mark Woyshner/Gustavo Porras
800 Bancroft Way, Suite 101
Berkeley, CA 94710

Friday, November 11, 2022

Sample Condition Upon Receipt

Order ID: 221028_07

Is there evidence of chilling? *NOTE: Systems are encouraged but not required to hold samples <10°C (Microbiology) or <6°C (Chemistry) during transit.	Yes
Did bottle arrive intact?	Yes
Did bottle labels agree with COC?	Yes
Adequate sample volume?	Yes

Monterey Bay Analytical Services Chain Of Custody / Analysis Request

221028-07

MBAS Monterey Bay Analytical Services

4 Justin Ct. Suite D • Monterey, Ca 93940 • (831) 375-MBAS (6227) • (831) 641-0734 (Fax)

Client/Company Name: **Balance Hydrologics**
Attention: Mark Woyshner
Billing Address: 800 Bancroft Way, Suite 101, Berkeley, CA 94710-2251

Project/System Information: ~~ECCCHA Knightsen Property~~

E-Mail Address(es): mwoyshner@balancehydro.com
Contract/P.O. #: 222151

For Regulatory Complaince? YES ☐ NO ☑
For State or Local Health Department reporting:
Electronic Data Transfer (EDT)? YES ☐ NO ☑
System ID Number: ____

Turn Around Time: STD (7-14 Days) ☑ 48-Hour ☐ 5-Day ☐ 24-Hour ☐

Phone # 510-704-1000 x209
Fax # 510-704-1001

Drinking water ☐ Wastewater ☐ Monitoring Well ☑ Soil ☐ Sludge ☐ Other ☐

11/11/22 SS: Project Name corrected, per attached email from M. Woyshner: Serramonte Del Rey Campus

MBAS Lab #	Project ID or Source Code #	Sample Site / Description (Well Name, APN#, Address, Stormdrain #)	Sampling Date	Sampling Time	Receiving Temp.	CL2 Residual	Coliform Analysis Routine	Other	Repeat	Special	# Cont.	Container Type	Container Size	Irrigation Suitability Panel	MBAS					
01		Drain inlet near willows	10/27/22	10:30	1.8						2	plastic	1L	✓	✓					
					IR04								250 mL							

	Printed Name	Signature	Date	Time	Comments or Special Instructions:
Sampled by:	Mark Woyshner	Mark Woyshner	10/27/22	17:00	Recvd Shipped
Relinquished by:					
Received by:					250mL pres w/ HNO_3 pH<2
Relinquished by:					
Received by:	Monterey Bay Analytical Services	[signature]	10/28/22	1420	– UR 10/28/22

☐ Payment received Check #: Amount: Receipt #: Date:

EXHIBIT B

EXHIBIT B

February 7, 2023
BKF No. 20180823-11

Mr. Alan Katz
Brookwood Advisors
50 California Street, Suite 1500
San Francisco, CA 94111
Transmitted Via Email: akatz@brookwoodgroup.com

Subject: Jefferson Union High School District
699 Serramonte Boulevard, Daly City, CA
Site Investigation

Dear Mr. Katz:

BKF Engineers performed a site investigation of a portion of the Jefferson Union High School District site located at 699 Serramonte Boulevard, Daly City, CA. The purpose of the site investigation was to assess how the existing drainage system, site grading, and site hydrology affect onsite storm water drainage. Our area of investigation focused on the southwest corner of the site (proposed Parcel F). BKF performed site investigations on August 30, 2022 and December 22, 2022, reviewed available record drawings, performed a topographic field survey of the area, and reviewed recent video inspection of the drainage system to assess the existing drainage conditions.

Existing Drainage Area

The drainage area we investigated is located at the southwest portion of the site and west of Campus Drive. The drainage area (shown below, outlined in red) generally includes the slope down from the existing apartment buildings to the south, the "garden area," the slope to the west of the "garden area," and a portion of existing Campus Drive (original tennis court and play yard area).

Existing Drainage System

Based on our site investigations and review of record drawings (Exhibit 1, Jefferson Union High School District, Serramonte High School Campus, File No. 6458, Drawing No. 5), the existing drainage system was originally intended to work as follows:

> Runoff from the upper portion of the westerly slope is to be captured in swales on benches or concrete ditches, and drained to the north to a below grade drainage system in the existing parking lot. Runoff from the lower portions of the southerly and westerly slopes is to be captured in a concrete swale at the toe of slope, and directed to multiple drainage inlets (Inlets 6, 7, and 8) between the toe of slope and the tennis courts. Drawings also indicate a subdrain line at the toe of slope which discharges to the below grade storm drain system. Runoff from the tennis courts is to be directed to drainage inlets (T1 and T2) along the eastern edge of the tennis courts, and discharged to the drainage system in Campus Drive. Runoff from the asphalt yard area along Campus Drive is to be directed to drainage Inlets #1 and #2 and discharged to the drainage system. Runoff from Campus Drive is to be collected in drainage inlets along the road and ultimately discharged to a 24" storm drain pipe to Callan Boulevard. Rainfall is to be routed off the site and not ponded on the site.

"Garden Area"

Exhibit 1 (relevant portion shown below) is the original site plan drawing for the campus from 1968, with markups added by BKF to identify key site features and drainage inlets:

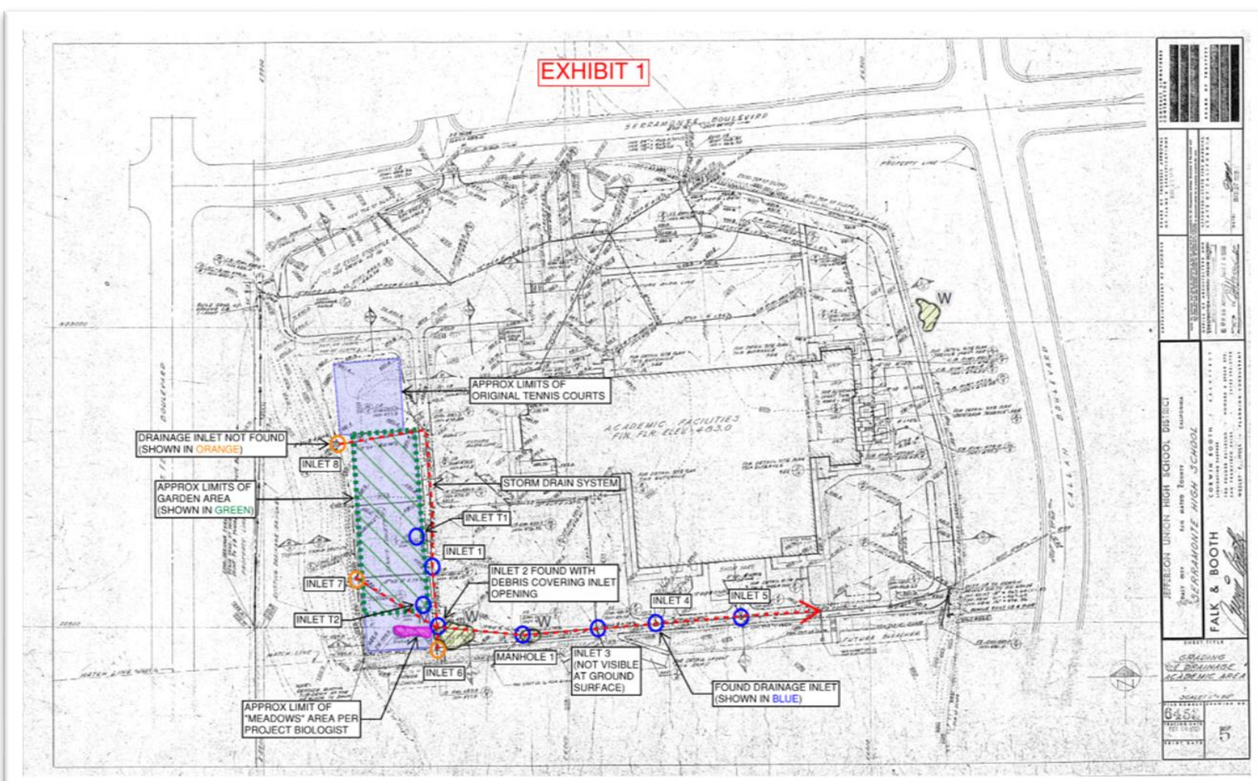


Exhibit 1

The current "garden area" as shown on Exhibit 1 is located approximately where the original tennis courts and play yard were located. A field investigation by Balance Hydrologics, Inc. found that a portion of the play yard pavement is below soil. The edge of the buried asphalt pavement appears to align with the eastern edge of the tennis courts.

There is visual evidence of asphalt pavement just west of Campus Drive where drainage inlet 1 (Figure 4) was found, which indicates that all of the existing pavement near the garden area was not removed. Further, while the area in the immediate vicinity of inlet 1 should drain freely to inlet 1, plywood (rather than a standard grate) covered inlet 1. The plywood has blocked the flow of water into the inlet. Removing the plywood would allow the area in the immediate vicinity of inlet 1 to drain freely to inlet 1.

Drainage inlet 2 is near the eastern side of the southernmost tennis court. This inlet was partially covered with thick vegetation and soil (Figures 5 and 6). It is standard practice to maintain drainage systems by regularly managing and clearing vegetation and maintaining topography (e.g., removing temporary soil accumulation) around inlets and the drainage path leading to the inlets. The area around drainage inlet has not been regularly maintained in accordance with these standard practices, which has led to thickening vegetation and mounding that has substantially blocked the inlet from receiving stormwater. If this vegetation and mounding is maintained or removed, stormwater will continue to drain freely into drainage inlet 2.

Further, a small pipe enters the drainage inlet 2 (see Figure 7, showing on the left the pipe entering drainage inlet 2). Based on our review of the 1968 drainage system plans, it is our opinion that this inlet is part of the existing subdrain system from the toe of slope. But due to visible mineral deposits partially blocking the end of the pipe as it enters the inlet as shown in the figure, the pipe's flow capacity has been compromised and does not drain freely. Maintaining the pipe by clearing the mineral deposits—or replacing this portion of the pipe—will reestablish the pipe's flow capacity, which will again allow stormwater to drain freely into the drainage system as it was designed.

BKF and the project landscape architect (JETT Landscape Architecture and Design) performed a topographic field survey and site walk on December 22, 2022 in the "meadows area." Exhibit 2, shown below, compares the site visit area with the previously identified "meadows area."

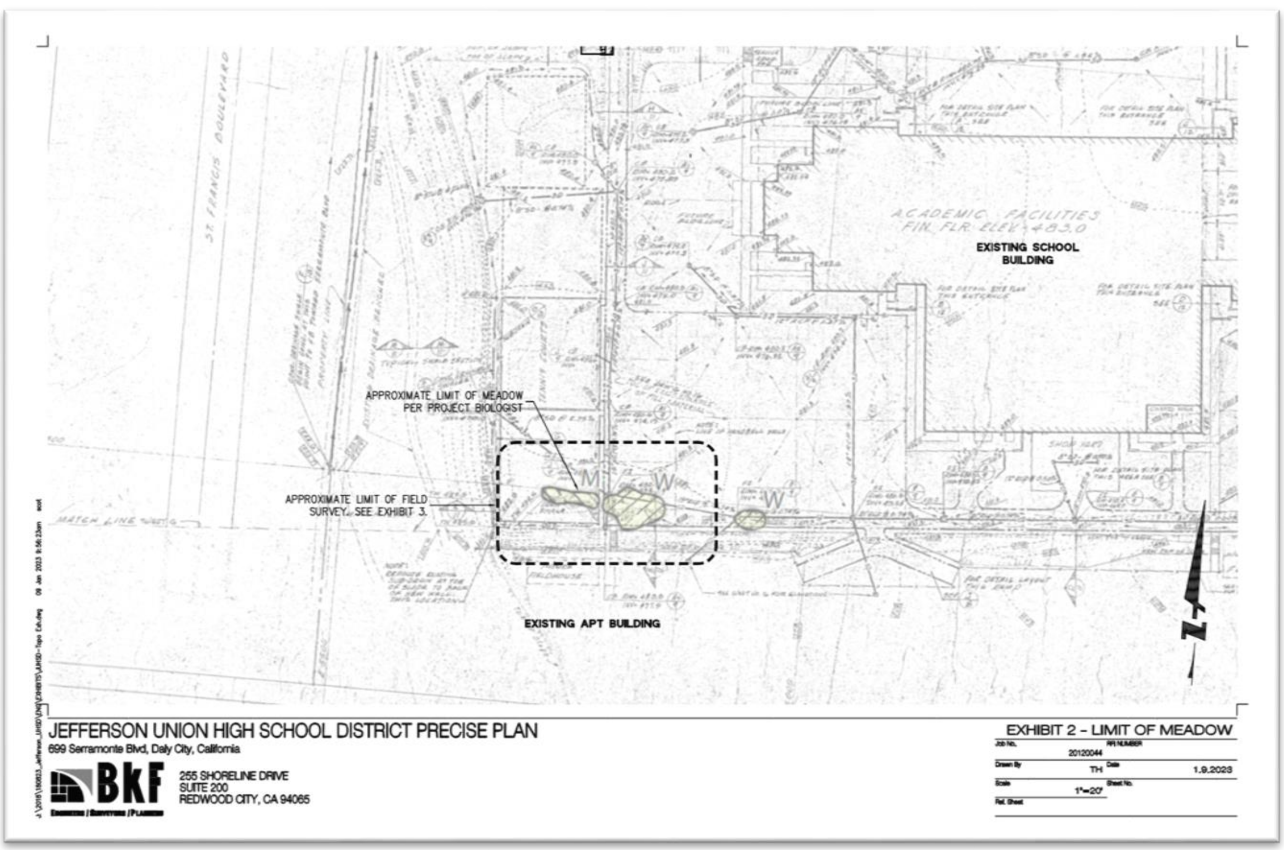


Exhibit 2

Exhibit 3 is the field survey, which is shown below.

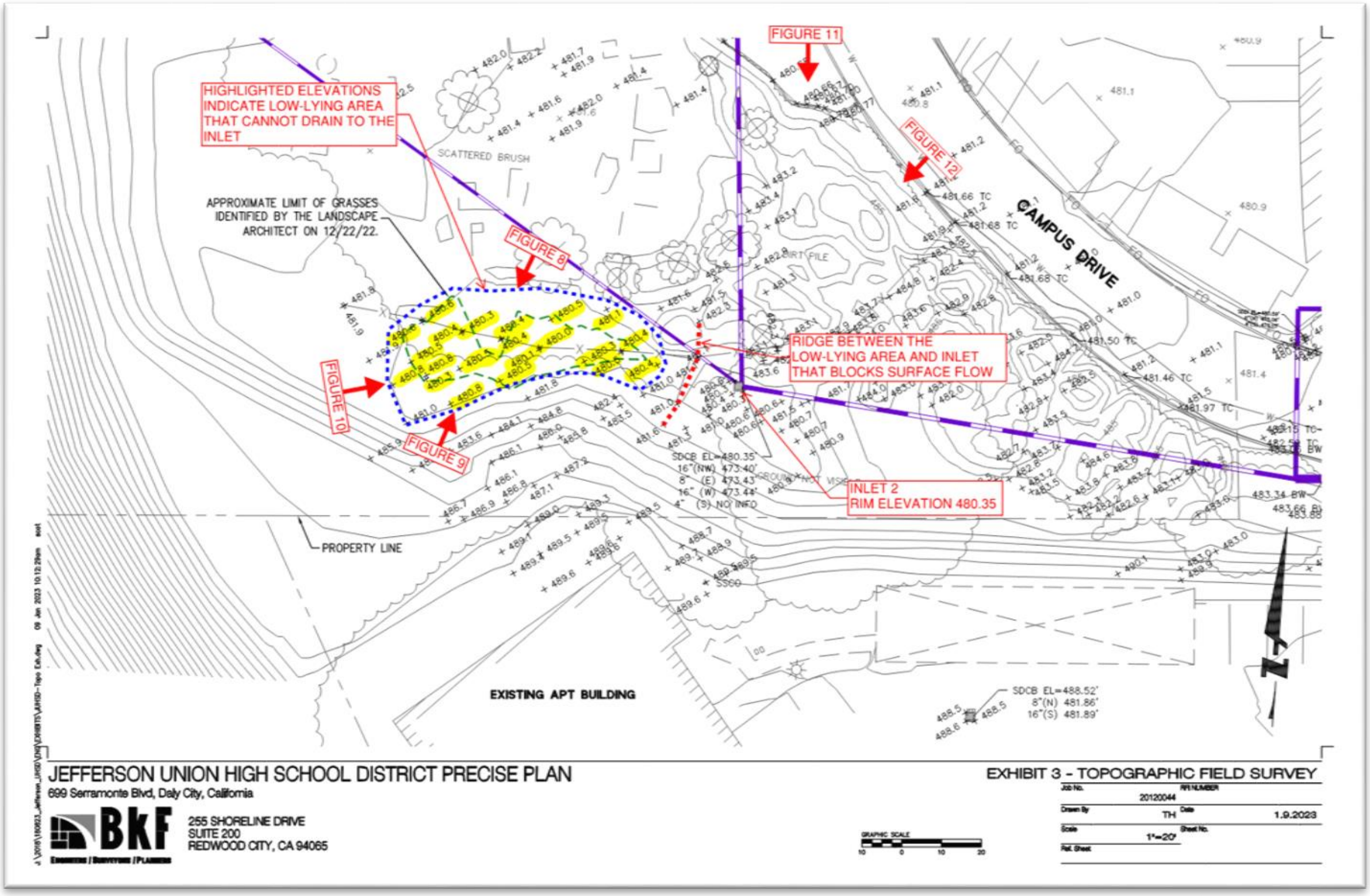


Exhibit 3

Exhibit 3 shows the approximate limits of the grasses identified in the "meadows area." The detailed survey also located a low-lying area that does not have a positive drainage path to the existing drainage system. For example, Figures 8, 9, and 10 show standing water in the area of the grasses. A mound of soil between this low-lying area and drainage inlet 2 blocks a positive drainage path from the low-lying area to the inlet. Based on interviews with Dean DeVolder (District Office Maintenance staff) and John Shultz (former Director Operations between 2003 and 2017), soils were brought in and periodically placed in and removed from this area depending on off-site needs, and which have accumulated over time into the current mound.

Further, we observed mounds of vegetation, shredded wood, and other debris at the south and southeast of the garden area, on the eastern edge of the "meadows area." The source and purpose of the mounds are unclear, but based on a review of historical Google Earth aerial photos, their configurations appear to change over the years. (See figures 11 and 12.) These mounds are not part of the natural topography when the drainage system was designed and implemented, and is further impeding the drainage path of stormwater through the grass and "meadow area" to drainage inlet 2.

Because the above observed mounding blocks the positive drainage path from the "meadow area" to drainage inlet 2, a lack of routine maintenance has created the current ponding water in the low-lying area. If this mounding is removed and the topography maintained as appropriate, waters from the "meadow area" would drain freely to drainage inlet 2 and not allow any significant ponding.

We also observed an earthen swale at the toe of slope on the west side of the garden. This swale is not part of the natural topography when the drainage system was designed and implemented, and is blocking a positive drainage path to the area in which drainage inlets 7 and 8 are located. But due to vegetation overgrowth, we were not able to locate drainage inlets 7 and 8 in the swale. Consistent with standard practices, the swale and vegetation overgrowth must be maintained and removed to ensure this area drains freely.

Conclusion

In our opinion, the lack of maintenance of the drainage system and site grading in the southwestern portion of the campus has created a low-lying area that cannot drain adequately into the drainage system. If the mounding in this area is removed and regularly maintained, the positive drainage pathway will be restored to the drainage system design plans. It is our opinion that this routine maintenance will eliminate water ponding and soil saturation in the "meadow area" and restore the area to its natural state. Regular maintenance—like clearing vegetation and debris away from inlets, clearing swales of debris, and maintaining positive ground slope towards the inlets—elsewhere around the current garden area also will ensure that the drainage system operates effectively by avoiding the creation of low-lying areas that currently do not freely drain.

Respectfully,
BKF Engineers

Tim Heffernan

Tim Heffernan, PE C67089
Senior Project Manager

J:\2018\180823_Jefferson_UHSD\DOCS\03-Correspondence\B-Letters\Drainage Letter\20230207-Drainage_Letter_Final.docx

EXHIBITS

Exhibit 1 – Existing Site Plan

Exhibit 2 – Limit of Meadow

Exhibit 3 – Topographic Field Survey

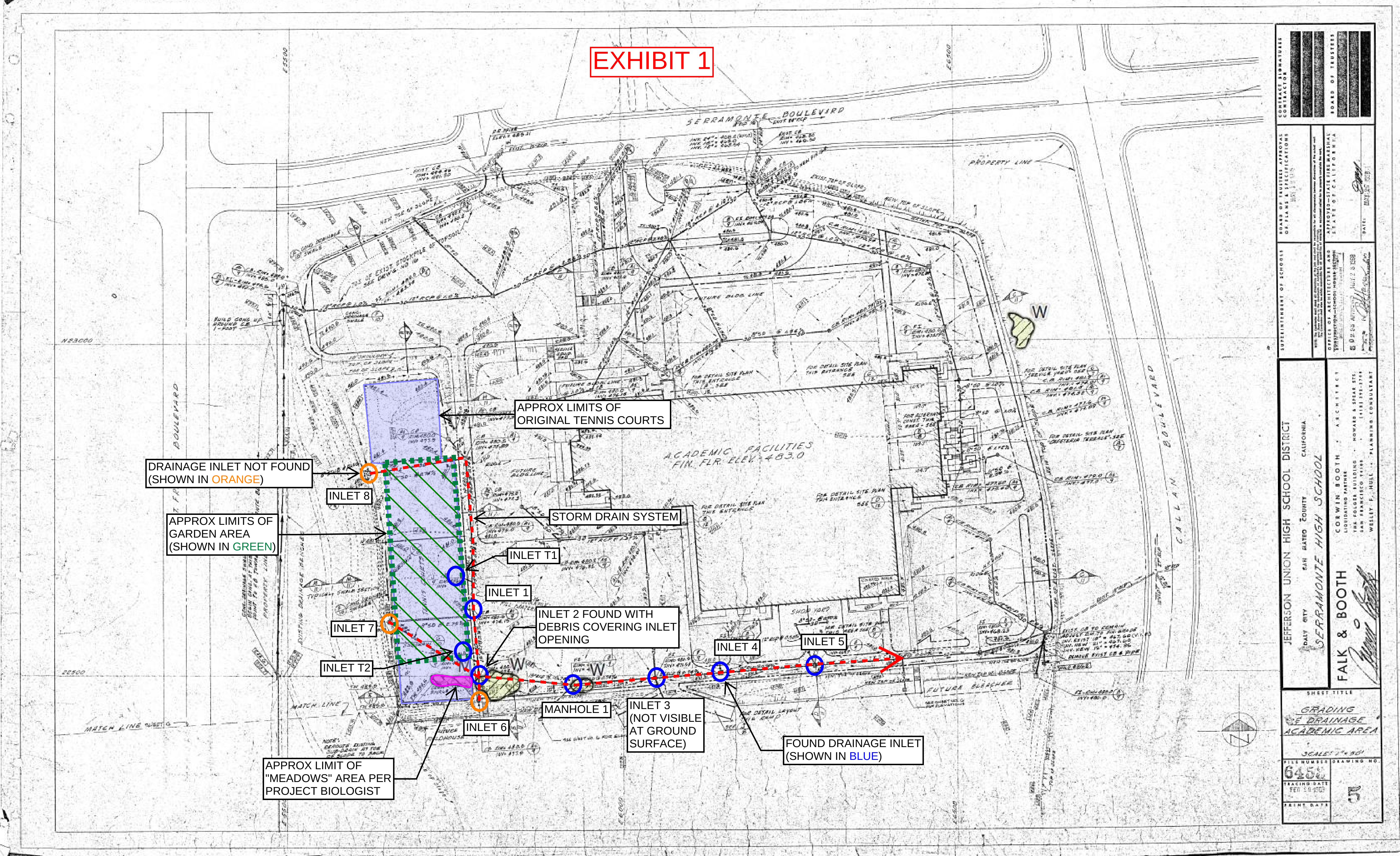
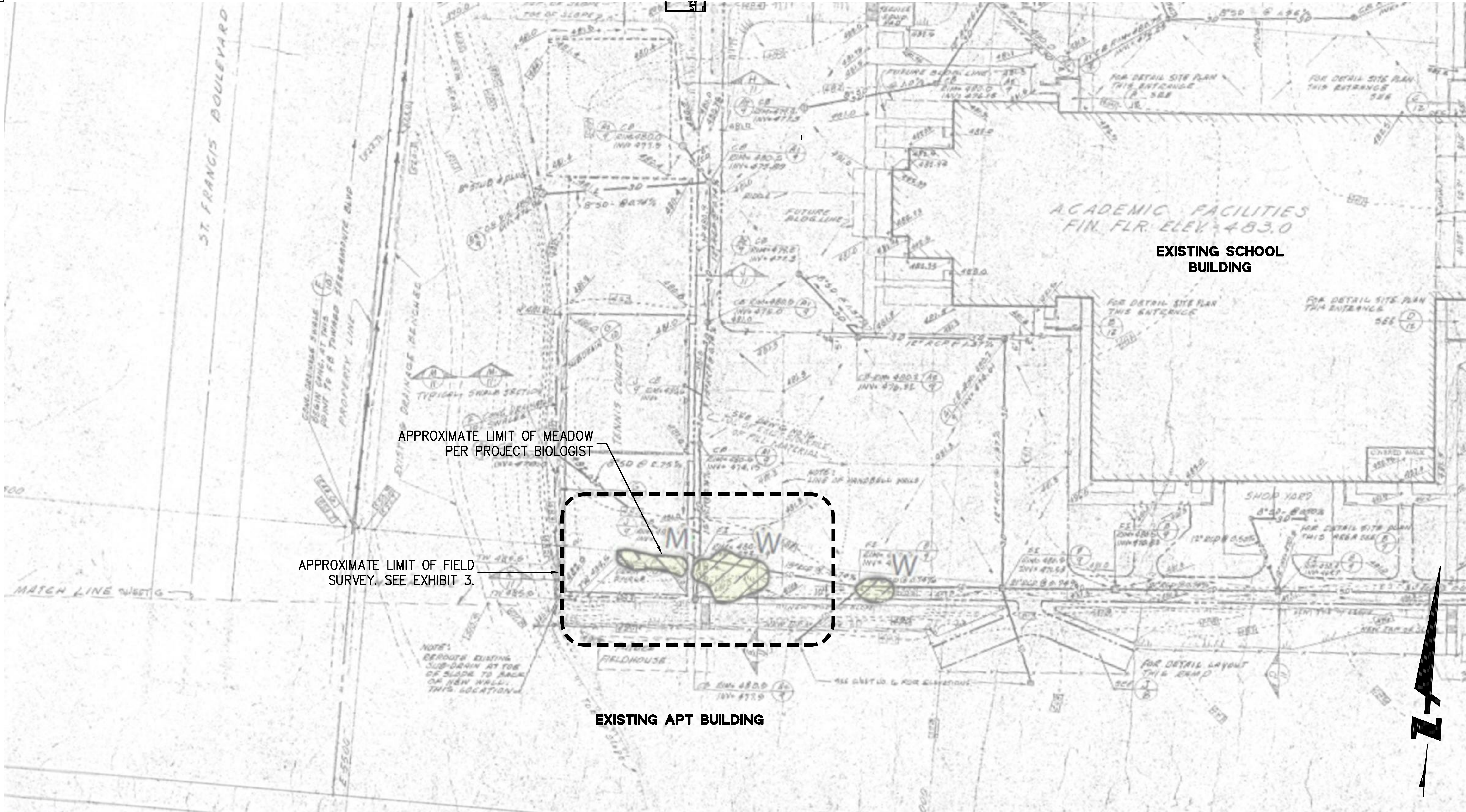


EXHIBIT 1
SERRAMONTE BOULEVARD
PROPERTY LINE
CALLAN BOULEVARD
ACADEMIC FACILITIES FIN. FLR. ELEV. 483.0
APPROX LIMITS OF ORIGINAL TENNIS COURTS
DRAINAGE INLET NOT FOUND (SHOWN IN ORANGE)
INLET 8
APPROX LIMITS OF GARDEN AREA (SHOWN IN GREEN)
STORM DRAIN SYSTEM
INLET T1
INLET 1
INLET 2 FOUND WITH DEBRIS COVERING INLET OPENING
INLET 7
INLET T2
INLET 4
INLET 5
W
MANHOLE 1
INLET 3 (NOT VISIBLE AT GROUND SURFACE)
INLET 6
FOUND DRAINAGE INLET (SHOWN IN BLUE)
APPROX LIMIT OF "MEADOWS" AREA PER PROJECT BIOLOGIST
MATCH LINE
FUTURE BLEACHER
JEFFERSON UNION HIGH SCHOOL DISTRICT
SERRAMONTE HIGH SCHOOL
FALK & BOOTH
GRADING & DRAINAGE ACADEMIC AREA
5



JEFFERSON UNION HIGH SCHOOL DISTRICT PRECISE PLAN

699 Serramonte Blvd, Daly City, California

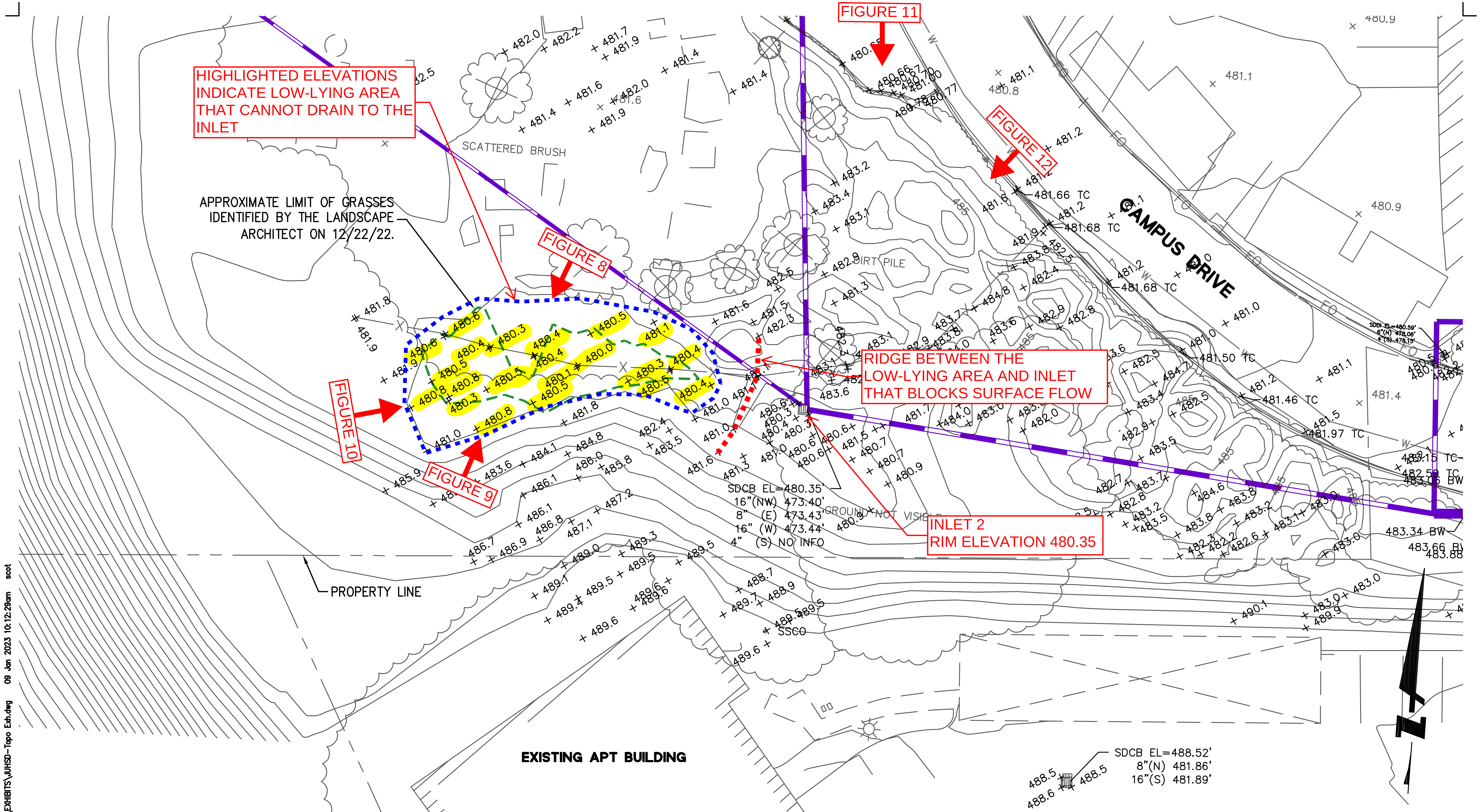
BKF ENGINEERS / SURVEYORS / PLANNERS

255 SHORELINE DRIVE
SUITE 200
REDWOOD CITY, CA 94065

EXHIBIT 2 - LIMIT OF MEADOW

Job No.	20120044	RFI NUMBER	
Drawn By	TH	Date	1.9.2023
Scale	1"=20'	Sheet No.	
Ref. Sheet			

J:\2018\180823_Jefferson_UHSD\ENG\EXHIBITS\JUHSD-Topo Exh.dwg 09 Jan 2023 9:56:23am scot



JEFFERSON UNION HIGH SCHOOL DISTRICT PRECISE PLAN

699 Serramonte Blvd, Daly City, California

BKF
ENGINEERS / SURVEYORS / PLANNERS
255 SHORELINE DRIVE
SUITE 200
REDWOOD CITY, CA 94065

GRAPHIC SCALE
10 0 10 20

EXHIBIT 3 - TOPOGRAPHIC FIELD SURVEY

Job No. 20120044	RFI NUMBER
Drawn By TH	Date 1.9.2023
Scale 1"=20'	Sheet No.
Ref. Sheet	

J:\2018\180823_Jefferson_UHSD\ENG\EXHIBITS\JUHSD-Topo Exh.dwg 09 Jan 2023 10:12:29am scot

APPENDIX A

FIGURE 1	GOOGLE EARTH IMAGE	Date: 5/2022

FIGURE 2	GOOGLE EARTH IMAGE	Date: 3/2018

FIGURE 3	GOOGLE EARTH IMAGE	Date: 9/2010

FIGURE 4	INLET 1	Date: 10/5/2018

FIGURE 5	INLET 2 Photo taken before soil covering inlet was removed	Date: 11/2/2022

FIGURE 6	**INLET 2** Photo taken after soil covering inlet was removed	**Date: 11/2/2022**

FIGURE 7	**INLET 2** Photo inside inlet. Likely subdrain shown on left side.	**Date: 10/5/2018**

FIGURE 8	STANDING WATER	Date: 12/22/2022

FIGURE 9	STANDING WATER	Date: 12/22/2022

FIGURE 10	STANDING WATER	Date: 12/22/2022

FIGURE 11	STOCKPILED MATERIAL	Date: 10/5/2018

FIGURE 12	STOCKPILED MATERIAL	Date: 10/5/2018

EXHIBIT C

EXHIBIT C

Jefferson Union High School District

ADMINISTRATIVE OFFICES – SERRAMONTE DEL REY
699 Serramonte Boulevard, Suite 100
Daly City, CA 94015-4132
650-550-7900 • FAX 650-550-7888

February 9, 2023

Mr. Alan Katz
Brookwood Advisors
200 Lakeside Drive Unit 605
Oakland CA 94612

Subject: Jefferson Union High School District
699 Serramonte Boulevard, Daly City, CA
Drainage Maintenance

Dear Mr. Katz:

As requested, this letter describes the history of drainage maintenance for the southwest corner of the former Jefferson Union High School District (District) drainage areas ("Site"). The Site was formerly a demonstration garden, located immediately west of Campus Drive.

Site Location

The Site is downslope and northerly from the Serramonte Ridge Apartments. A visual of the Site is shown below, using an aerial view looking southwesterly *towards the Site* from above Campus Drive. There are hills to the left and behind the "garden area" shown in the aerial view. The Site itself is mostly flat in the area immediately southerly and westerly of Campus Drive, until it reaches the toe of those hills.

Site History

The Site was originally designed and built as tennis courts as part of the buildout of school in 1968. Around 2006 **the** Site became a demonstration garden area for adult education. It has more recently been used as a community garden area, where interested parties have set up garden plots to use temporarily while the District pursued its development plans.

To ensure I have an appropriate Site history, including its operation and maintenance, I met with two District staff members this month: Dean DeVolder, currently employed as District Office Maintenance staff since 1993, and with John Shultz, the former Director of Operations (2003-2017). These individuals are or were responsible for the day-to-day maintenance history of the area and the Site through today. They shared the following information about the Site history with me:

- The existing drainage for the Site is based on improvements built as part of the school, comprised of hillside drainage benches, surface drainage to catch basins and area subdrains that take storm water off-site to Callan Boulevard. The system is a gravity flow system. The functioning of the system relies on periodic clearing of drainage inlets and channels. It also relies on the hillside drainage benches, which have a concrete channel in the uphill areas to the south and west of the Site to divert flow to areas south of the Site.
- John Shultz does not recall any ponding of the Site area when he was in charge of maintenance in this area through 2014; he advised that it is a more recent phenomenon.
- Some deferred maintenance has occurred more recently, as usage of the area changed and as staff focused its maintenance efforts elsewhere. This deferred maintenance has allowed some drainage issues to go undetected.
- When the District closed the school in 1985 and rezoned the property to Planned Development (P-D), students no longer attended this facility [although the school was reopened 1993-1995]. Since 1995, the District has used the old school buildings for District offices, and has also rented the buildings to community-serving tenants. At the close of school, the District reduced facility maintenance staff to a single day shift person, who is responsible for maintaining the entire 22-acre site since 1995. As a result, recent maintenance in the southwest corner of the Site has been minimal. In addition, since the closure of the school, the District began to stockpile surplus, bio-degradable materials from other school sites in the District at this location. These stockpiles include materials like wood chips and surplus topsoil, which came from replacing the turf at Terra Nova and Jefferson football fields. The District periodically revisits these stockpiles by depositing or taking materials away depending on off-site needs. The addition of these soils and organic materials has compromised the drainage channels that provide a positive drainage system or covered up drainage grates, as noted below. The resulting impact to drainage from the failure to maintain these systems evolved over time and was not readily noticeable.

- Maintenance staff has continued to maintain the Site's surface areas, but less frequently. For example, maintenance around the drainage grate at the Site has been episodic, and so the grate has not been regularly cleared as needed. As a result, soil and debris have piled up in the last couple of years. That debris, when not regularly cleared, blocks and reduces the amount of runoff flowing into the drainage grate.

The reduced maintenance has also affected hillside drainage systems. For example, as noted, above, the hillside area includes a concrete drainage channel, which would usually be cleared out once a year. As a result of the changes in maintenance focus and scheduling, the hillside drainage channel has at times filled up with debris and then can overflow and further overload the drainage system. This issue is also being addressed and has improved the drainage dynamics.

Conclusion

It is only within the last several months that the District has realized that deferred maintenance and stockpiling issues are adversely affecting the drainage dynamics. Current efforts to fix the clogged drainage are having immediate benefits. A more regular maintenance regime can ensure that the existing positive drainage system is not clogged and works as it was designed to do. In addition, the ongoing efforts to more regularly clear the hillside concrete drainage channel—so it can properly divert runoff to the storm drainage system—will further improve drainage as intended. Any saturation of the ground in and about the Site has been inadvertent, and returning to this prior scheduled maintenance is restoring the drainage at the Site as originally intended.

Please let me know if you need any additional information or have any further questions.

Respectfully,

T VanRaaphorst

Tina Van Raaphorst, Deputy Superintendent, Business Services