Montara Water and Sanitary District
Serving the Community of Montara and Moss Beach

P.O. Box 370131
8888 Cabrillo Hwy
Montara, CA 94037-0131
t: 650.728.3545 • f: 650.728.8556

To sensitively manage the natural resources entrusted to our care, to provide the people of Montara - Moss Beach with reliable, high – quality water, wastewater, and trash disposal at an equitable price, and to ensure the fiscal and environmental vitality of the district for future generations. Be open to providing other services desired by our community.

AGENDA

District Board of Directors

8888 Cabrillo Highway
Montara, California 94037

May 15, 2025 at 7:30 p.m.

The meeting will take place in the District offices located at the above address. Seating is limited and social distancing will be practiced due to ongoing public health and safety concerns. Simultaneous public access and participation are also available remotely, via telephone or the ZOOM application:

ZOOM MEETING INFORMATION:

WEBSITE: https://us02web.zoom.us/j/81447966142?pwd=iDtrD8G1eQTtYjbEyURb6ewYdjMbwb.1

MEETING ID: 814 4796 6142

Password 542474

CALL IN PHONE NUMBER: +1 669 900 9128

INSTRUCTIONS for remote access are available at https://support.zoom.us/hc/en-us/articles/201362193-Joining-a-Meeting. You also may view video during the meeting via live stream

or after the meeting at https://videoplayer.telvue.com/player/wuZKb9gwEY7sMACIIsr7VSJgIB35kNZA/stream/159?fullscreen=true&showtabssearch=false&autostart=false. If you experience technical difficulties or have technical questions prior to or during the meeting, please contact MWSD's IT support at (650) 728-7843.

Note: Public participation is not permitted during closed session discussion items.

Public Comment

In accordance with the Government Code, members of the public may address the Board on specific agenda items when the matter is announced by the Board President. Any other item of interest that is within the subject matter jurisdiction of the District may be addressed during the Oral Comments portion of the meeting. For participants attending the meeting virtually, a "raise hand" button is available for every Zoom user wishing to speak and should be used to alert the President of the intent to comment.

Upon request, this Agenda and written agenda materials will be made available in appropriate alternative formats to persons with a disability. Request for a disability-related modification or accommodation in order to participate in the public meeting should be emailed to info@mwsd.net or submitted by phone at 650-728-3545 at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility. Materials related to an item on this Agenda submitted to the Board after distribution of the Agenda Packet are available in the District Clerk's office during normal business hours. Such documents may also be available on the District's web site (www.mwsd.montara.org) subject to staff's ability to post the documents before the meeting.

Due to the current *Board Room Remodel Project* and structural concerns impacting the safety of attendees and participants, physical access to the Board's meeting room is limited. Thus, attendees may observe a live stream video and sound broadcast of the meeting in the hallway directly adjacent to the entrance of the meeting room. Speaker cards are available, and public comment is allowed one person at a time, as called into the meeting by the Board President. This above protocol is designed to reasonably balance safety concerns and transparency and preserves the public's right of access and meaningful participation in Board decision-making under the Brown Act. (Gov't Code §54953(a); Cal. Const., Art. 1, section 3(b)(1))

CALL TO ORDER

ROLL CALL

PRESIDENT'S STATEMENT

ORAL COMMENTS (Items other than those on the agenda)

PUBLIC HEARING

1. Review and Possible Urgency Actions Seal Cove Critical Geotechnical Hazards Area Emergency

CONSENT AGENDA

OLD BUSINESS

NEW BUSINESS

1. Receive San Mateo Resources Control District First Flush Report

2. Review and Possible Action Concerning Water Main Extension Agreement for New Service Connection at 350 9 TH Street, Montara, APN 036- 025-330

3. Review and Possible Action Concerning Authorization of a Purchase of The Airport Pump Station Portable Generator Replacement and Surplus Old Generator Units.

4. Review and Action Concerning Receipt of Funding for FEMA-Declared Disasters on Behalf of Sewer Authority Mid-Coastside

REPORTS

1. Sewer Authority Mid-Coastside Meetings (Slater-Carter).
2. Mid-Coast Community Council Meeting
3. CSDA Report (Slater-Carter)
4. LAFCo Report (Slater-Carter)
5. Attorney's Report (Fitzgerald)
6. Directors' Reports
7. General Manager's Report (Heldmaier).

FUTURE AGENDAS

CONVENE IN CLOSED SESSION

CONFERENCE WITH LEGAL COUNSEL – EXISTING LITIGATION (Government Code §54956.9(d)(1))

Case Name: City of Half Moon Bay v. Granada Community Services District, et al. (Santa Clara County Superior Court No. 17CV316927)

CONFERENCE WITH LEGAL COUNSEL- ANTICIPATED LITIGATION
Exposure to Litigation pursuant to paragraph (2) of subdivision (d) of Gov. Code § 54956.9 (1 potential case)

REPORT OF ACTION TAKEN IN CLOSED SESSION, IF ANY

ADJOURNMENT

The District has a curfew of 10:30 p.m. for all meetings. The meeting may be extended one hour by vote of the Board.

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

SUBJECT: Review and Possible Urgency Actions Seal Cove Critical Geotechnical Hazards Area Emergency

Since its March 27, 2025, meeting, this Board has taken several emergency actions related to the Seal Cove Critical Geotechnical Hazards Area, including continued adoption of a resolution suspending the competitive bidding requirements and immediate expenditure of funds for emergency repair work. This reoccurring item provides a status of 1) the emergency work performed and future work to be performed, and 2) the overall condition of the emergency in the Seal Cove Area, as required under Public Contract Code Sections 22050 and 20806. The Board may determine whether the situation warrants continuation of the emergency, which it is required to so do at every regular meeting following the emergency declaration.

Staff continue to address land movement and the impact to water and sewer assets in the Seal Cove Area and recommend that the emergency authorization continue. Since the last update provided at the May 1 meeting, staff have:

- Continued response to customer and resident concerns regarding movement on La Grande Ave, including meeting with numerous residents at their homes or responding via phone and email.
- Reviewed outreach efforts in response to community comments, and in order to maintain the District's commitment to updating Seal Cove residents regularly though both Board meeting updates and Updates distributed by mail.
- Met with the State Water Resources Control Board regarding status of District assets and water system in the hazard area.
- Met with District insurance providers and risk advisors to alert them of current system conditions.
- Continued to reviewed District files and history related to Seal Cove.
- Continued to coordinate with San Mateo County regarding:
    - The impact of land movement on District infrastructure.
    - Accessing and temporary repairs of District infrastructure damaged by land movement.
    - Proposed solutions to maintain water and sewer services in the geologic hazard area, which may include abandonment of water

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

mains, meter relocations, and above ground permanent service lines.

- Outreach and updates to Seal Cove residents.
- The critical value of County presence and services in the hazard area, and the need for County action to support District residents impacted by this hazard. This includes advocating for a community meeting in Seal Cove with County services (Public Works, Planning, Public Health, Mental Health Support Services, etc.) as well as Coastside County Fire Protection District, PGE, and the District in attendance.

Additionally, staff recommends that the Board continue temporarily suspending the issuance of sewer and water permits to the Area, especially because the County has red-tagged at least one residence and yellow-tagged several others. Pursuant to its statutory authority under the California Water Code and Health and Safety Code, the Board has authority to suspend or restrict service where continued operation would pose a hazard to public health, environmental safety, or District infrastructure. County-issued red and yellow tags serve as presumptive evidence of such hazardous conditions, thus warranting appropriate District response.

RECOMMENDATION:

MOVE approval determining that the emergency condition still exists and warrants continuing the suspension of competitive bidding and authorizing the expenditures of funds therefor

ADOPT "*Continuing Interim Urgency Ordinance of the Board of Directors of the Montara Water and Sanitary District Temporarily Suspending the Issuance of Water and Sewer Service Permits or Otherwise Restricting Said Service Within The Seal Cove Critical Geotechnical Hazards Area"*

O R D I N A N C E NO. ___

CONTINUING INTERIM URGENCY ORDINANCE OF THE BOARD OF DIRECTORS OF THE MONTARA WATER AND SANITARY DISTRICT TEMPORARILY SUSPENDING THE ISSUANCE OF WATER AND SEWER SERVICE PERMITS OR OTHERWISE RESTRICTING SAID SERVICE WITHIN THE SEAL COVE CRITICAL GEOLTECNICAL HAZARDS AREA

WHEREAS, the Montara Water and Sanitary District ("District or MWSD") is a Sanitary District duly organized under the Sanitary District Act of 1923 (Health & Safety Code §§ 6400 – 6830) and a public agency formed as a special district and authorized under California law, by a special election of August 11, 1992 and MWSD Resolution 978 to exercise all powers of a county water district in the same manner as county water districts formed under the County Water District Law (Division 12 (commencing with Section 30000) of the Water Code) and authorized to exercise its powers to take appropriate measures and actions to prevent or mitigate an emergency necessary to protect the public safety, health and environment and respond to infrastructure threats; and

WHEREAS, on or about March 16 2025, the District was alerted to active land movement along the coastal bluff in the Seal Cove Critical Geotechnical Hazards Area ("Area or Seal Cove Area"), including sinkholes, causing a series of line breaks and water leaks of MWSD infrastructure located within portions of public roads, including San Lucas Avenue, west of Del Mar Avenue, Ocean Avenue between San Lucas and Madrone, La Grande Avenue, Los Banos Avenue, as well as the Park Street and Beach Street intersection; and

WHEREAS, the Area lies along the Seal Cove earthquake fault line and numerous branch lines which are active and has long been designated by the County of San Mateo as a Geotechnical Hazard Area with low coastal cliff stability. The Area has been extensively studied regarding geotechnical and natural hazards that subject it to active landslides, seismic hazards, sea cliff erosion and sea level rise. A 1980 study identified four (4) Geotech zones (attached as Exhibit A is the Geologic Hazard Zone Study and Map) currently used by San Mateo County, the local agency with land use authority, as the guide for development in the Seal Cove Area; and

WHEREAS, San Mateo County's Building Department, Public Works Department, or Environmental Health Department may and/or has issued red tags and yellow tags or other safety placards restricting occupancy to certain properties within the Area due to threats to structural integrity, environmental contamination, or hazard to life and property; and

O R D I N A N C E NO. ___

CONTINUING INTERIM URGENCY ORDINANCE OF THE BOARD OF DIRECTORS OF THE MONTARA WATER AND SANITARY DISTRICT TEMPORARILY SUSPENDING THE ISSUANCE OF WATER AND SEWER SERVICE PERMITS OR OTHERWISE RESTRICTING SAID SERVICE WITHIN THE SEAL COVE CRITICAL GEOLTECNICAL HAZARDS AREA

WHEREAS, the ongoing land movement and cliffside instability in the Area and portions of MWSD's service area threatens the integrity of sewer and water supply lines and mains, increasing the risk of line breaks, sewage overflows, water loss, service interruptions and potential contamination of the District's water supply, including groundwater and coastal waters, making it unsafe to extend water and sewer service to properties in the Areas; and

WHEREAS, MWSD's infrastructure in unstable areas is not designed to withstand ongoing ground movement, and new connections could exacerbate system failures and costly emergency repairs. Further, increased development in unstable areas would place excessive strain on MWSD's system, jeopardizing service reliability for existing customers. MWSD must prioritize infrastructure stabilization and maintenance over continued use or expansion in high-risk areas; and

WHEREAS, continued provision of water or sewer services to structures affected by such conditions in a geologically unstable area may lead to line failure, overflows, or groundwater contamination and endanger the health and safety of the public and pose significant risk to District facilities and the environment; and

WHEREAS, the purpose of this ordinance is to immediately suspend the issuance of new water and sewer permits and/or restrict or discontinue service, including abandonment of District facilities, within the Seal Cove Area due to active land movement, seismic risks, and coastal erosion in order to prevent imminent threats to public health, safety, and infrastructure stability; such action is justified because delaying this ordinance would allow for continued issuance of permits, further increasing risks to public health and infrastructure stability; and

WHEREAS, under Health & Safety Code §§ 6512, 6512.7, 6518, 6520, 6521 and 6522, MWSD has authority to regulate, restrict, and prohibit new sewer connections when necessary to protect public health and system integrity; under Water Code §§ 31000, et. seq., MWSD has the authority to regulate and limit new water connections when necessary to protect the long-term stability of the water supply; and

WHEREAS, pursuant to its statutory authority under the California Water Code and Health and Safety Code, the District may temporarily suspend or restrict utility services where the condition of property lying within an identified geologic hazard zone poses a threat to the District's systems or public welfare; and

O R D I N A N C E NO. ___

CONTINUING INTERIM URGENCY ORDINANCE OF THE BOARD OF DIRECTORS OF THE MONTARA WATER AND SANITARY DISTRICT TEMPORARILY SUSPENDING THE ISSUANCE OF WATER AND SEWER SERVICE PERMITS OR OTHERWISE RESTRICTING SAID SERVICE WITHIN THE SEAL COVE CRITICAL GEOLTECNICAL HAZARDS AREA

WHEREAS, notice was published in the San Mateo County Times and the San Mateo County Recorder, newspapers of general circulation within the District, giving notice of a public hearing to take place on May 15, 2025 to consider adoption of a continuing interim ordinance suspending the issuance of permits within the Area; and

WHEREAS, all persons present at the aforesaid hearing interested in the adoption of the Ordinance were heard or given the opportunity to be heard on the matter of said adoption and this Board considered all statements so made or documents pertaining thereto presented at the hearing, if any.

NOW, THEREFORE, THE BOARD OF THE MONTARA WATER AND SANITARY DISTRICT, A PUBLIC AGENCY IN THE COUNTY OF SAN MATEO, CALIFORNIA, DOES ORDAIN AS FOLLOWS:

SECTION 1. The above recitals are true and correct and incorporated into these findings. Further incorporated into these findings is the District's staff report in support of emergency actions related to the Seal Cove Critical Geotechnical Hazards Area considered by the District's Board of Directors at a special meeting convened on March 27, 2025 and further at a regular meeting convened on May 15, 2025.

SECTION 2. Effective immediately, MWSD shall not accept applications for service nor issue new water or sewer permits for properties located within the Area, as defined in Exhibit A, nor allow the reactivation of inactive service or other actions that, in the opinion of the District's General Manager and/or the District's Water and Sewer Engineers, are necessary to protect the District's critical infrastructure, including the imposition of service conditions related to both District owned facilities and privately owned facilities, and that the District is not responsible for maintenance of private sewer pumps and laterals; excepting therefrom, repairs or replacements necessary to prevent imminent health and safety hazards. This Ordinance does not revoke permits that have already been issued except that such permits or connections are subject to the imposition of service conditions necessary to protect both District owned facilities and privately owned facilities.

SECTION 3. This moratorium shall remain in effect for sixty (60) days**,** or until the Board's second regular meeting in July, 2025, whichever is later, or unless extended by MWSD's Board of Directors pursuant to applicable law. During the moratorium period, MWSD will review existing geotechnical studies and conduct an infrastructure assessment to determine long-term mitigation measures and potential

temporary or permanent policy updates or code amendments to be considered by the Board.

SECTION 4. This ordinance is exempt from the California Environmental Quality Act (CEQA) under Public Resources Code § 21080(b)(4) and CEQA Guidelines § 15269(c) (emergency actions necessary to prevent or mitigate an imminent threat to public health and safety).

SECTION 5. If any section of this ordinance is held invalid, the remainder shall remain in full force and effect.

SECTION 6. All ordinances or portions thereof in conflict herewith shall be, and hereby are, temporarily suspended to the extent of such conflict.

SECTION 7. Upon adoption, this ordinance shall be entered in the minutes of the Board and posted for one-week in three (3) places in the District. The Secretary of the District shall certify the passage of this ordinance and cause the same to be published once in a newspaper of general circulation published in the District.

_____
President, Montara Water and Sanitary District

COUNTERSIGNED:

_____
Secretary, Montara Water and Sanitary District

* * *

I HEREBY CERTIFY that the foregoing Ordinance No.___ was duly and regularly adopted and passed by the Board of the Montara Water and Sanitary District, San Mateo County, California, at a regular meeting thereof held on the 15th day of May 2025 by the following vote:

AYES, Directors:

O R D I N A N C E NO. ___

CONTINUING INTERIM URGENCY ORDINANCE OF THE BOARD OF DIRECTORS OF THE MONTARA WATER AND SANITARY DISTRICT TEMPORARILY SUSPENDING THE ISSUANCE OF WATER AND SEWER SERVICE PERMITS OR OTHERWISE RESTRICTING SAID SERVICE WITHIN THE SEAL COVE CRITICAL GEOLTECNICAL HAZARDS AREA

NOES, Directors:

ABSENT, Directors:

_____
Secretary, Montara Water and Sanitary District

Geologic Analysis of the Seal Cove Area

EXHIBIT A

William Cotton and Associates	GEOTECHNICAL CONSULTANTS 314 TAIT AVE, LOS GATOS, CA 95030

GEOTECHNICAL HAZARDS MAP
SEAL COVE STUDY AREA

PLATE NO. 1	SCALE: 1"=200'	DATE: 8/5/80
PROJECT NO. G 112 -80	GEO./ENG. BY: JC DC WC	APPROVED BY: WJC

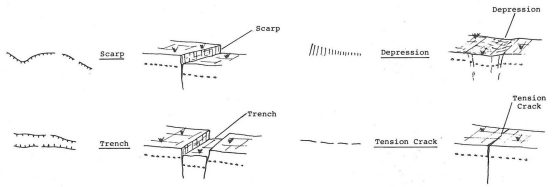
GEOTECHNICAL HAZARDS MAP

EXPLANATION

GEOTECHNICAL HAZARD ZONE	RISK ASSESSMENT	REQUIRED GEOTECHNICAL INVESTIGATION
ZONE 1 ■ Includes all lands located along the western seacliff that are adversely affected by active landslide processes and accelerated seacliff erosion. The position of the eastern boundary of this zone is established by the easternmost extent of active landsliding plus a setback of 50 feet. The setback zone includes lands which lie outside or east of the active landslides but are expected to experience problems in the future (i.e. 50± years).	***UNSTABLE*** ■ Risk to development in this zone is considered to be extremely high. It is reasonable to conclude that slow progressive landsliding and seacliff retreat will continue, resulting in structural and property damage. This is especially true for structures or utilities located astride active surface breaks. Rapid catastrophic slope failure of the high, steep portion of the seacliff located west of Ocean Boulevard is a clear probability. Such an event could involve the loss of life as well as significant property damage. The feasibility of reducing the risk to acceptable levels is extremely low. * No additional development should be allowed in this zone.	■ No investigation deemed feasible due to the severity of the instability.
ZONE 2 ■ Includes all lands within a 100-foot wide zone located immediately adjacent to the zone of active landsliding and accelerated seacliff erosion (i.e. Zone 1). The position of the eastern boundary of this zone is established in part by an approximate 2:1 (i.e. 26° degrees) projection measured from the base of the high seacliff located west of Ocean Boulevard.	***QUESTIONABLE STABILITY*** ■ Risk to development in this zone is considered to be moderate to high. Eastward progression of active landsliding is difficult to predict with reliable accuracy. The likelihood of eliminating the risk is very low, however it may be possible to significantly reduce the impact of the hazard by properly designed foundations. * No development should be allowed in this zone until stability is clearly demonstrated by the required geotechnical investigations.	■ Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above. • Scope of both investigations should be directed toward a detailed evaluation of the potential landslide hazards in this zone. In most cases, landslide studies will require extensive subsurface work in order to provide the necessary technical data to conduct a detailed slope stability analysis. The geotechnical analysis should provide acceptable factors of safety to clearly demonstrate stability before construction is allowed in this zone.
ZONE 3 ■ Includes all lands located outside of the areas affected by active or potential landslides.	***MOST STABLE*** ■ Risk to development in this zone is considered to be low to moderate. The major geologic hazard in this zone is the threat of surface faulting along the master fault trace and several branching fault traces of the Seal Cove fault. These faults are active and capable of producing damaging surface faulting, strong ground shaking and ground failure. The relative risk associated with poor surface drainage and potentially expansive soils is generally regarded as moderate to locally high. The feasibility of reducing the risks to acceptable levels in this zone is considered high. This can be accomplished by careful siting of homes away from active faults, using careful structural and foundation design and adequate surface drainage plans. However, it is possible that some residential parcels will be judged unbuildable due to high seismic hazards. * Development should be allowed in this zone on parcels found to be free of hazardous conditions by the required geotechnical investigations.	■ Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above, unless evidence is available to show that such investigations are not required. • Scope of engineering geologic investigation should address the seismic hazards related to the master and branching traces of the Seal Cove fault. Particular emphasis of the engineering geologic investigations should be placed on the evaluation of possible surface faulting. Investigative techniques within this area will require the use of subsurface trenching and possibly geophysical traverses unless clear evidence is established to show that no active fault crosses the parcel in question. • The soil and foundation engineering investigation should address, but not necessarily be confined to, the following items: site preparation and grading, surface drainage, and design parameters for residential foundations.

MAP SYMBOLS

ACTIVE LANDSLIDE FEATURES



ACTIVE FAULT FEATURES

Faults by Leighton and Associates (1971)

Fault-Related Features Compiled from Aerial Photographs

GEOTECHNICAL HAZARD ZONE BOUNDARY

AREA OF POOR SURFACE DRAINAGE

NOTES TO USERS

■ This map provides geotechnical data based on detailed surface mapping, interpretation of aerial photographs and the geologic data presented in the report entitled Geologic Report of Seal Cove – Moss Beach Area, October 15, 1971 by F. Beach Leighton and Associates. The map is primarily designed for use by geologists, engineers and planners and is not intended to be a substitute for detailed site specific geotechnical investigations.

Additional description and explanation of the geologic conditions of the Seal Cove study area may be found in the accompanying report entitled Geologic Analysis of the Seal Cove Area, County of San Mateo, August 5, 1980 by William Cotton and Associates.

GEOLOGIC ANALYSIS
OF THE
SEAL COVE AREA
COUNTY OF SAN MATEO

William Cotton and Associates

William Cotton
and Associates

GEOTECHNICAL CONSULTANTS
314 Tait Avenue, Los Gatos, California 95030
(408) 354-5542

David C. Hale, Director
Planning Department
County of San Mateo
590 Hamilton Street
Redwood City, California 94063

August 5, 1980
G112-80

Dear Mr. Hale:

In accordance with our agreement with the County of San Mateo (#5500-80-426) dated July 14, 1980, the final geologic report is hereby submitted.

As a result of our work, the original Geologic Map of the Seal Cove area has been updated and a number of recommendations are presented herein in order to help strengthen the present land use policies that control development.

Our report is presented in two basic parts consisting of a Conclusions and Recommendations section followed by a Technical Report section. The technical report describes the geologic data and analysis that we used to support the final conclusions and recommendations.

It has been our pleasure to be of service to the County on this interesting project. If we can be of help in clarifying any aspect of this report, please do not hesitate to contact our office.

Sincerely yours,

WILLIAM COTTON AND ASSOCIATES

William R. Cotton
Engineering Geologist, CEG 882

bp

Attached report

CONCLUSIONS
AND
RECOMMENDATIONS

GEOLOGIC
ANALYSIS
OF THE
SEAL COVE AREA

COUNTY OF SAN MATEO
CALIFORNIA

August 1980

William Cotton and Associates

CONCLUSIONS

The Seal Cove study area is exposed to a variety of geologic hazards that severely affect future land use decisions. These conditions and the level of associated risk were well documented nearly a decade ago by a County-authorized geologic study conducted by Leighton and Associates (October 1971). The present study was designed to update the geologic information presented in the Leighton report and to reevaluate the residential development regulations.

The following geologic hazards are the principal geologic concerns of the Seal Cove area:

Landsliding - Deep-seated landslides presently are destroying extensive sections of the seacliff region which define the western edge of the study area. Approximately 17 homes have suffered some form of structural damage due to landslide activity. The inland extent of the active landsliding from the coastline ranges between 100 to 400 feet; however, the average distance is nearly 250 feet. The average rate of landslide movement is very slow, probably ranging between 1 and 3 inches per year. However, the probability of accelerated movements is considered high in many local areas within the presently failing landslide complex. This is especially true of the high seacliff area located west of Ocean Boulevard where rapid catastrophic failure is a clear possibility.

Faulting - The active Seal Cove fault and a number of branching fault traces pass through the study area. The main trace is confined to a 100-foot-wide zone located along the eastern margin of the study area. Although most of this zone lies outside of the study area, the branching fault traces pass through the main portion of the residential area. All of these faults are considered to be active, and thus, capable of generating earthquakes with associated ground shaking, surface faulting and ground failure.

Seacliff Erosion - The entire coastline area presently is experiencing severe erosion by wave activity. This erosion process causes the seacliff to become undercut at its base and locally unstable. The oversteepened face of the seacliff responds by shallow, piecemeal sloughing; however, natural stability is never achieved due to the constant erosional activity within the surf zone. The result is a systematic retreat of the seacliff by local episodic sloughing. The average rate of cliff retreat is approximately 3 to 4 feet per year in the Seal Cove area.

A number of additional geologic problems have been identified in the Seal Cove area; however, these are

relatively minor hazards when compared to those outlined above and can be significantly mitigated by design. These problems include potentially expansive soils, poor surface drainage and problems associated with shallow ground water.

RISK ANALYSIS

The development of sound public policy to deal with the geologic hazards of the Seal Cove area requires an answer to the question, "How safe is safe enough?" The information and anlysis presented in this report is an attempt to provide the necessary framework on which the appropriate County decisionmakers can judge acceptable levels of risk.

To properly assess the appropriate level of risk to the community, a number of important steps are essential. First, and probably most importantly, the presence of geologic hazards must be recognized. In the Seal Cove area, although the original subdivision was initiated in the early 1900's, the hazardous landslide and fault conditions were not recognized until nearly ten years ago. Consequently, many homes and streets were built on active landslides or astride active traces of the Seal Cove fault, and thus, have sustained considerable damage.

The second step in this process takes place after the geologic hazards have been recognized. This step requires detailed studies to determine the physical characteristics of the hazards. For the Seal Cove area, this was accomplished through the initial geologic study conducted by Leighton and Associates in 1971. They identified a large area of active landslides, and a number of fault traces associated with the Seal Cove fault. As an important part of their investigation, they provided a detailed description of the dimensions and level of activity of the landslides and faults.

Once the geologic hazards are recognized and carefully characterized, then the degree or level of risk associated with each hazard can be evaluated. In the Seal Cove area the present land use tends to limit the exposure of risk mainly to utilities, streets and houses; however, the potential for personal injury or loss of life is possible in local areas. The decision as to whether the various levels of risk are tolerable or intolerable to the public requires the input of the County decisionmakers. An important part of any risk analysis is the consideration of possible mitigating measures that could reduce the risk associated with each type of hazard. This kind of action is usually the product of the democratic process and depends as much on social, economic and environmental values as on geologic knowledge. There are a number of mitigating measures that may reduce risk to tolerable levels. For example, land use may be regulated to the degree that residential development is simply restricted from

hazardous areas, thus the hazard is avoided and the risk is essentially eliminated. This has been done in the Seal Cove area by prohibiting construction in active landslide areas, astride active fault traces and close to the edge of the seacliff.

Another method of reducing the risk is by attempting to reduce the impact of the hazard. This might include requirements for special foundations for residential structures, improved drainage facilities, flexible utilities and stronger construction techniques. No significant attempts have been made in the Seal Cove area to reduce the impact of landslide or fault hazards by design, and indeed, to attempt to do so does not seem reasonable. Likewise, attempts to reduce the risk associated with the landslides and faults by controlling these hazardous processes is impractical, if not impossible.

In summary, it is our opinion that the only practical means of reducing the risk associated with landslide and fault hazards is by prudent land use regulations. Any land use policy should balance the risk against the social, economic and environmental cost in order to determine the level of risk acceptable to the community.

RECOMMENDATIONS

The following recommendations are presented for consideration by the County in order to establish prudent land use policies within the Seal Cove area. We believe that the recommendations are consistent with the goals and objectives of the Seismic Safety Element of the General Plan, the original recommendations presented in the Leighton report, and the minimum standards for geotechnical reports which were adopted by the County in 1977. However, after careful review by the County these recommendations may be altered to reflect the final expression of the County perception of acceptable risk.

1) Critical Hazards Area - Due to the complexity of the hazardous geologic conditions in the Seal Cove area we recommend that the entire study area be designated as a "Critical Geotechnical Hazards Area." Such a designation would "red flag" the region as an area of high geologic hazards for which special or more detailed geologic and soil investigations (i.e. geotechnical) will be required prior to development. Additionally, such a designation would alert present and future landowners to the hazardous conditions and the potential higher than normal cost of development.

To protect the interest of the County, individual landowners, and local developers geologic and/or soil investigations of appropriate level should be required fo all lands within the study area. These investigations will normally exceed the minimum standards adopted by the County and will specifically address the primary geology and hazard of the site in question.

2) Geotechnical Hazards Map - To facilitate the required geologic and/or soil investigations we have prepared a new hazard zonation map for the Seal Cove area. This map is a modification of the original map prepared by Leighton and Associates in 1971 and is based upon new landslide and fault information generated during the present study. The changes from the original zonation map include (1) combining hazard zone 3 and 4, and (2) moving the boundary of hazard zone 1 and 2 to the east. The geotechnical hazard zones have been compiled on the new 200-scale County base map which we believe is a more useful map because it superimposes property boundaries on an orthophotographic base.

The Geotechnical Hazards Map divides the Seal Cove area into three zones on the basis of similar geotechnical hazards or problems. Consequently, the terrain within each zone is considered to have similar potentials and constraints for development. In essence each zone reflects different levels of risk to man and structures.

The physical conditions and the associated risk of the three zones are described on the Geotechnical Hazards Map along with the various levels of geotechnical investigations required to evaluate the particular hazards in each zone. The following section describes the criteria for each hazard zone, defines the associated risk for development in each zone and defines the scope of reguired geotechnical investigations. It is recommended that the Geotechnical Hazards Map be officially adopted by the County as part of the final land use policy to guide future development in the Seal Cove study area.

ZONE 1 - Includes all lands located along the western seacliff that are affected by active landslide processes and accelerated seacliff erosion. The position of the erosion boundary of this zone is established by the easternmost extent of active landsliding plus a setback of 50 feet. The setback zone includes lands which lie outside or east of the active landslides but are expected to experience problems in the future (i.e. 50± years).

Risk Assessment - Risk to development in this zone is considered to be extremely high. It is reasonable to conclude that slow progressive landsliding and seacliff retreat will continue, resulting in structural and property damage. This is especially true for structures or utilities located astride active surface breaks. Rapid catastrophic slope failure of the high, steep portion of the seacliff located west of Ocean Boulevard is a clear probability. Such as event could involve the loss of life as well as significant property damage.

The feasibility of reducing the risk to acceptable levels is extremely low.

No additional development should be allowed in this zone.

ZONE 2 - Includes all lands within a 100-foot wide zone located immediately adjacent to the zone of active landsliding and accelerated seacliff erosion (i.e. Zone 1). The position of the eastern boundary of this zone is established by a 2:1 (i.e. 26± degrees) projection measured from the base of the high seacliff located west of Ocean Boulevard.

Risk Assessment - Risk to development in this zone is considered to be moderate to high. Eastward progression of active landsliding is difficult to predict with reliable accuracy.

The likelihood of eliminating the risk is very low, however it may be possible to significantly reduce the impact of the hazard by properly designed foundations.

No development should be allowed in this zone until stability is clearly demonstrated by the required geotechnical investigations.

Required Geotechnical Investigation - Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above.

- Scope of both investigations should be directed toward a detailed evaluation of the potential landslide hazards in this zone. In most cases, landslide studies will require extensive subsurface work in order to provide the necessary technical data to conduct a detailed slope stability analysis. The geotechnical analysis should provide acceptable factors of safety to clearly demonstrate stability before construction is allowed in this zone.

ZONE 3 - Includes all lands located outside of the areas affected by active or potential landslides.

Risk Assessment - Risk to development in this zone is considered to be low to moderate. The major geologic hazard in this zone is the threat of surface faulting along the master fault trace and several branching fault traces of the Seal Cove fault. These faults are active and capable of producing damaging surface faulting, strong ground shaking and ground failure.

The relative risk associated with poor surface drainage and potentially expansive soils is generally regarded as moderate to locally high.

The feasibility of reducing the risks to acceptable levels in this zone is considered high. This can be accomplished by careful siting of homes away from active faults, using careful structural and foundation design and adequate surface drainage plans. However, it is possible that some residential parcels will be judged unbuildable due to high seismic hazards.

Development should be allowed in this zone on parcels found to be free of hazardous conditions by the required geotechnical investigations.

Required Geotechnical Investigation - Engineering geologic investigation by a certified engineering geologist and a soil and foundation engineering investigation by a registered civil engineer, or a combined equivalent of the above.

- Scope of engineering geologic investigation should address the seismic hazards related to the master and branching traces of the Seal Cove fault. Particular emphasis of the engineering geologic investigations should be placed on the evaluation of possible surface faulting. Investigative techniques within this area will require the use of subsurface trenching and possibly geophysical traverses unless clear evidence is established to show that no active fault crosses the parcel in questions.

- The soil and foundation engineering investigation should address, but not necessarily be confined to, the following item: site preparation and grading, surface drainage, and design parameters for residential foundations.

All of the geotechnical investigations should reference this report and the geologic data presented in the Leighton and Associates report of 1971 and the Seismic and Safety Elements of the General Plan of 1976. The geotechnical reports describing the results of these investigations should be reviewed by the County Geologist following the procedure that is currently in practice. The recommendations expressed in the soil and foundation engineering reports and/or the engineering geologic reports should become conditions of any development application.

TECHNICAL REPORT

GEOLOGIC ANALYSIS OF THE SEAL COVE AREA

County of San Mateo

California

August 1980

William Cotton and Associates

William Cotton
and Associates

GEOTECHNICAL CONSULTANTS
314 Tait Avenue, Los Gatos, California 95030
(408) 354-5542

To: David C. Hale
Planning Director
County of San Mateo

August 5, 1980
Project G112-80

From: William Cotton and Associates
Geotechnical Consultants

Subject: Geologic Analysis
Seal Cove Area
County of San Mateo, California

INTRODUCTION

At the request of the County of San Mateo we have completed an investigation of the geologic conditions of the Seal Cove area. The primary purpose of our work was to evaluate and update the existing Geologic Map of the area, to identify and characterize the geologic hazards that constrain development, and to evaluate the level of risk associated with the hazardous conditions.

The geologic investigation included the following tasks: (1) detailed geologic surface mapping of the study area at a scale of 1 inch = 200 feet, (2) compilation and analysis of geologic and soil engineering data taken from reports and maps held in the County files, (3) stereoscopic evaluation of sequential aerial photographs, and (4) discussions with area landowners. The equivalent of eight man-days were spent collecting and compiling field data.

In preparing this report we have relied heavily on the following documents:

- Geologic Report of Seal Cove and Moss Beach Area,
  F. Beach Leighton and Associates,
  October 15, 1971.

- Geotechnical Hazards Synthesis Map for
  San Mateo County, Leighton and Associates,
  and San Mateo County Planning Department,
  June 1975.

- Seismic and Safety Elements of the
  General Plan, Vol. 1 and 2; San Mateo
  County Planning Department, December 1976.

The geologic data and discussions presented in this report should be regarded as updated and reevaluated information taken from the Leighton report and should not be considered to supersede or diminish the importance of their work. Future development in the Seal Cove area should not proceed without reference to both of these reports and the data compiled for the seismic safety element of the County of San Mateo.

ACCOMPANYING ILLUSTRATIONS

Geotechnical Hazards Map, 1 inch = 200 feet, Plate 1 Pocket

Index Map, Figure 1

Topographic and Geologic Index Map, Figure 2

Schematic Geologic Cross Section, Figure 3

Mode of Rock Slump Failure, Figure 4

Progressive North to South Failure of Seacliff Region, Figure 5

Progressive Seacliff Erosion, Figure 6

Seal Cove Fault System, Figure 7

DEVELOPMENT HISTORY

The portion of coastal San Mateo County that is included in this study is a residential section known as Seal Cove which is located in the southern part of the community of Moss Beach (Figure 1). The northern and southern boundaries of the study area are defined by Cypress and Bernal Avenues, respectively, and include all of the residential property located between the Half Moon Bay Airport and the ocean.

The Seal Cove area was subdivided into residential parcels about 1908. The area was subdivided into 2500 square foot lots with roads and improvements (i.e., streets, sidewalks and utilities) without regard for the geologic constraints. In fact, the primary attraction of the Seal Cove area was the presumed relatively low level of risk associated with the setting as compared to the San Francisco region that was devastated during the earthquake of 1906. The existing street alignments and the lot configurations are essentially the same as the original 1908 development plan. Since that time, residential construction has proceeded at a rather slow, piecemeal rate with home construction being limited to parcels of 5000 square feet.

In the late 1960's development in portions of the Seal Cove community was identified by the U.S. Geological Survey as being constrained by high geologic hazards due to active landsliding and accelerated coastal erosion. On the basis of this information, the County of San Mateo placed a building freeze on the Seal Cove area and authorized Leighton and Associates, the County Geologists, to complete a detailed geologic study of the area and to provide the County with guidelines for future development. The geologic study was completed and the final report was accepted by the County in October of 1971. The Leighton report clearly identified the primary geologic constraints of the Seal Cove as landsliding, faulting, and seacliff erosion. In addition, the report identified less severe potential problems associated with poor surface drainage, high ground water, and expansive soils. On the basis of these concerns, the Seal Cove area was divided into four Geologic Hazard Zones that define different levels of relative geologic stability. The description of each zone identifies the primary geologic hazard that constrains development and defined the type of geologic and soil report that would be required prior to residential development. Table 1 outlines the four hazard zones as presented in the Leighton report of October 15, 1971.

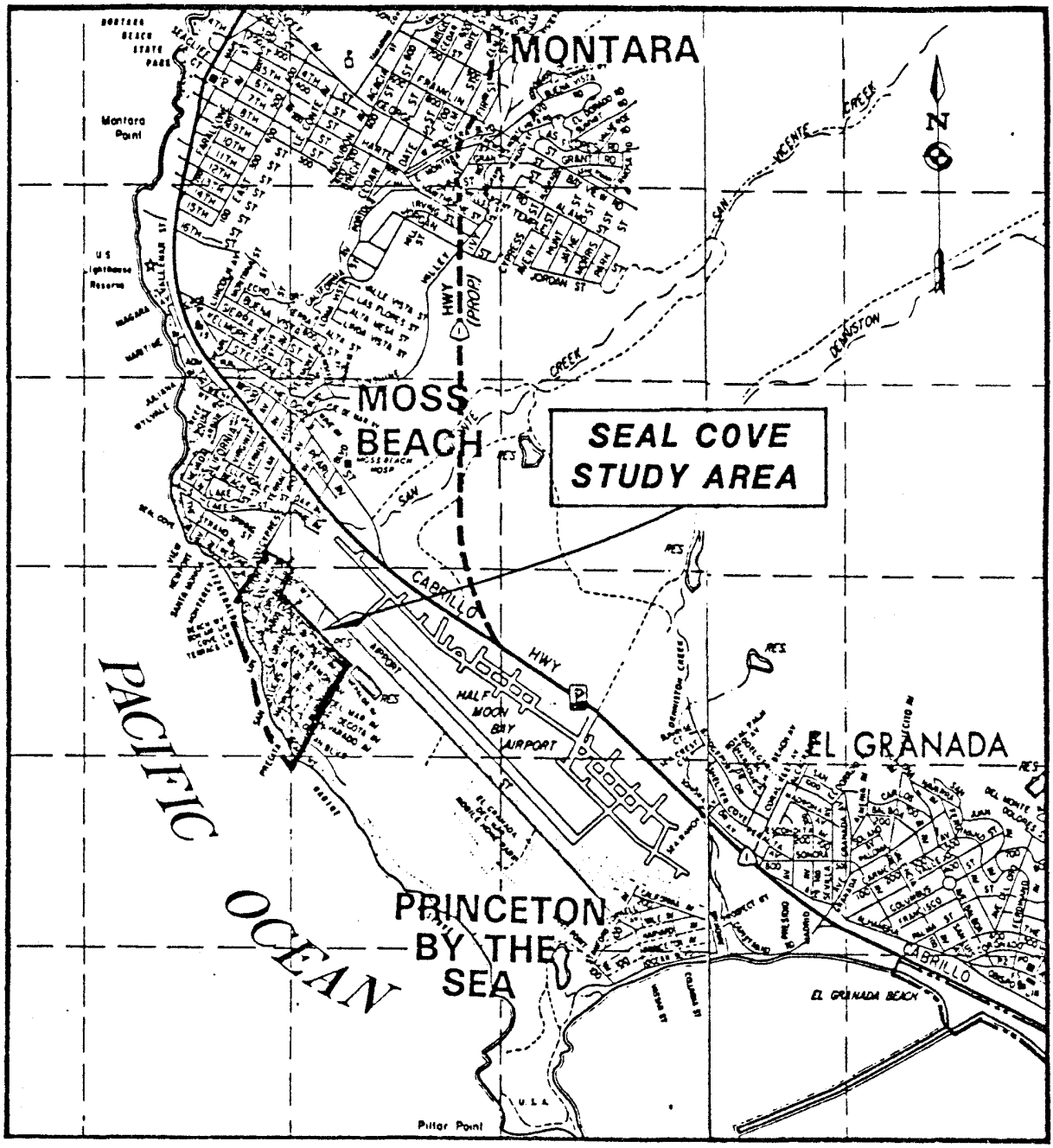


FIGURE 1 - INDEX MAP

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

ZONAL RATINGS	GEOLOGIC STABILITY RATINGS	MAJOR GEOLOGIC PROBLEM TYPES	NATURE OF FUTURE GEOLOGY AND SOILS REPORTS REQUIRED
1	MOST SEVERE INSTABILITY	LANDSLIDING (RAPID MOVEMENTS LIKELY)	FEASIBILITY OF CORRECTION HIGHLY IMPROBABLE
2	UNSTABLE	PROGRESSIVE LANDSLIDING, EROSIONAL RETREAT OF BLUFFS, HIGH GROUND WATER AND ACTIVE FAULTING	DETAILED SUBSURFACE INVESTIGATIONS WILL BE NECESSARY TO ANALYZE INSTABILITY
3	DEGREE OF INSTABILITY QUESTIONABLE	COMBINATIONS OF THE ABOVE	DETAILED SUBSURFACE INVESTIGATIONS WILL BE NECESSARY TO DETERMINE DEGREE OF STABILITY
4	MOST STABLE	TYPICAL SOILS PROBLEMS (EXPANSIVE SOILS, ETC.); LOCALIZED GEOLOGIC PROBLEMS (SOIL CREEP, ETC.); SEISMIC RESPONSE, ETC.	CONVENTIONAL INVESTIGATIONS WILL PROBABLY BE ADEQUATE

TABLE 1 - GEOLOGIC HAZARD ZONES AS DEFINED BY LEIGHTON AND ASSOCIATES, OCTOBER 15, 1971

In November of 1971 the County accepted the conclusions and recommendations of the Leighton report and imposed a number of building restrictions on the parcels within the four hazard zones. In addition, Leighton and Associates prepared and sent to the County a specified set of guidelines for geologic and soil investigations conducted in the Seal Cove area. On the basis of the new information, the building freeze was lifted but residential development was allowed to proceed only after the necessary geologic and/or soil investigations were satisfactorily completed. The required reports were reviewed by Leighton and Associates on a part-time basis until 1975 when the County retained A. C. Neufeld as the permanent County Geologist.

The present policy regarding geologic and soil reports has been altered slightly from the recommendations of the Leighton report. At present, detailed geologic and soil investigations are required in Geologic Hazard Zones 1 and 2; however, in zones 3 and 4 such investigations are only required when a parcel is located within fifty feet of a mapped fault. Normally, areas located outside of the fifty foot zone do not require any geologic or soil report prior to construction. The adequacy of the geologic and soil report are evaluated by the County Geologist according to the Minimum Standards for Geotechnical Reports adopted by the County and the review procedures developed by the County Geologist. In some cases the County Geologist has imposed stricter and, at times, more reduced standards where local geology or soil data warrant such changes.

Since the suspension of the 1971 building freeze, 16 new homes have been constructed in the study area. These homes are situated within the following Geologic Hazard Zones as defined by Leighton and Associates:

ZONE 1 - Most severe instability - no development

ZONE 2 - Unstable - 9 new homes

ZONE 3 - Degree of instability questionable - 5 new homes

ZONE 4 - Most stable - 2 new homes

Our evaluation of the locations and conditions of the new homes indicates that the present stability of most homes is good; however, the safety of two of these homes is in question. These homes are situated in Geologic Hazard Zone 2. The specific locations and geologic concerns of these structures are outlined below:

LOCATION	GEOLOGIC PROBLEM
131 La Grande Avenue	Home, deck and patio constructed within several feet of an active landslide scarp
821 Ocean Boulevard	Front portion of home and driveways are situated over an active landslide tension crack

The home on La Grande was constructed east of a major, active landslide scarp that was well documented in the Leighton report, and recognized by the owner's consultants prior to construction. But at the time that the home on Ocean Boulevard was constructed, no surface evidence of landsliding was noted. Apparently the landslide-related surface cracking has extended to this location since the Leighton investigation of 1971. Small incipient surface cracks can be traced from the parcel on Ocean Boulevard to the east under the neighboring parcel where residential damage is more pronounced, and then north across La Grande Avenue to the prominent scarp area located west of 131 La Grande Avenue.

Our analysis of the geologic hazards of the Seal Cove area indicate that the landslide activity is progressing as predicted nearly a decade ago; however, the previously mapped fault pattern appears to be more complex. As a result of our work we have reevaluated the original hazard zones and have altered the positions of some boundaries. Additionally, we have recommended specific changes in the type and scope of future geotechnical investigation in the Seal Cove area.

PHYSICAL PARAMETERS: Topographic, Geologic and Seismic

The Seal Cove area is characterized by a unique set of physical parameters that strongly influence safe development. The physical conditions that have the most influence are those that relate to the topographic, geologic and seismic setting of the study area. The general characteristics of each of the conditions and their associated constraints and potentials for development are described in the following sections.

TOPOGRAPHIC SETTING - The portion of the community of Moss Beach that is included in this investigation is situated at the north end of a prominent northwest-trending ridge (Figures 2 and 3). The ridge extends from Pillar Point on the south to beyond Seal Cove for a distance of approximately two miles. An east-west profile across the ridge is assymetrical, characterized by a high, near-vertical seacliff along the western side, a nearly flat terrace surface along the top of the ridge, and a gentle, east-facing slope along the eastern border. The average elevation is nearly 100 feet throughout most of the ridge area, but the ridge top rises to approximately 175 feet above sea level south of the study area. Within the immediate residential portion of the study area the topography is relatively flat with a topographic relief of no more than 25 feet.

The present topography of the Seal Cove area and the surrounding ridge is the product of a long history of rather dynamic geologic processes, of which most are still actively modifying the area. These processes include active landsliding, accelerated seacliff erosion and young fault activity. The terrain that is not affected by these hazardous processes have a relatively high potential for safe development. Such areas are within the essentially flat terrace region situated east of Beach Way and Ocean Boulevard.

GEOLOGIC SETTING - The geologic setting of the Seal Cove area is defined by a variety of earth materials, active slope failure processes and a complex fault zone related to the Seal Cove fault system. The following discussion is designed to present a general description of the geologic setting. For a more detailed account, the Geologic Report of Seal Cove-Moss Beach Area, October 15, 1971 by F. Beach Leighton and Associates, should be consulted. Their report presents a large volume of detailed surface and subsurface geologic data in written and illustrative form. The description of the geologic setting included in this report is based on our field mapping and the information presented in the Leighton report.

The primary earth materials in this part of the Seal Cove community can be divided into two dramatically different types of bedrock units which are overlain by two types of

EXPLANATION

Earth Materials

SURFICIAL UNITS

Qls - Landslides

Rock slumps of surficial and bedrock material

Qt - Marine Terrace

Unconsolidated gravel, sand and silt

BEDROCK UNITS

Tp - Purisima formation

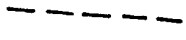
Highly fractured siltstone, shale and sandstone

Kg - Montara Quartz Diorite

Coarse-grained quartz diorite

Map Symbols


Geologic Contact


Faults


Landslides

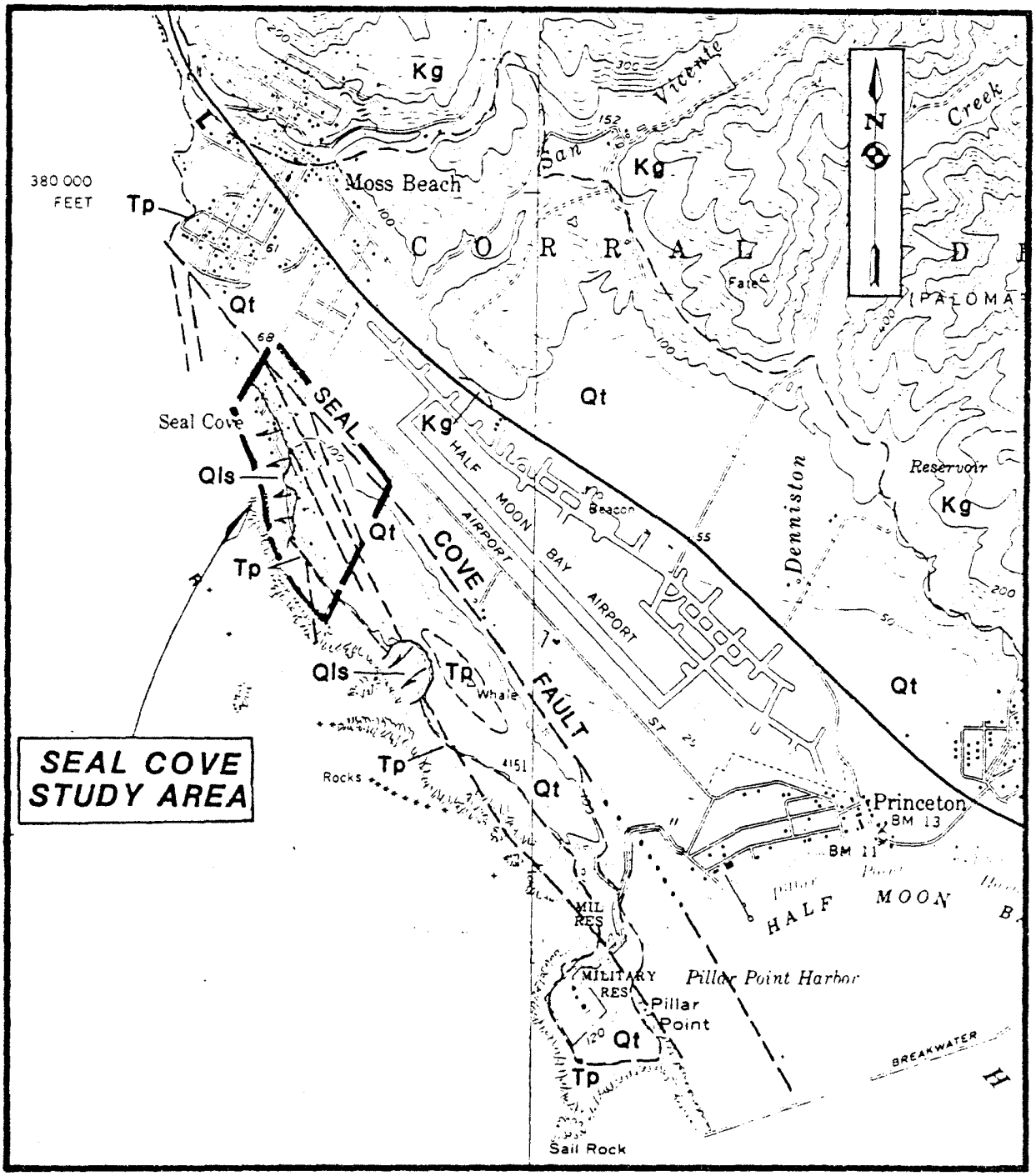


FIGURE 2. TOPOGRAPHIC AND GEOLOGIC INDEX MAP

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA
Scale 1 inch = 2,000 feet

Topographic base map, Montara Mountain and Half Moon Bay Quadrangles, 7.5 minute. U.S. Geological Survey

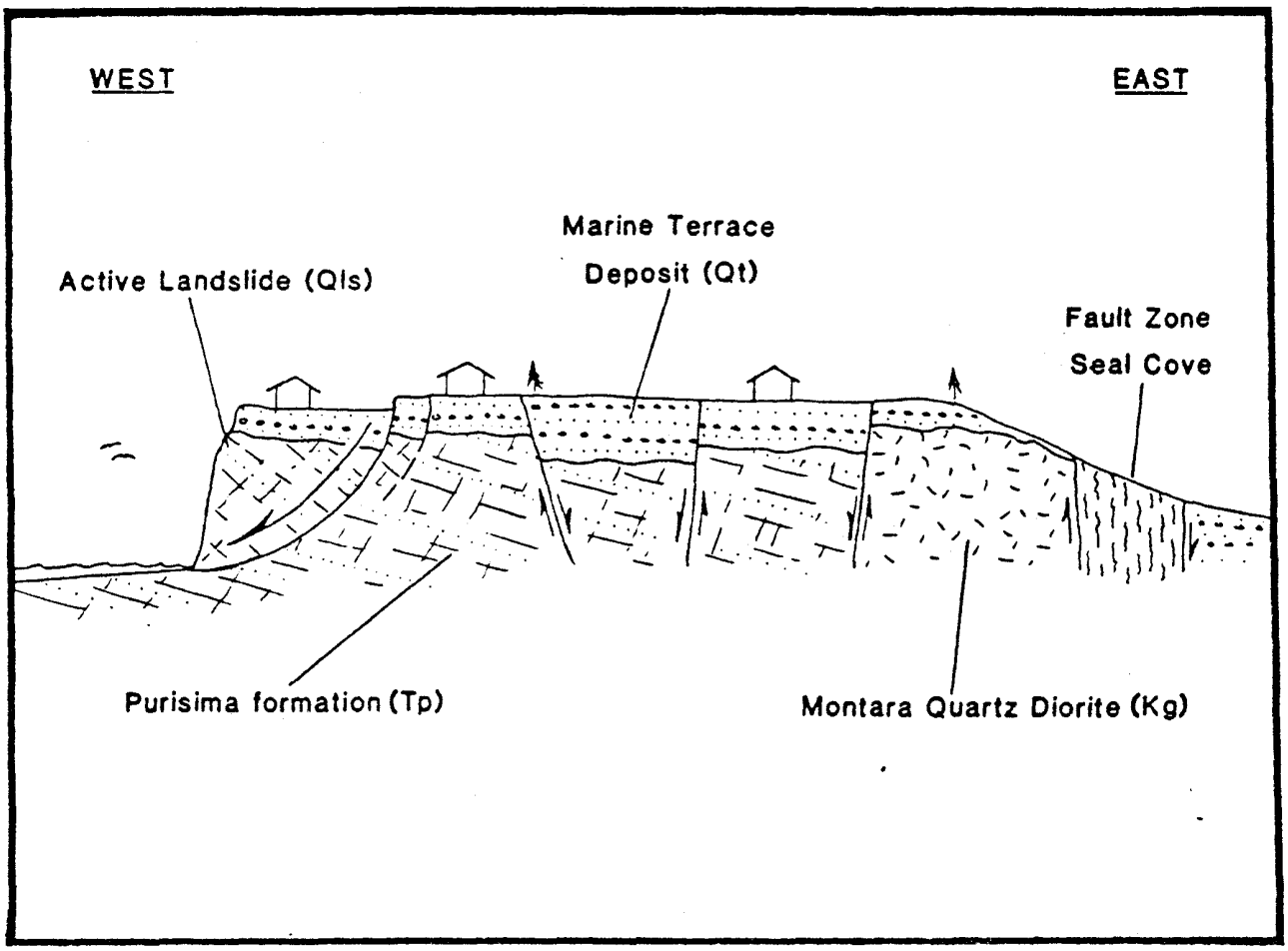


FIGURE 3 SCHEMATIC GEOLOGIC CROSS SECTION

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

surficial deposits (Figures 2 and 3). The two bedrock units consist of a relatively fine-grained sequence of sedimentary rocks belonging to the Purisima formation (Tp) and a massive coarse-grained igneous rock of the Montara Quartz Diorite (Kg). These materials make up the bulk of the rock materials that form the prominent ridge topography, however, in most areas the bedrock is covered by the surficial deposits. The surficial materials consist of a sedimentary Marine Terrace deposit (Qt) that blankets all of the nearly flat topography of the study area, and a complex of active landslides deposits (Qls) which are presently destroying large sections of the western seacliff region. The following discussion describes the physical nature of each type of earth material in the Seal Cove area.

Surficial Units - the relatively unconsolidated deposits that overlie the bedrock material.

Landslide (Qls) - The landslide deposits are composed of both the overlying surficial Marine Terrace and the Purisima bedrock materials. The primary type of failure appears to be rock slump with movement concentrated along deep-seated failure planes. The landslides are concentrated in a coastal belt along the western margin of the study area that extends inland as far as 300 to 400 feet.

Marine Terrace (Qt) - These deposits form a blanket-like covering of gravel, sand, and silt that overlies the bedrock units throughout the relatively flat portion of the study area. The thickness ranges from 3 to 4 feet to as much as 40+ feet.

Bedrock Units - the relatively consolidated materials which form the major portion of the ridge and which the surficial units rest.

Purisima formation (Tp) - This unit consists of a thin-bedded, highly fractured, interlayered sequence of siltstone, shale, and sandstone. The bedrock is exposed along the entire length of the seacliff area and has been encountered in drill holes located approximately 800 feet east of the seacliff area.

Montara Quartz Diorite (Kg) - This bedrock type is not exposed at the surface but has been penetrated in drill holes along the eastern margin of the study area. It consists of deeply-weathered, medium- to coarse-grained quartz diorite.

The most active geologic process now operating in the study area are two distinctly different types of slope failure. They are confined to the seacliff region and include (1) deep-seated landsliding involving large segments of the seacliff, and (2) shallow sloughing and ravelling of the face of the seacliff.

LANDSLIDING - Active, deep-seated landsliding presently is affecting most of the seacliff located along the western margin of the study area. The average height of the seacliff is approximately 100 feet and, in most cases, the entire seacliff is involved in landsliding. The locations of the crowns (i.e. tops) of the landslides vary considerably, but in several places the crowns are located as much as 300 to 400 feet back (i.e. east) of the top of the seacliff, however, the average distance is nearly 250 feet. The depth to the basal slide planes of these landslides is not well known, but from the surface dimensions it is estimated that the depths equal or exceed the height of the seacliff. Thus, the toes (i.e. bottoms) of most of these landslides are near the base of the seacliff and sea level (Figure 4).

Detailed surface mapping and subsurface drill hole data strongly suggest that the mode or style of slope failure can be characterized as (1) progressing from the north to the south and (2) undergoing rotational failure along a concave-upward basal rupture surface. The north-to-south progressive failure is revealed by the pattern and dimension of the surface breaks noted along the crowns of the individual landslides (Figure 5). For example, the eastern limits of the landslides are commonly defined by one or more landslide-related geomorphic features including prominent crown scarps, trenches (i.e. grabens), linear depressions and tension cracks. The pattern of failure normally starts with a well-developed headwall scarp near the crown of a major landslide block. The scarps commonly are more prominent and better developed along their northern extensions. Most can be traced to the south along somewhat discontinuous curvilinear paths, but the scarps frequently diminishes in height to the south and eventually are replaced by shallow linear depressions or a series of tension cracks. Consequently, it appears that most of the landslide headwall scarps propagate slowly to the south from their points of initiation, following a scissor-like pattern with greater surface displacements being concentrated along the northern extension of the headwall scarps.

Although the basal rupture surfaces for most of the landslides is not well defined, they appear to be controlled structurally by the orientation and the spacing of the bedrock fractures. The stratification of the bedrock is inclined into the seacliff. Such an orientation usually accounts for increased slope stability, but the highly fractured nature of the bedrock and the presence of a prominent set of west-dipping continuous fractures reduce the strength of the bedrock and controls the mode of failure.

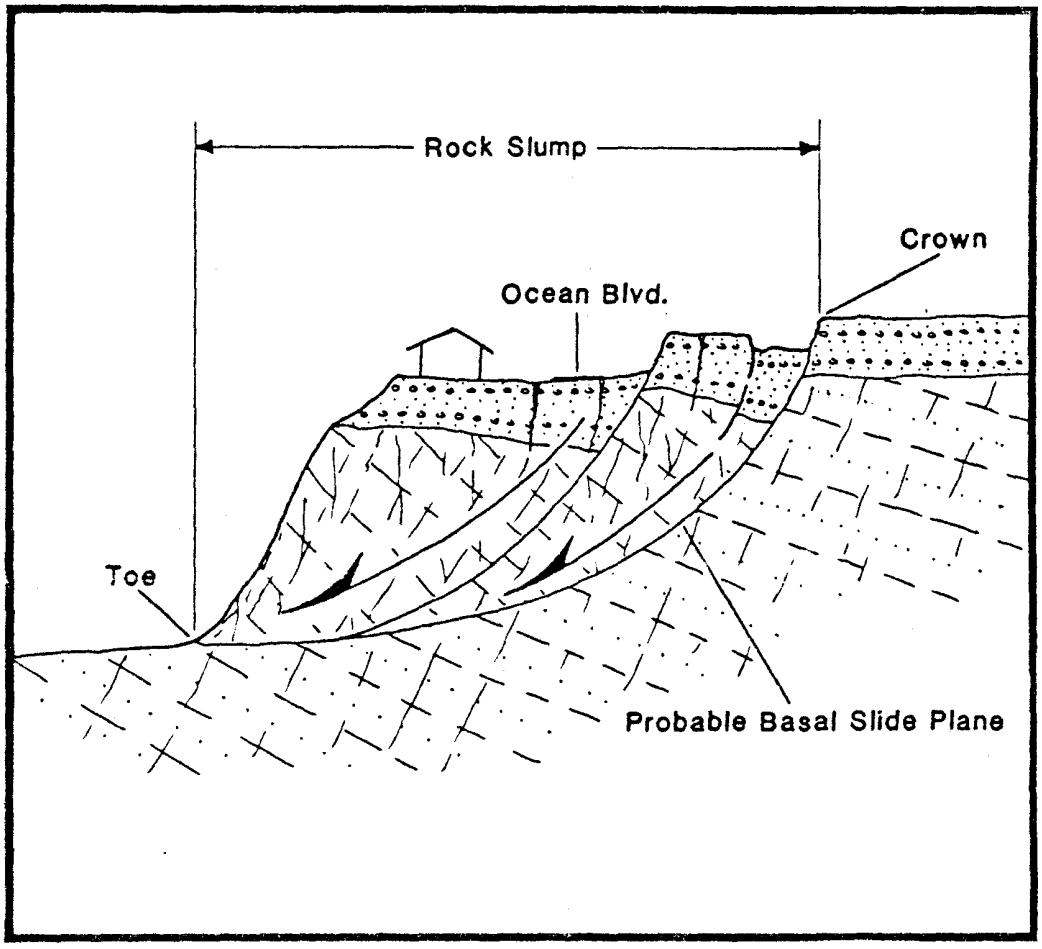


FIGURE 4 MODE OF ROCK SUMP FAILURE
SCHEMATIC CROSS SECTION

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

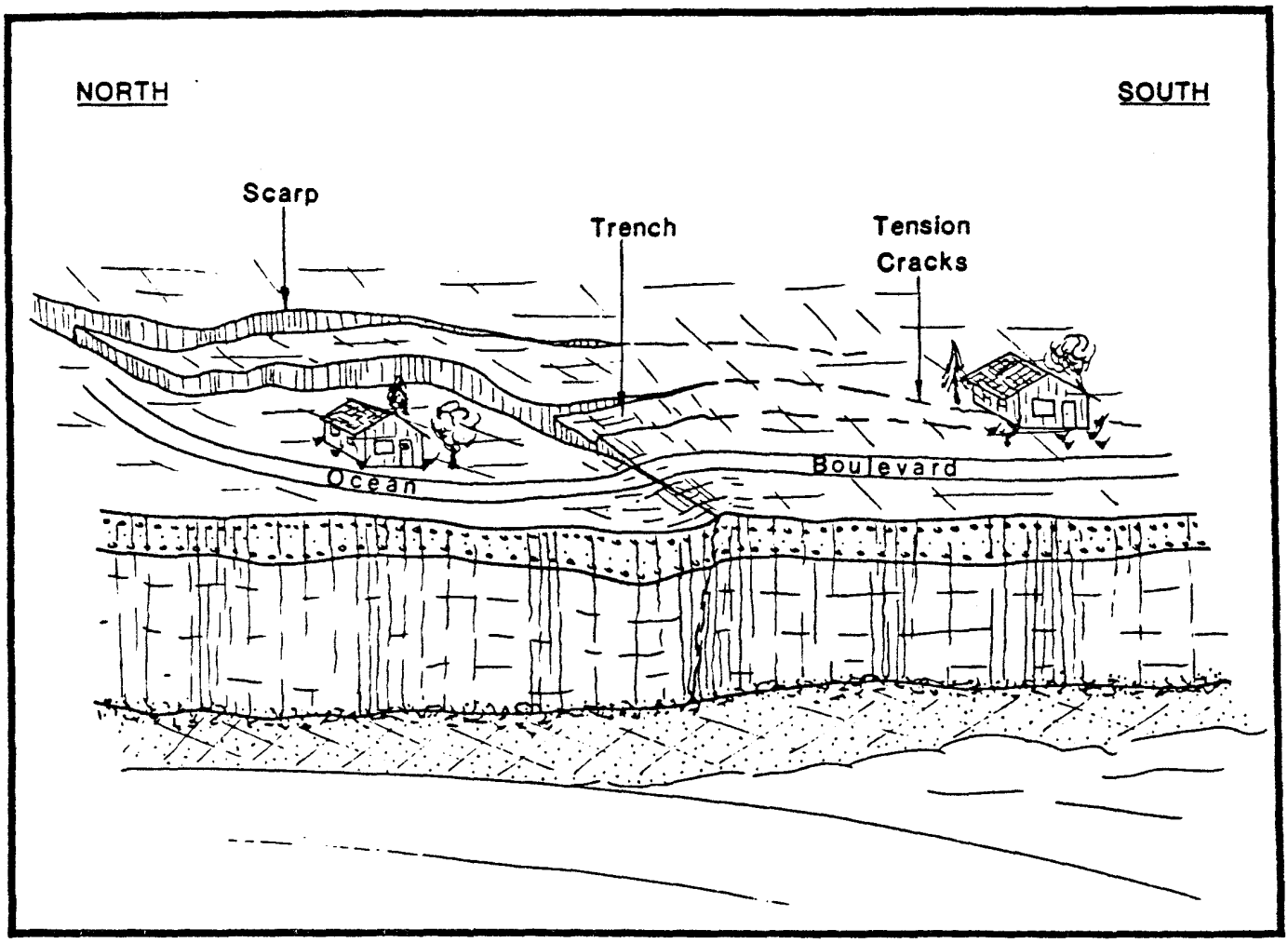


FIGURE 5 PROGRESSIVE NORTH TO SOUTH
FAILURE OF SEACLIFF REGION

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

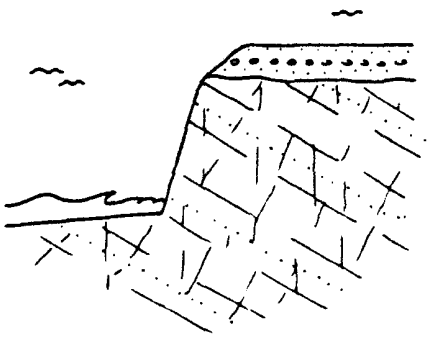
Thus when the relatively incompetent bedrock is exposed in a high, near-vertical seacliff that has been oversteepened by wave erosion, the rock becomes detached along the planar surfaces of the fractures. Consequently the seacliff fails in a type of landslide known as a rock slump (Varnes 1978) which normally involves bedrock materials that fail by rotation along a curved basal rupture surface.

The rate at which these large deep-seated landslide masses are failing can be estimated roughly by noting the increase in the scarp heights and in the length of extensions of the tension cracks since the completion of the original landslide mapping in 1971 (i.e. Leighton and Associates). Our measurements indicate that the rate of failure probably is approximately 1 to 3 inches per year; thus the rate of movement is regarded as very slow. However, the possibility of accelerated movements is considered high in many local areas within the presently failing landslide complex.

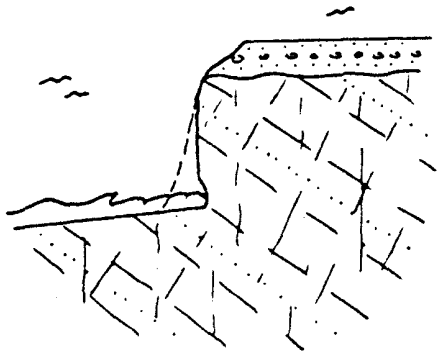
SLOUGHING - The most active form of slope failure along the seacliff is shallow, small-scale sloughing and ravelling of the face of the cliff. This process is initiated by wave erosion concentrated along the base of the seacliff (Figure 6). This erosional process causes the base of the seacliff to become undercut and locally unstable. The face of the seacliff responds to the oversteepened condition by localized piecemeal sloughing and ravelling. Most of the cliff retreat takes place during the winter season when storm waves vigorously erode and undercut the base of the seacliff. The weak, highly fractured siltstone and shale bedrock and the unconsolidated cover of marine terrace material are left in an oversteepened and unsupported condition, and consequently fail. The fallen debris temporarily protects the base of the cliff, but the waves eventually remove the debris and the oversteepening process starts anew.

An analysis of aerial and ground photographs taken over a period of fifty years, 1926 to 1976, and map extending back approximately 130 years reveals that the average rate of cliff retreat within the study area is now approximately 3 to 4 feet per year. However, this process is episodic and is controlled by a variety of local geologic conditions, thus the average rate cannot be projected into the future with any degree of certainty. For example, using this rate, it would be unreasonable to predict that the top of the seacliff will be located 30 to 40 feet east of its present location by 1990; there may be only 5 feet of cliff retreat in the next ten years, but 55 feet of retreat may occur the subsequent decade. Thus the average rate over a 20 year period would approximate 3 feet per year.

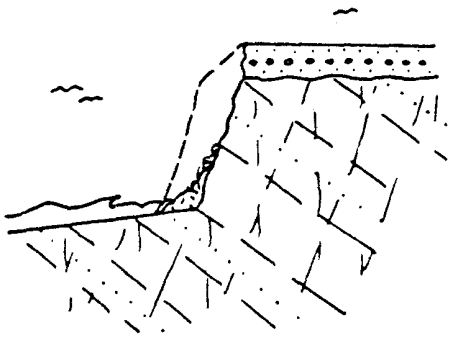
In conclusion, the seacliff portion of the Seal Cove area presently is failing by large deep-seated landsliding and small scale localized sloughing. Although both of these types of failures are partially induced by the oversteepening process



Stage 1 - Relatively Stable Seacliff



Stage 2 - Local instability due to undercutting of base of seacliff



Stage 3 - Relative stability attained by piecemeal sloughing and ravelling

FIGURE 6 PROGRESSIVE SEACLIFF EROSION
SCHEMATIC DRAWINGS

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

of wave erosion, they are dramatically different in scale and mode of failure. Likewise each presents a very different level of risk to future development.

In our judgment, attempts to control or reduce these hazards by engineering design would not be feasible. The scale of the large active landslides make any stabilization scheme essentially uneconomical, likewise an engineering solution needed to stop the erosional activity at the base of the seacliff would severely impact the James V. Fitzgerald Marine Reserve which includes the Seal Cove surface zone. Consequently it appears the most prudent way to reduce the risk is to avoid the areas that are vulnerable to these slope failure hazards.

SEISMIC SETTING - The principal structural feature within the study area is the Seal Cove fault zone and a number of subsidiary branch faults (Figure 7). The master trace of the fault appears to lie near the base of the east-facing slope which forms the eastern boundary of the study area. Here the master trace is considered to be within a zone of pulverized rock that is approximately 100 feet wide. West of this main zone, the location and character of faulting are less well understood. In this region at least three branch faults extend to the southeast from the main Seal Cove fault zone and pass through the study area (Leighton 1971). Subsequent site-specific geologic studies have confirmed with slight modifications the location of some of these branch fault traces. In addition, the analysis of aerial photographs conducted for this study and by A. C. Neufeld, San Mateo County Geologist, strongly indicate that several additional fault-related lineations cross the relatively undeveloped area located south of San Lucas Avenue.

These branch faults, like those in the main fault zone are considered to be normal faults characterized primarily by vertical displacements. The main fault trace is identified as the zone of greatest concentration of displacement. Indeed the east-facing slope that forms the eastern boundary of the study area is considered to be a fault scarp produced by displacement along the main trace of the Seal Cove fault. Although the branch faults also are considered to be active traces, both the surface expressions of these faults and the subsurface data presented by the Leighton report indicate that the amount of displacement and the state of activity along these faults probably is much less than the master trace.

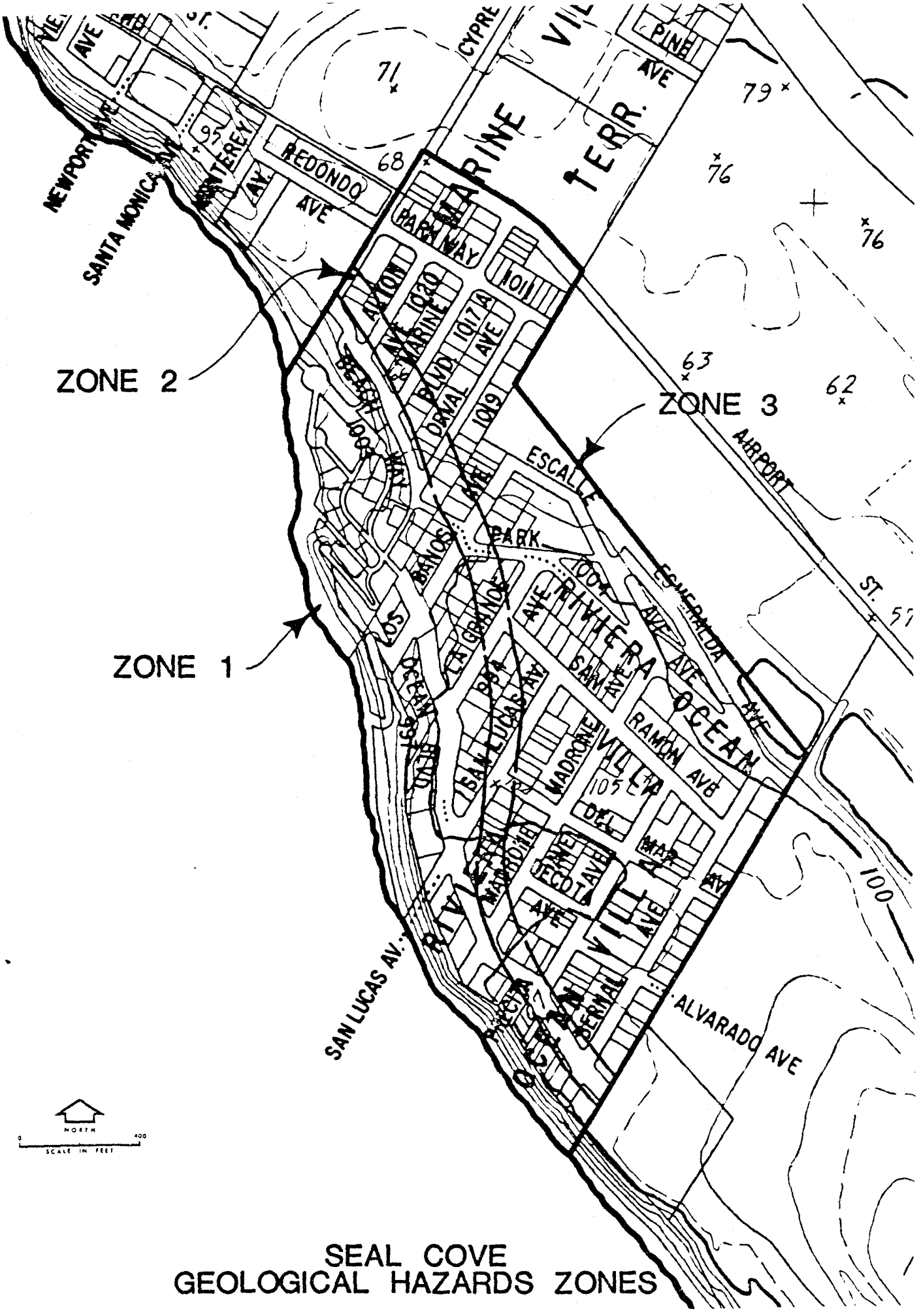
Recent fault studies suggest that the Seal Cove fault zone is a segment of a major coastal boundary fault zone that merges with the San Andreas fault north of San Francisco (Greene and others, 1973; Weber and Cotton, 1980). This fault zone includes the Seal Cove, San Gregorio, Sur, San Simeon and Hosgri faults and extends to the south for more than 260 miles to the vicinity of Point Arguello. The largest historic seismic event recorded along the San Gregorio fault system

FIGURE 7 SEAL COVE FAULT SYSTEM

SEAL COVE STUDY AREA
COUNTY OF SAN MATEO, CALIFORNIA

were two Richter magnitude 6.1 earthquakes which occurred within one hour of each other near the center of Monterey Bay in 1926. Studies of historic seismicity along the San Gregorio fault zone in the vicinity of Monterey Bay indicate that the fault zone probably is capable of producing an earthquake of Richter magnitude 7.2 - 7.9. Paleoseismologic research on the San Gregorio fault zone near Point Ano Nuevo, in San Mateo County, suggests that (1) earthquakes of Richter magnitude 7.6 - 7.7, and possibly greater than Richter magnitude 8.0, have occurred along the San Gregorio fault zone in the past and are anticipated to occur in the future, and (2) a reasonable estimate of the recurrence interval for major earthquakes (M 7.5) along the San Gregorio fault system is 225-400 years and probably is about 300-325 years (Weber and Cotton, 1980). Since the Seal Cove fault is considered to be an extension of the San Gregorio fault system, it is reasonable to attribute a similar level of seismic activity to the Seal Cove area.

In conclusion, the main trace and the branching traces of the Seal Cove fault are considered to be active. The branching faults located in the relatively undeveloped area south of San Lucas Avenue are only approximately located. Indeed, there may be additional fault strands that are as yet unrecognized in this region. Should a major earthquake take place along the Seal Cove fault the anticipated seismic hazards would be severe ground shaking, surface faulting along the master trace and branching fault traces and ground failure (landsliding, sloughing, settlement, etc.). The risk associated with these hazards can be dramatically reduced by carefully siting homes away from active fault traces or potential zones of ground failure and by careful structural and foundation design.



SEAL COVE
GEOLOGICAL HAZARDS ZONES

MONTARA WATER AND SANITARY DISTRICT AGENDA

Prepared for the Meeting Of: May 15, 2025

TO: BOARD OF DIRECTORS

FROM: Clemens H. Heldmaier, General Manager

SUBJECT: Receive San Mateo Resources Control District First Flush Report

First Flush is an annual community science program that monitors pollutants entering the Monterey Bay National Marine Sanctuary established and implemented by the San Mateo Resources Control District. It serves to engage and educate the public about water quality within our community, while simultaneously creating a long - term dataset that can inform conservation actions. The First Rain (First Flush) provides a snapshot of a once-a-year worst-case scenario for water quality when, after months of dry weather, contaminants that have built up on roads and parking lots and fields, are washed away by the first big rain of the year.

On November 11, 2024, 7 volunteers sampled creeks and stormwater outfalls at 16 sites between Pacifica and Half Moon Bay after 0.22 inches of rainfall. Samples were analyzed for Fecal Indicator Bacteria, Nutrients, Metals, and Total Suspended Solids. Data for each contaminant was compared to water quality objectives, designed to protect human and ecological health. A representative from San Mateo Resource Conservation District will present the report and be available for any questions/ clarifications during the meeting.

RECOMMENDATION:

This is for Board information only

2024 First Flush Water Quality Results

Prepared by San Mateo Resource Conservation District
March 2025

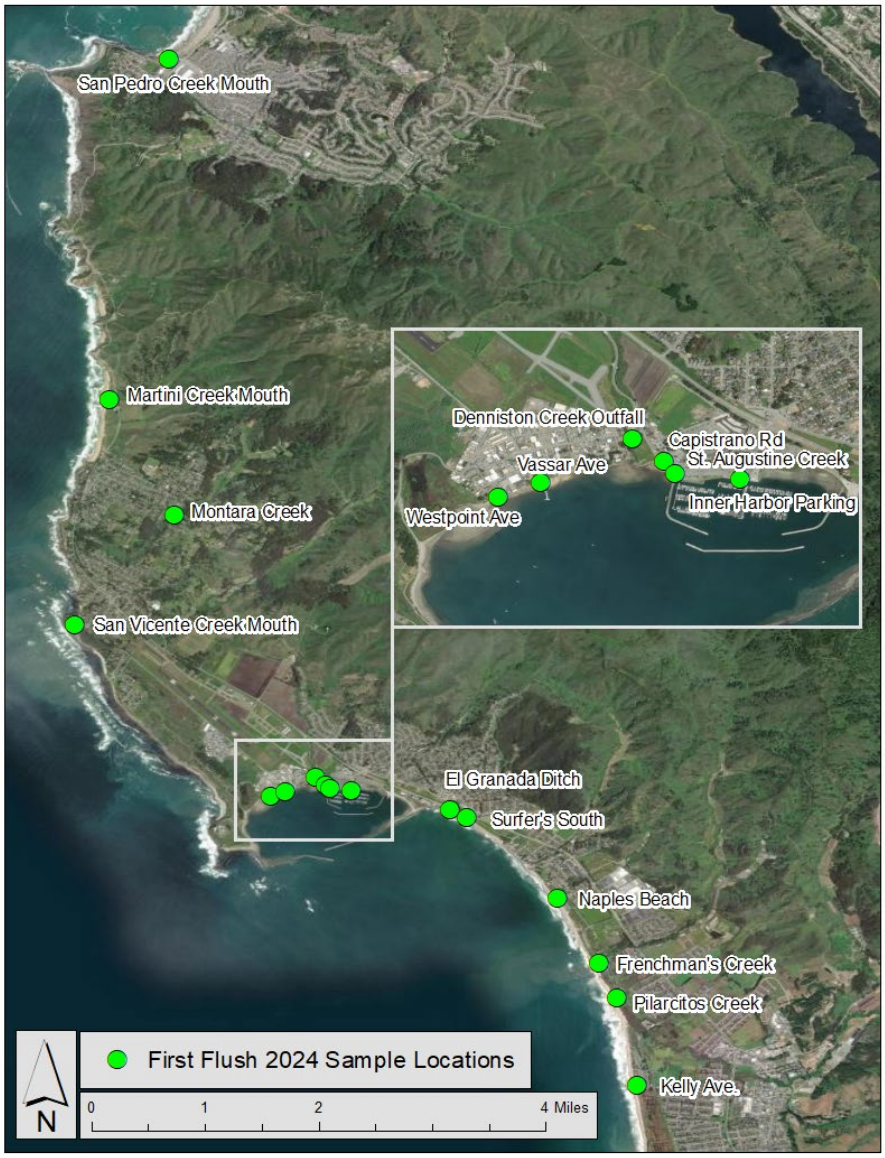


Figure 1. Map of First Flush 2024 Sample Sites in San Mateo County

Executive Summary

First Flush is an annual community science program that monitors pollutants entering the Monterey Bay National Marine Sanctuary (MBNMS). It serves to engage and educate the public about water quality within our community, while simultaneously creating a long-term dataset that can inform conservation actions. Volunteers collect water samples from stormwater outfalls, creeks and creek mouths during the first big rain of the year[1]. First Flush provides a valuable snapshot of a likely worst-case scenario for water quality when contaminants that have built up on land during the dry season are washed into waterways. This information can then be used to identify remediation opportunities or areas for further investigation. The program is run in San Mateo and Monterey counties. The San Mateo Resource Conservation District (RCD) coordinates efforts in San Mateo County as part of the of the overall multi-county program managed by MBNMS.

This report presents and summarizes the results of sampling that occurred in San Mateo County during the first big rain after the 2024 dry season, with discussion of notable observations. Some highlights and key observations from First Flush 2024 include:

1. Nearly all sites showed elevated levels of Fecal Indicator Bacteria (*E. coli, Enterococcus*), except for Martini Creek Mouth and Inner Harbor Parking Outfall which were within recommended levels for *E. coli*.
2. West Point Ditch showed elevated levels of nearly all contaminants.
3. Montara Creek stood out in 2023 as having elevated contaminant levels in multiple categories. This site exhibited notable improvements in 2024, showing the lowest concentrations of several categories compared to other sites.
4. All 16 sites were within recommended levels for both total suspended solids and lead.

[1] Defined as the first post-summer storm event that meets mobilization criteria (a minimum of 0.1 inches of rain, and sheeting water on roadways). This event often occurs in November.

First Flush 2023 Methods

On November 11, 2024, seven volunteers[2] sampled creeks and stormwater outfalls at 16 sites (Table 1) between Pacifica and Half Moon Bay after 0.22 inches of rainfall.

Table 1. Detailed site information for First Flush 2024 sampling. Sites listed from north to south.

Site Name	Site Code	Latitude	Longitude
San Pedro Creek Mouth	202-SPCM-01	37.59620	-122.50561
Martini Creek Mouth	202-MOSD-04	37.55278	-122.51325
Montara Creek	202-MOSD-03	37.53812	-122.50496
San Vicente Creek Mouth	202-MBSD-05	37.52412	-122.51760
West Point Ditch	202-MBSD-04	37.50217	-122.49265
Vassar Outfall	202-EGSD-04	37.50278	-122.49083
Denniston Creek Outfall	202-PPSD-03	37.50465	-122.48693
Capistrano Outfall	202-EGSD-03	37.50371	-122.48560
St. Augustine Outfall	202-PPSD-04	37.50317	-122.48511
Inner Harbor Parking Outfall	202-PPSD-05	37.50293	-122.48234
El Granada Outfall	202-EGSD-01	37.50046	-122.46982
Surfer's South Outfall	202- EGSD-02	37.49959	-122.46769
Naples Beach Creek Mouth[3]	202-NBDO-22	37.48923	-122.45610
Frenchmans Creek Mouth	202-FRENC-11	37.48091	-122.45077
Pilarcitos Creek Mouth	202-PILAR-12	37.47656	-122.44857
Kelly Outfall	202-HMB-05	37.46531	-122.44591

Samples were analyzed for fecal indicator bacteria (FIB), heavy metals (copper, lead, zinc), nutrients (nitrate and orthophosphate), and total suspended solids (TSS) (Table 2). These testing categories will be referred to as "analytes." Results are compared to established standards, and the term Water Quality Objective (WQO) refers to the threshold set in these standards. A WQO exceedance means that a given analyte is greater than its corresponding WQO, indicating that water quality is impaired. A more detailed description and list of all WQOs by analyte and source is provided in Appendix A.

[2] Volunteer turnout varies, sometimes including 20 or more participants.
[3] This site has historically been named "Naples Beach" in the First Flush program. Location sampled is the mouth of what may be more commonly known as Roosevelt Creek.

Table 2. Analytes tested in 2023.

Analyte	Potential Sources	Effects
Fecal Indicator Bacteria (FIB) (*E. coli*, *Enterococcus*)	Feces of warm-blooded animals (humans, dogs, horses, wildlife, etc.)	Pathogens that can harm human health could be present alongside the bacteria (the bacteria themselves are not harmful).
Nutrients (nitrates and orthophosphates)	Fertilizers, pesticides, detergents	Ecosystem and recreation impacts. Excess nutrients can cause Harmful Algal Blooms (HABs) and/or oxygen depletion in waters.
Metals (copper, lead, zinc)	Gutters/roofs, brake pads, tires, industrial waste, treated lumber, paint, fires	Human health and environmental impacts from heavy metal toxicity (concentration-dependent), including reproductive effects and/or mortality of aquatic organisms.
Total Suspended Solids (TSS)	Construction, erosion, agricultural runoff, fires	Mobilization of contaminants, and aquatic organism impacts such as habitat sedimentation and respiratory inhibition.

Key Findings

Results Summary

A general overview is provided here. Detailed analysis of results is provided in the following sections. Raw data for all sites is provided in Appendix B.

- Fecal Indicator Bacteria:
  - *E. coli* concentrations exceeded WQOs at 13 of 16 sites.
  - *Enterococcus* concentrations exceeded WQOs at all 16 sites.
- Nutrients:
  - Nitrate concentrations exceeded WQOs at one of 16 sites.
  - Orthophosphate was detected at five sites, and concentrations exceeded WQOs at all sites where it was detected.
- Heavy Metals:
  - Copper concentrations exceeded WQOs at four of 16 sites.
  - Lead concentrations were within recommended levels at all 16 sites.
  - Zinc concentrations exceeded WQOs at one of 16 sites.
- Total Suspended Solids (TSS) were within recommended levels at all 16 sites

- Site-specific observations:
    - Martini Creek Mouth and Inner Harbor Parking Outfall were within recommended levels for *E. coli* but still exceeded the WQO for *Enterococcus*.
    - Sites that drain to the Pillar Point Outer Harbor showed high levels of various metals and nutrients.
        - West Point Ditch exceeded WQOs for *E. coli, Enterococcus,* copper, zinc, nitrate, and orthophosphate, and exhibited the highest concentration in nearly all analytes except for orthophosphate and *E. coli* compared to other sites.
        - Vassar Outfall exceeded WQOs for copper and orthophosphate.
        - Capistrano Outfall exceeded the WQO for copper.
    - Montara Creek exhibited high concentrations for several analytes in 2023, but in 2024 had the lowest concentration of copper and lead when compared to other sites, and nitrate and orthophosphate were not detected. TSS at this site was the highest ever observed in this program in 2023 but fell to the median concentration in 2024 compared to other sites.
    - Kelly Outfall exhibited high concentrations of copper and orthophosphate.
    - Naples Beach Creek Mouth exhibited some of the lowest concentrations of metals, but the highest concentration of orthophosphate compared to other sites.

Fecal Indicator Bacteria

Fecal indicator bacteria (FIB) serve as an indicator for the presence of the feces of warm-blooded animals, which indirectly indicates the potential presence of pathogens (e.g., viruses and bacteria) that can impact human health. Primary sources of FIB include humans, domesticated pets, and wildlife. Secondary sources include areas where bacteria may fester and proliferate outside of the gut biome of warm-blooded animals such as in sands, sediments, and biofilms. *E. coli* and *Enterococcus* are the two types of FIB that we test for in the First Flush program. Scientific guidelines recommend measuring *E. coli* in freshwater and *Enterococcus* in saltwater. This is because *Enterococci* can survive in saltwater whereas *E. coli* dies more quickly once they reach the ocean. Since the First Flush program is evaluating the nexus of these two systems, it is useful to test for the presence of both. Importantly, however, *E. coli* and *Enterococcus* results are not “apples to apples” and should not be directly compared to one another. This is exemplified by the differing WQOs between these two analytes. The WQOs for *E. coli* and *Enterococcus* are 320 MPN/100mL and 110 MPN/100mL, respectively.

E.coli was above recommended levels at 14 sites, and *Enterococcus* was above recommended levels at all 16 sites in 2024 (Figure 2, Figure 3). Since First Flush is designed to capture data on what is likely the worst day of the year for water quality, high bacterial concentrations are expected. This held true in 2024, except that *E.coli* at Martini Creek Mouth and Inner Harbor Parking were within recommended levels. Additionally, two-thirds of all *E. coli* and *Enterococcus* samples (21 out of 32) were below the upper limit of detection - the maximum concentration quantifiable using our lab methods. This is noteworthy because samples reported at the upper limit likely exceed that concentration. For comparison, in 2023, fewer than half of the samples (13 out of 30) were below this upper limit.

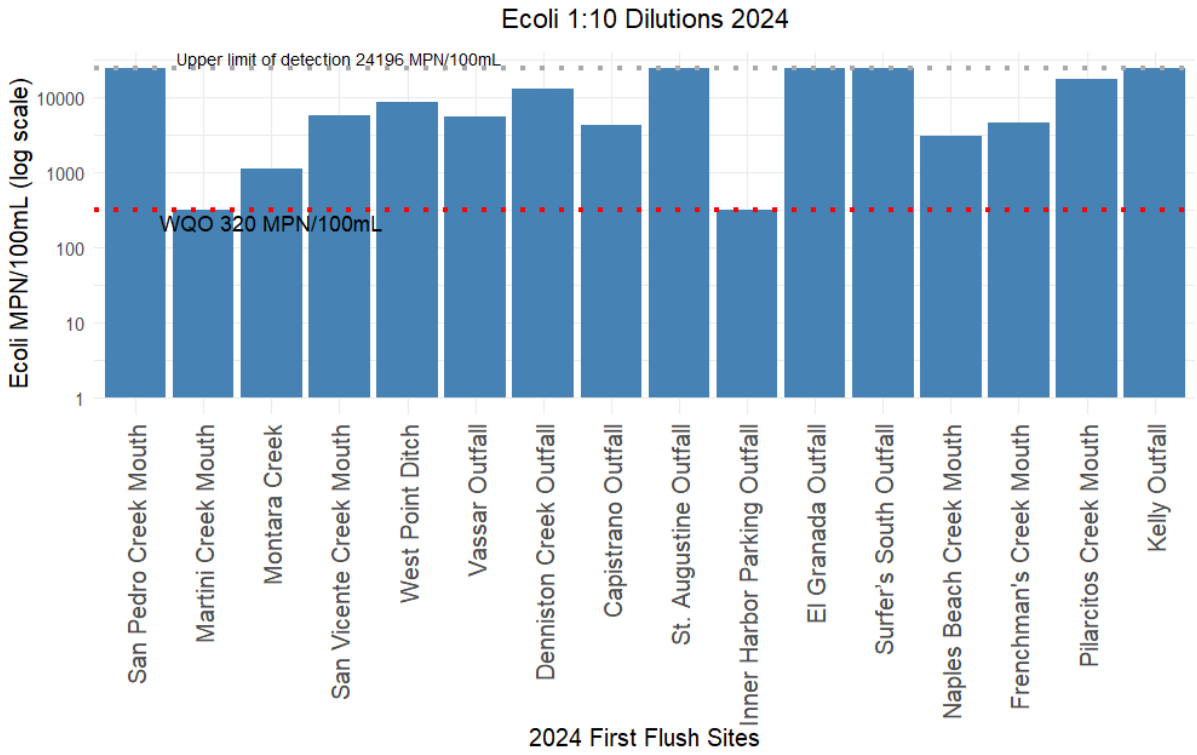


Figure 2. *E. coli* concentrations at a 1:10 dilution for First Flush 2024. Note the y-axis is on a logarithmic scale. Sites are arranged from north (left) to south (right).

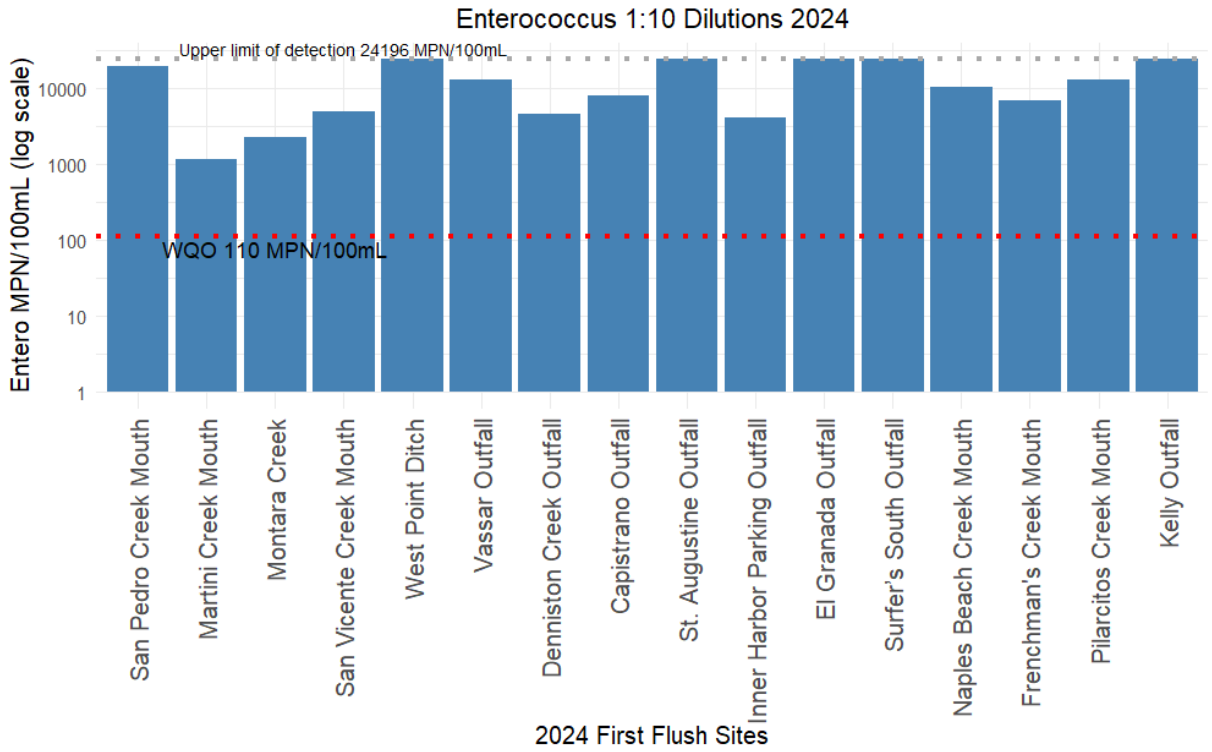


Figure 3. *Enterococcus* concentrations at a 1:10 dilution for First Flush 2024. Note the y-axis is on a logarithmic scale. Sites are arranged from north (left) to south (right).

Examining long-term trends, we see that all sites frequently exceed WQOs for FIB during First Flush. Prior to 2024, only three *E. coli* samples had fallen below the WQO since 2015 – at San Vicente Creek Mouth and Montara Creek – making it especially significant that two sites met recommended levels this year (Figure 4). *Enterococcus* levels have been more persistently high, with only one sample below the WQO since 2015. All sites showed a noticeable decrease in *Enterococcus* concentrations between 2023 and 2024, except for Pilarcitos Creek Mouth which showed an increase (Figure 5).

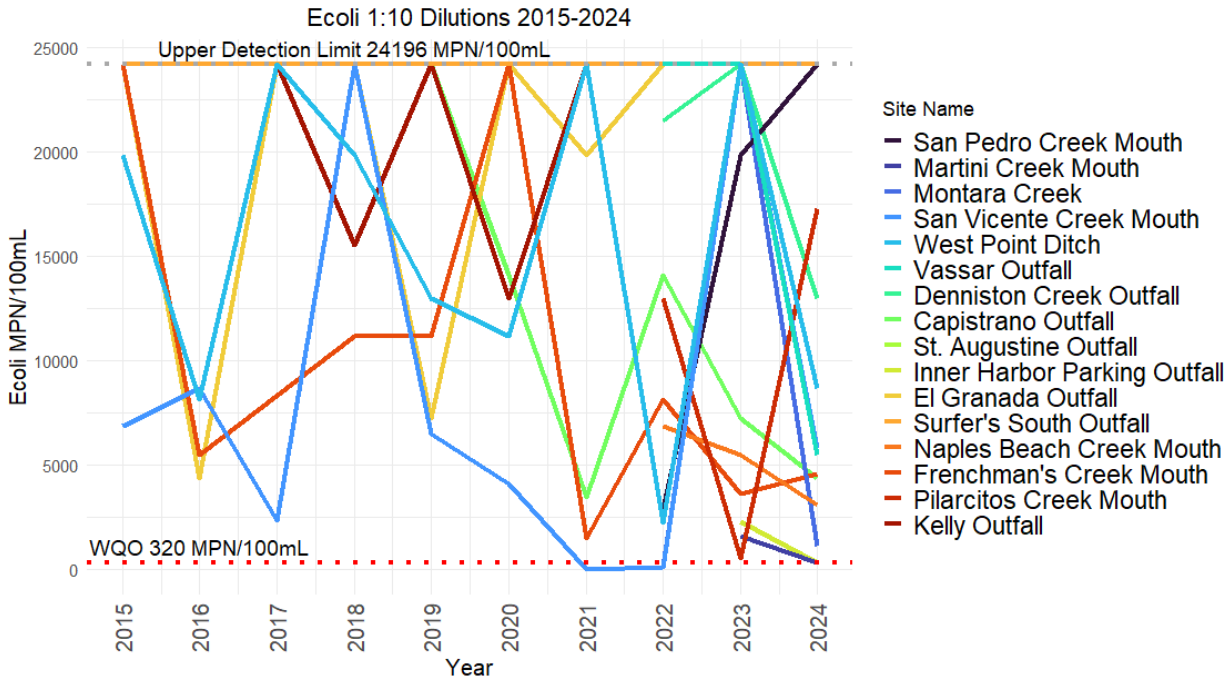


Figure 4. Historical *E. coli* First Flush concentrations at a 1:10 Dilution (2015-2024).

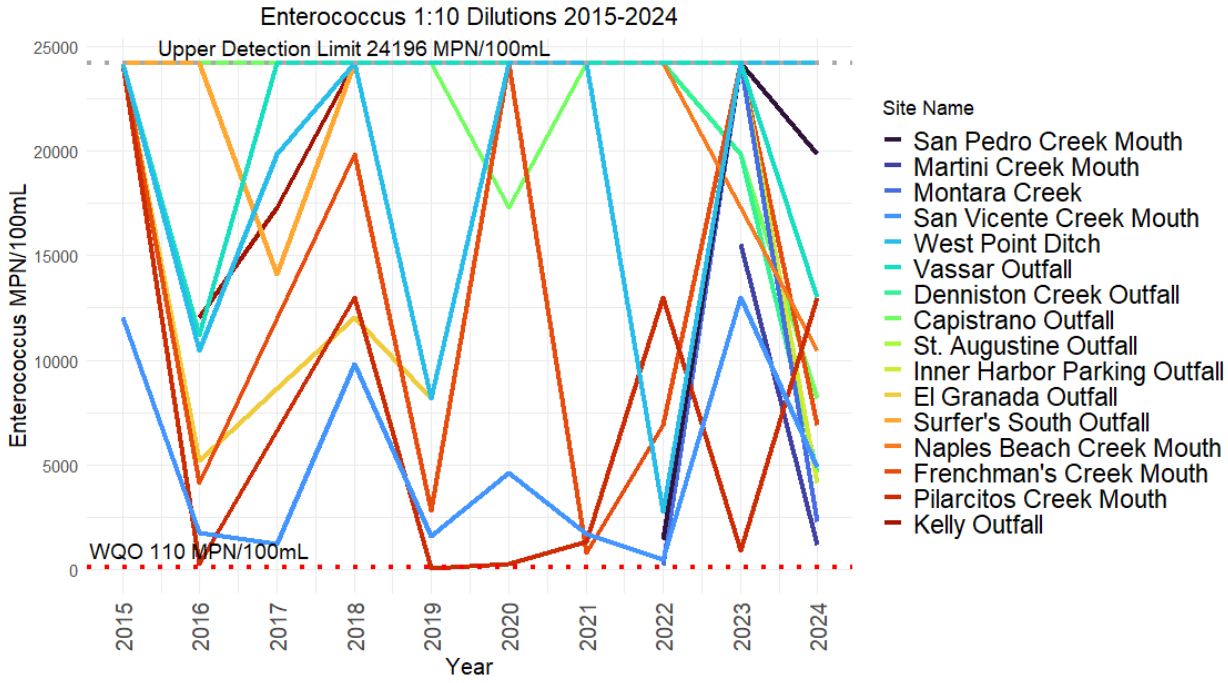


Figure 5. Historical *Enterococcus* First Flush concentrations at a 1:10 Dilution (2015-2024).

Heavy Metals: Copper, Lead, and Zinc

Heavy metals can enter waterways from fires, gutters/roofs, brake pads, tires, industrial waste, treated lumber, paint, and other natural and anthropogenic sources. Heavy metals, which can be essential micronutrients[4] at appropriate doses, can also be linked to various human and ecological health impacts when present at high concentrations. The three heavy metals tested in the First Flush program are copper, lead, and zinc.

Copper

The WQO of 30 ug/L for copper represents the maximum concentration recommended for protection of aquatic life habitats [5]. Copper occurs in the environment due to both natural and human processes. It is an essential micronutrient at low concentrations but toxic to aquatic organisms at high concentrations. Copper can enter waterways when natural deposits are subject to weathering and erosion, or as a result of human activities. Copper is frequently used in siding and roofing materials, boat paint, lumber treatments, water pipes, and manufacturing processes due to its resistance to corrosion and fouling. It can enter waterways as these materials slowly degrade, or though other pathways such as industrial discharge or during activities such as sanding paint.

Copper was detected at all 16 sites and concentrations were above recommended levels at four sites in 2024 (Figure 6). West Point Ditch, Vassar Outfall, and Capistrano Outfall are all located in Princeton-by-the-Sea and drain a mix of industrial, residential, and agricultural stormwater into the Pillar Point Outer Harbor. Kelly Outfall is located within Half Moon Bay State Park and drains primarily residential stormwater onto the beach. The highest concentration was observed at West Point Ditch (59 ug/L) and the lowest concentration was observed at Montara Creek and Martini Creek Mouth (2 ug/L).

[4] Micronutrient: a chemical element or substance required in trace amounts for the normal growth and development of living organisms.
[5] Water Quality Control Plan for the Central Coast Basin (pg. 38)

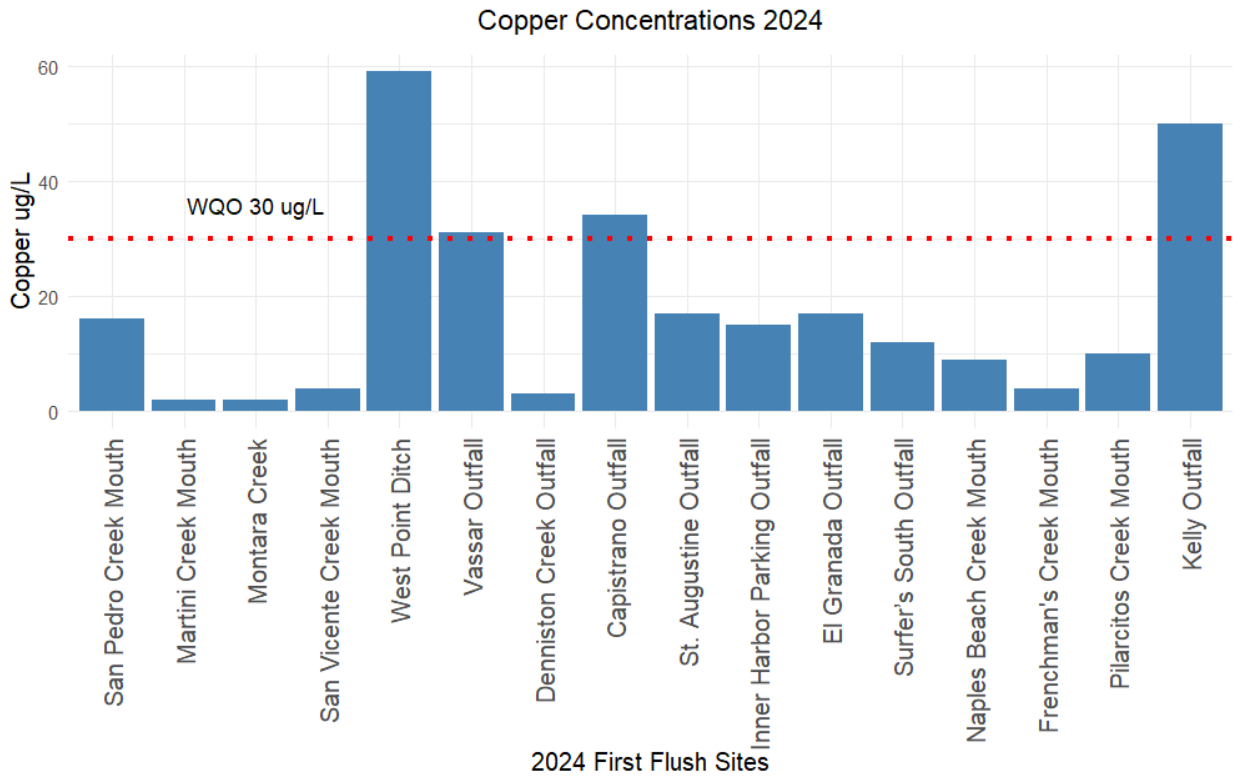


Figure 6. Copper concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

Examining long-term trends, three sites appear to exceed the WQO for copper with some regularity: West Point Ditch, Vassar Outfall, and Capistrano Outfall (Figure 7). Based on these results, further evaluation may help identify and remediate potential sources of copper entering the ocean. There visually appears to be an overall decreasing trend at Capistrano Outfall since 2015. Kelly Outfall has only been sampled for three years but also stands out as consistently exceeding recommended levels. Montara Creek exhibited the highest concentration of copper in 2023, and the lowest concentration of copper in 2024. This may be a singular spike as observed at San Vicente Creek Mouth in 2021.

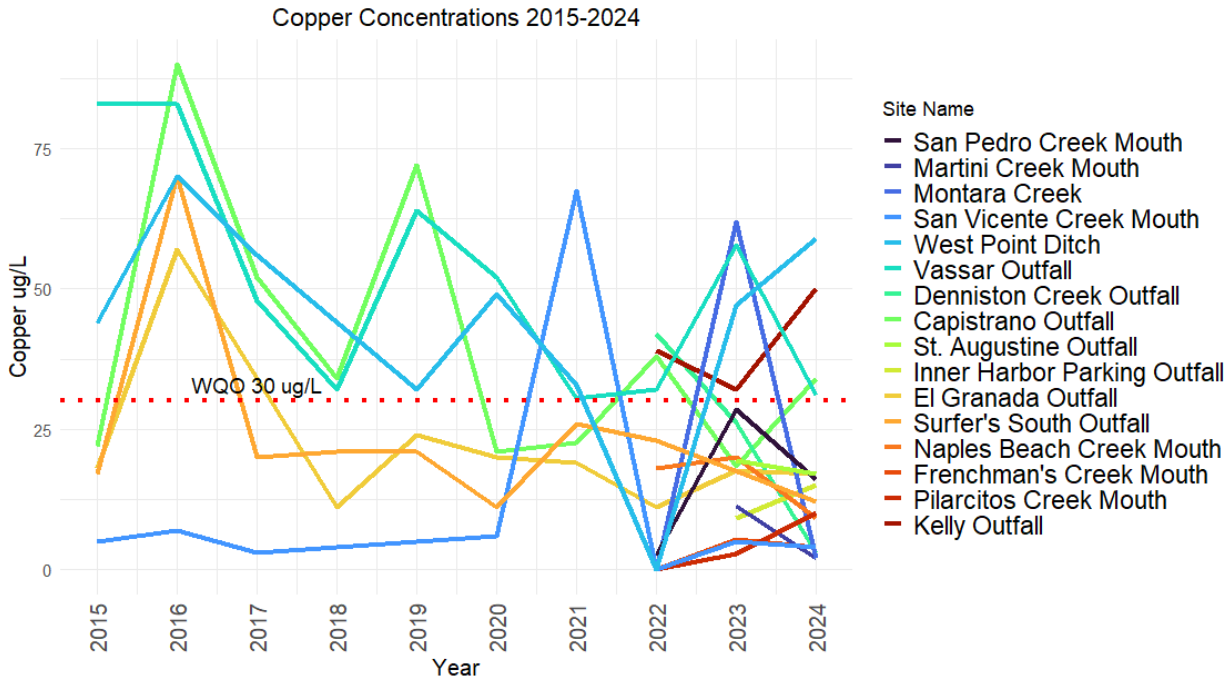


Figure 7. Historical copper First Flush concentrations (2015-2024).

Lead

The WQO of 30 ug/L for lead represents the maximum concentration recommended for protection of aquatic life habitats[6]. Lead exposure can affect multiple body systems of humans and animals and is particularly harmful to young children. The occurrence of lead at elevated levels in streams and waterways is often the result of human activities. Lead persists in the environment from legacy uses such as fuel additives, ammunition, household paint, pipes, and fixtures, or as a byproduct of smelting or other industrial activities. While many of these legacy uses have been discontinued or are now more strictly regulated, lead is still commonly used in marine applications such as hull paint and ballast, and other industrial processes due to its density and resistance to fouling. Lead poisoning remains a significant issue, and the US EPA provides guidance on minimizing exposure in and around the household[7].

Lead was detected at all 16 sites, but concentrations were within recommended levels at all sites in 2024 (Figure 8). The highest concentration was observed at West Point Ditch (23.4 ug/L) and the lowest concentration was observed at Montara Creek, Naples Beach Creek Mouth, and Frenchmans Creek Mouth (0.6 ug/L).

[6] Water Quality Control Plan for the Central Coast Basin (pg. 38)
[7] https://www.epa.gov/lead/learn-about-lead#found

Examining long-term trends, WQO exceedances for lead have been relatively uncommon (Figure 9). However, three notable exceedances occurred in 2023 at Montara Creek, West Point Ditch, and Vassar Outfall. Montara Creek showed a sharp spike that year, possibly linked to high TSS levels, but lead concentrations returned to near-zero in 2024. In contrast, West Point Ditch and Vassar Outfall have shown an increasingly consistent presence of lead since 2018, though levels in 2024 remained within recommended limits. Further evaluation during the dry season may help identify potential sources of lead in this area.

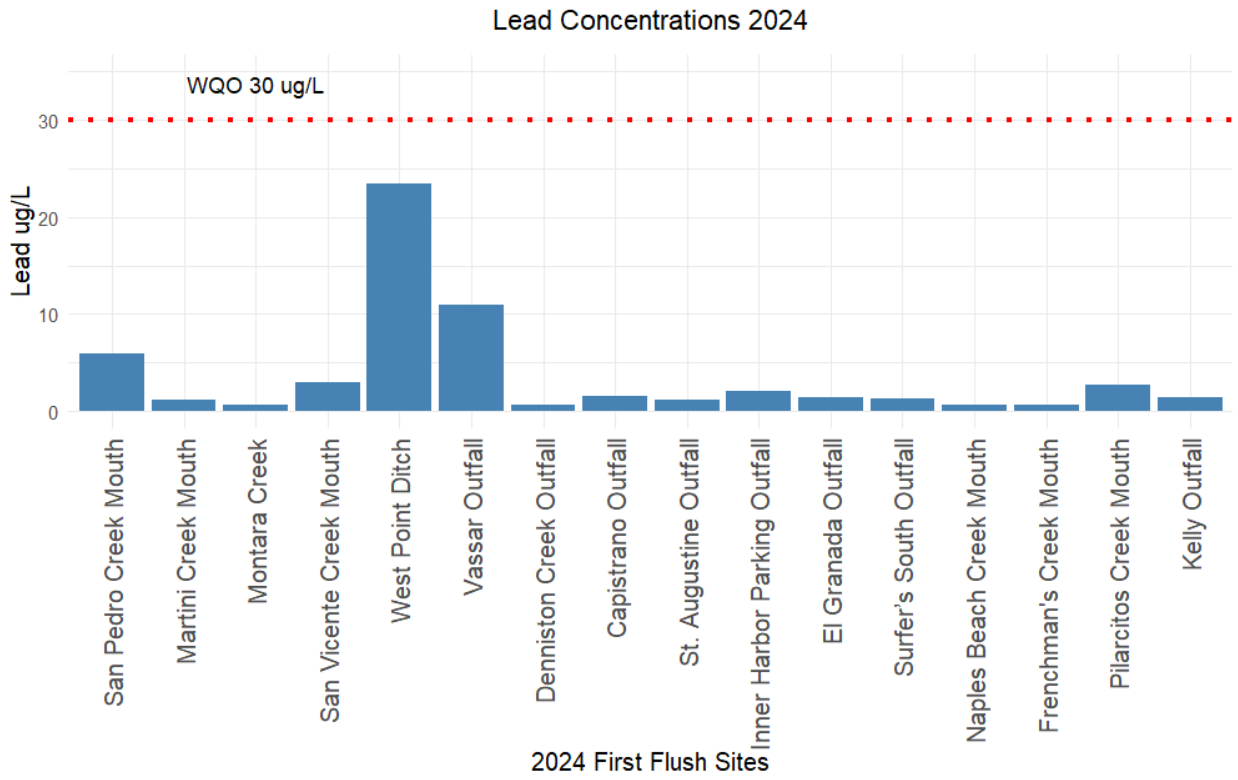


Figure 8. Lead concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

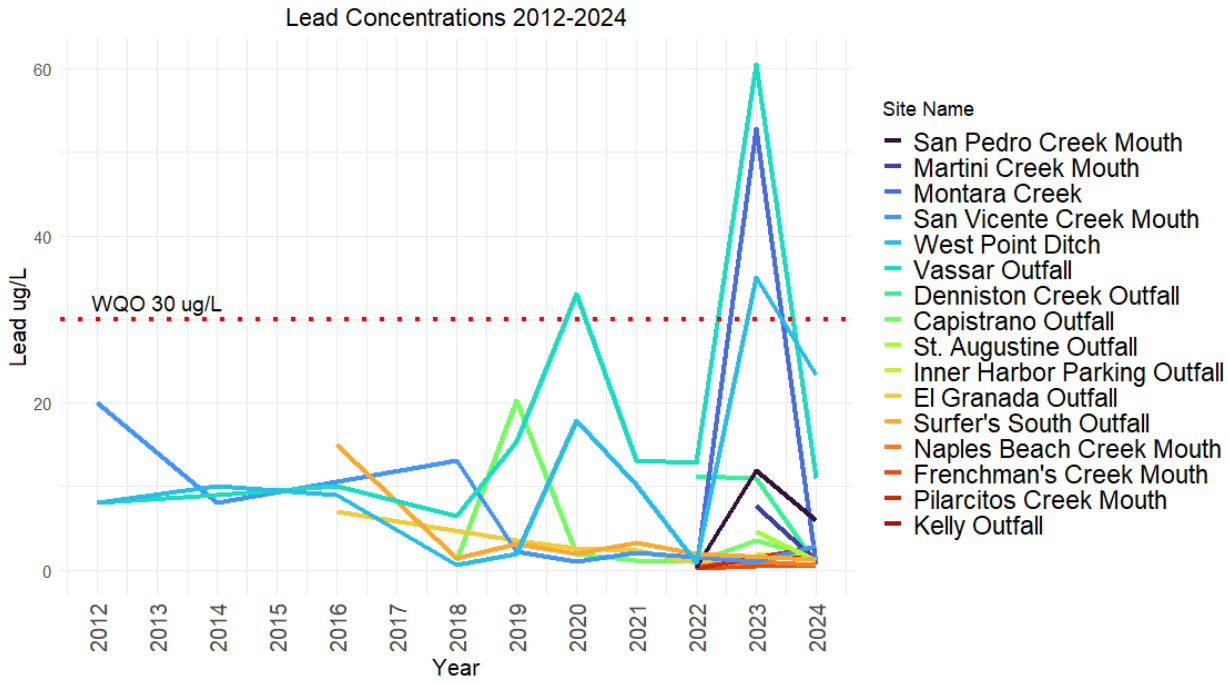


Figure 9. Historical lead First Flush concentrations (2012-2024).

Zinc

The WQO of 200 ug/L for zinc represents the maximum concentration recommended for protection of aquatic life habitats [8]. Zinc occurs naturally in soils, air, water, and can be found in all foods. It is also an essential micronutrient commonly found in nutritional supplements but can cause health effects for people and animals at high concentrations. Zinc can enter waterways when natural deposits are subject to weathering and erosion, or as a result of human activities such as mining or other industrial processes. Zinc is used in the production of many goods, including galvanized metals, dry cell batteries, paints and ceramics, rubber, treated lumber, fabric dyes, and many household goods such as sun blocks, deodorants, diaper rash ointments, athlete's foot treatments, and antidandruff shampoos[9].

Zinc was detected at all 16 sites and concentrations were above recommended levels at one site in 2024 (Figure 10). The highest concentration was observed at West Point Ditch (256 ug/L) and the lowest concentration was observed at Frenchmans Creek Mouth (14 ug/L). West Point Ditch is located in Princeton-by-the-Sea and drains a mix of industrial, residential, and agricultural stormwater into the Pillar Point Outer

[8] Water Quality Control Plan for the Central Coast Basin (pg. 38)
[9] US Dept. of Health and Human Services: Toxicological profile for Zinc

Harbor. Frenchmans Creek Mouth is located Half Moon Bay and drains primarily agricultural and residential stormwater onto Half Moon Bay State Beach.

Examining long-term trends, zinc concentrations are generally low but appeared to spike across several sites in 2016, 2019, and 2023 (Figure 11). In 2023, Montara Creek exhibited the highest concentration of zinc ever observed in this program, but returned to low levels in 2024. This significant spike may or may not be related to a high TSS event that occurred at this site in 2023. Vassar Outfall showed a similar trend where it exceeded the WQO in 2023 and returned to low levels in 2024. West Point Ditch, however, exceeded the WQO in both 2023 and 2024. Further evaluation during the dry season may help identify potential sources of zinc in this area.

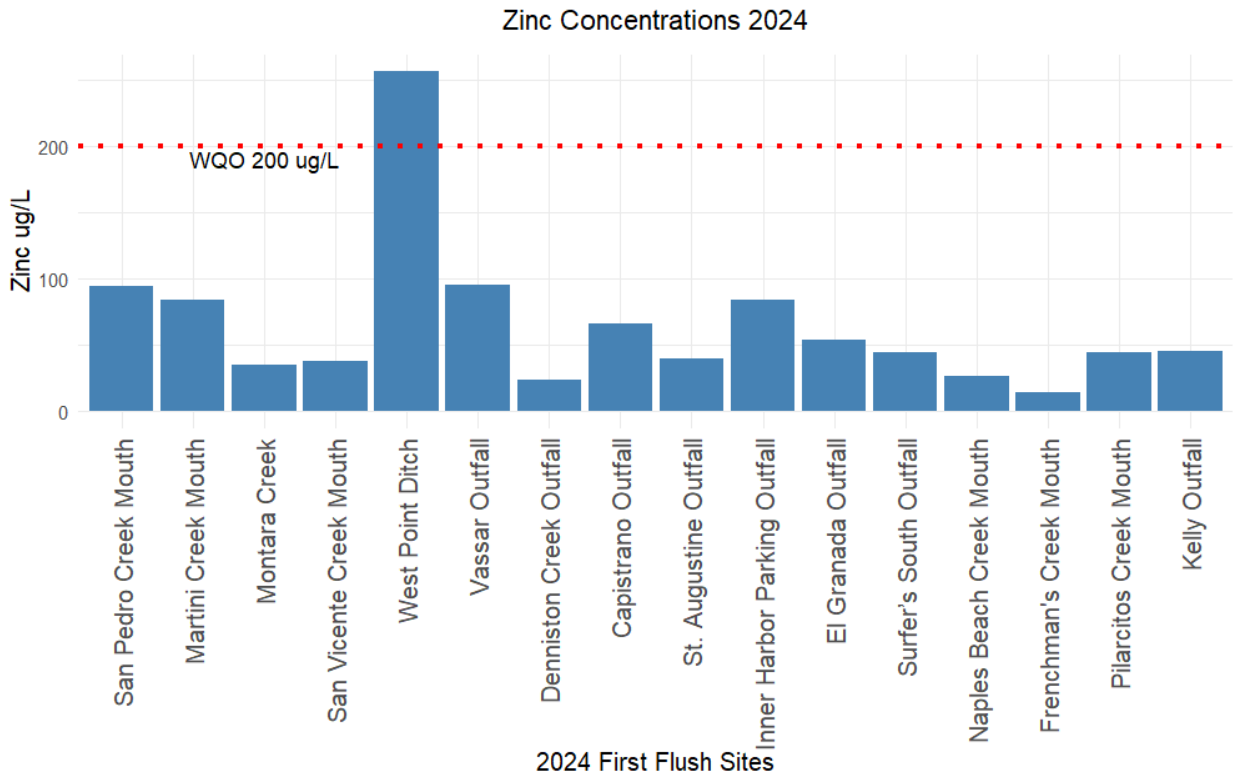


Figure 10. Zinc concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

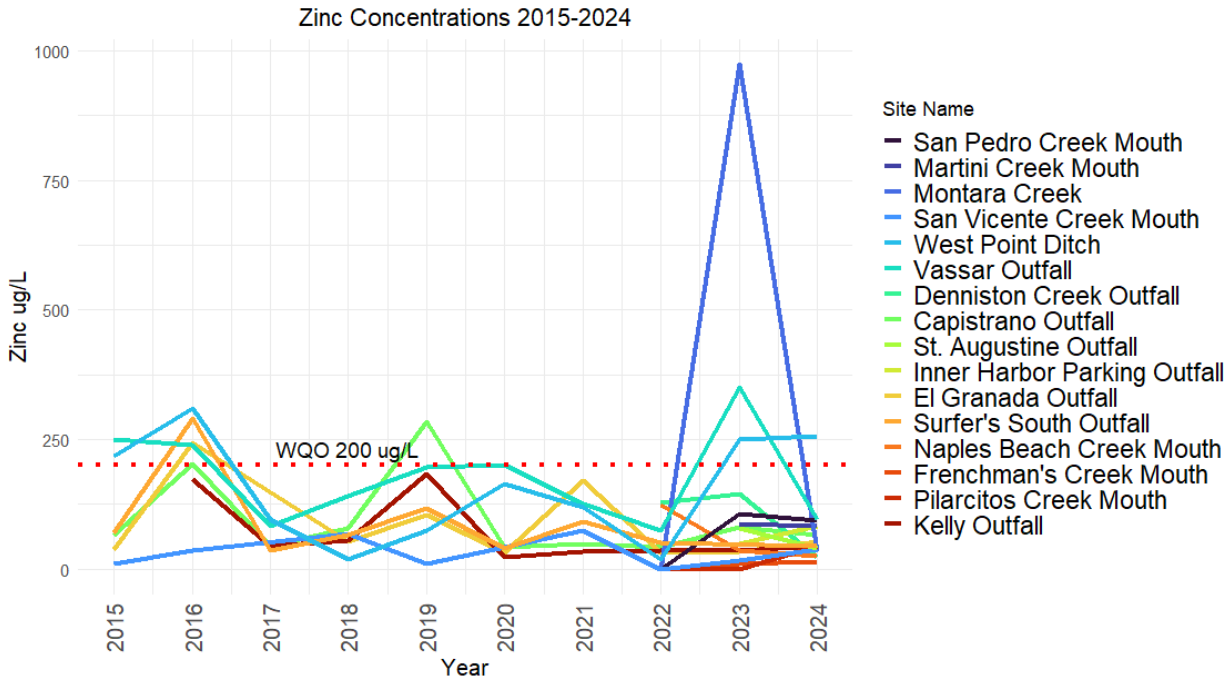


Figure 11. Historical zinc First Flush concentrations (2015-2024).

Nutrients: Nitrates and Orthophosphates

Nutrients can be likened to plant "food" and are essential for their growth. There are 16 known essential nutrients that are sub-categorized based on the relative amount typically required for plants and algae. Primary macronutrients (required in greatest amount) are carbon, hydrogen, nitrogen, oxygen, phosphorus, and potassium. Secondary macronutrients (required in moderate amounts) are calcium, magnesium, and sulfur. Micronutrients (required in very small amounts) include boron, chlorine, copper, iron, manganese, molybdenum, and zinc[10].

Since nutrients are essential to plant growth, fertilizers that contain them are frequently used in agriculture, residential gardens, and ornamental landscapes. Agricultural fertilizer use is regulated at the state level under the Irrigated Lands Regulatory Program[11], whereas residential use is not regulated other than labeling requirements for these products. Other sources of nutrients include some pesticides, detergents, and human and animal waste.

Too many nutrients in rivers, lakes, or oceans can cause algae to reproduce and grow quickly, also known as a "bloom". When algae blooms deplete the available nutrients, they die and break down, using up oxygen in the water through

[10] Texas A&M AgriLife Extension: Essential Nutrients for Plants
[11] State Water Resources Control Board Irrigated Lands Regulatory Program

decomposition which can make it hard for fish and other animals to survive. This process, called eutrophication[12], can lead to large fish die-offs and change which species can live in the water.

The relationship between nutrient concentrations and water quality is highly complex. Nutrient chemistries in soil and water are heavily dependent on not only inputs, but also physical conditions such as temperature, soil type and pH, and biological interactions with microbes and algae. Natural background concentrations of nutrients can vary regionally, so thresholds for impairment are not necessarily consistent between waterbodies[13]. Nutrient WQOs are therefore most useful when identified through a regionally specific approach rather than using WQOs sourced from more far-reaching EPA policies.

Nitrogen and phosphorus are primary macronutrients[14] that are commonly evaluated when testing water quality, as they are two of the most important nutrients for plant and algae growth. These measurements allow us to gain a better understanding of habitat condition but cannot be used as the only metric to evaluate nutrient impairment. The First Flush program tests storm runoff for nitrate and orthophosphate concentrations as an indicator of potential impairment and can help us make informed decisions on where and how to manage land use or conduct further analyses.

Nitrate

The WQO for nitrate as N (NO3-N) for the protection of aquatic habitats[15]is 2.25 mg-N/L. Nitrate was detected at 12 of 16 sites, and concentrations were above recommended levels at one site (Figure 12). The highest concentration was observed at West Point Ditch (7.2 mg/L), and nitrate was not detected at Martini Creek Mouth, Montara Creek, San Vicente Creek Mouth, and Denniston Creek Outfall.

Examining long-term trends, West Point Ditch and Vassar Outfall tend to exhibit higher concentrations of nitrate when compared to other sites (Figure 13). As stated above, the relationship between nutrient concentration and overall water quality depends heavily on site-specific factors, and higher concentrations don't necessarily mean that those waterbodies are less healthy. To that end, results that could indicate potential nutrient impairment include consistent WQO exceedances, a significant increasing trend, or a sudden shift to a new, higher, baseline level that persists over time. Only three sites have exceeded the WQO for nitrate since 2015:

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[12] CalEPA Office of Environmental Health Hazard Assessment: Division 4.5, Title 22 (Pg. 20)
[13] USEPA Fact Sheet on Water Quality Parameters: Nutrients
[14] Macronutrient: a chemical element or substance required in large amounts for the normal growth and development of living organisms.
[15] CCAMP Pajaro River Watershed Characterization Report 1998, rev 2003 (pg. 9)

Capistrano Outfall (2019), Vassar Outfall (2022), and now West Point Ditch (2024). It's possible that West Point Ditch will return to baseline levels in 2025, as we saw with past exceedances at Capistrano and Vassar Outfalls. If West Point Ditch continues at 2024 levels into future years, this may be a sign of impairment. Martini Creek Mouth and San Vicente Creek Mouth appear to exhibit relatively low nitrate concentrations throughout the life of this program and were the only two sites where nitrate was not detected in both 2023 and 2024.

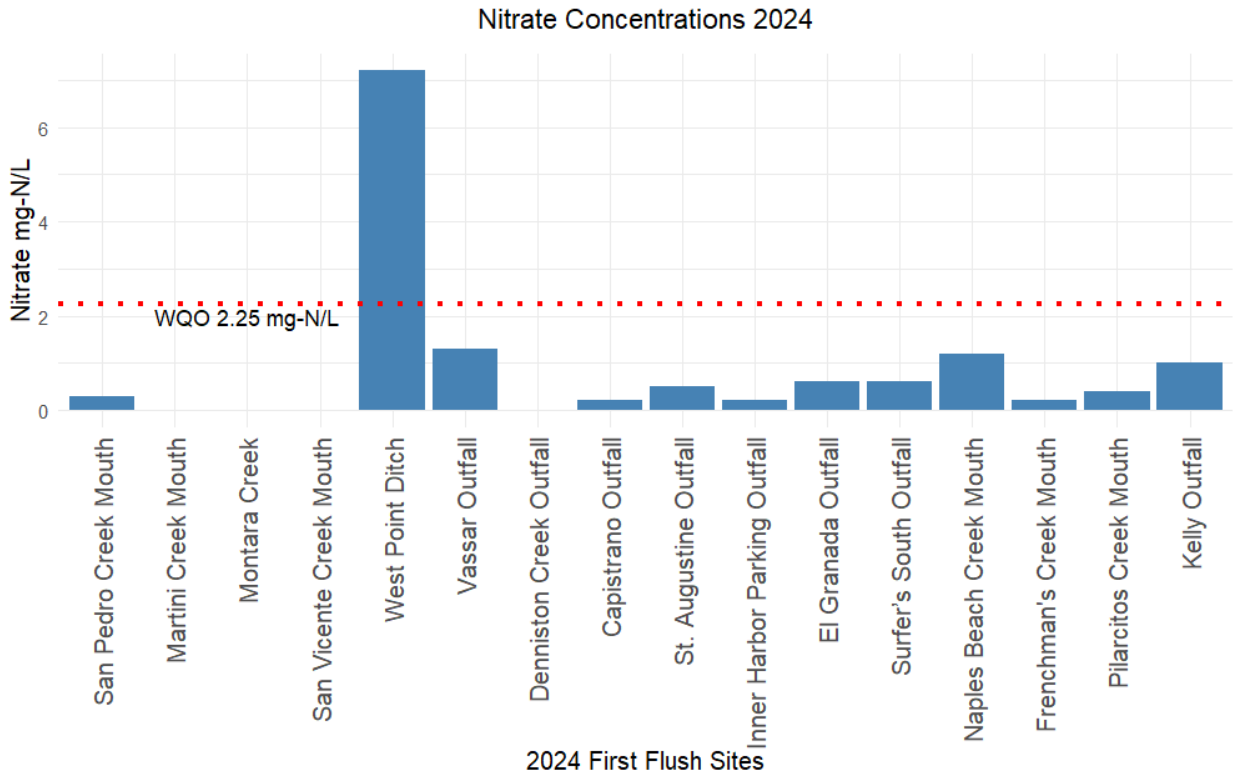


Figure 12. Nitrate concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

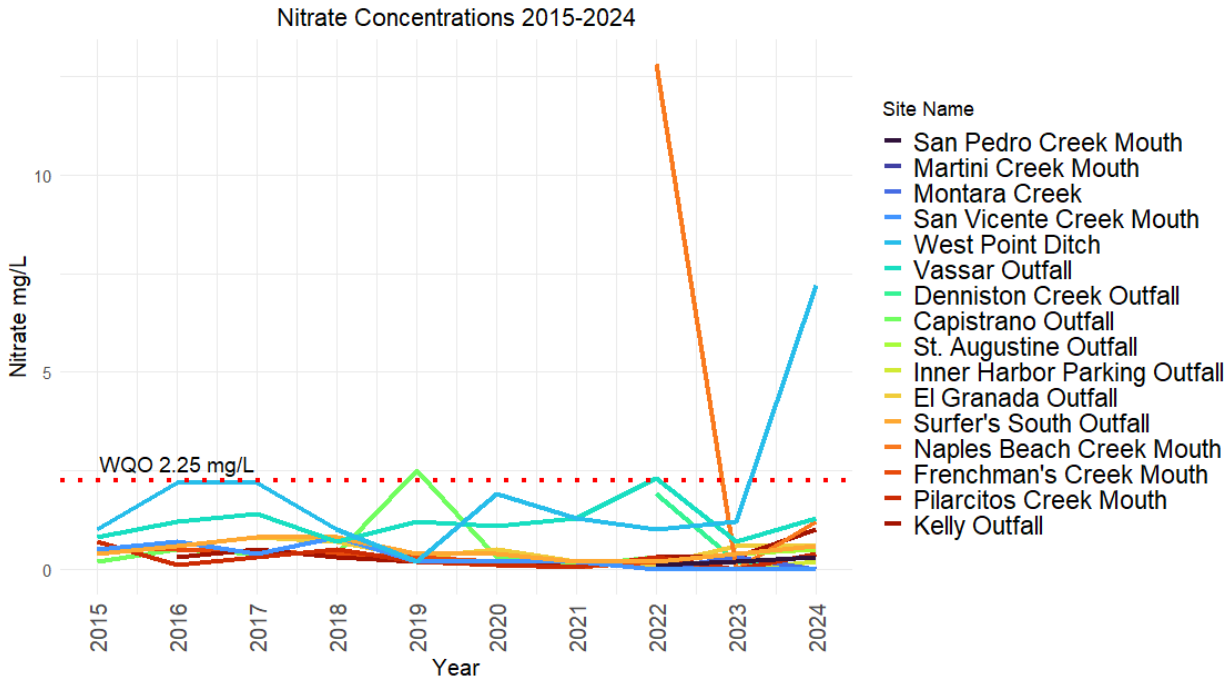


Figure 13 Historical nitrate First Flush concentrations (2015-2024).

Orthophosphate

The WQO for orthophosphate (PO4-P) for the protection of aquatic habitats[16] is 0.12 mg-P/L. Orthophosphate was detected at five of 16 sites, and concentrations were above recommended levels at all sites where it was detected (Figure 14). The highest concentration was observed at Naples Beach Creek Mouth (0.63 mg/L), and orthophosphate was not detected at San Pedro Creek Mouth, Martini Creek Mouth, Montara Creek, San Vicente Creek Mouth, Denniston Creek Outfall, Capistrano Outfall, St. Augustine Outfall, Inner Harbor Parking Outfall, Surfer's South Outfall, Frenchmans Creek Mouth, and Pilarcitos Creek Mouth.

Examining long-term trends, it's clear that the WQO for orthophosphate is frequently exceeded (Figure 15). It's possible that this is in part due to the fact that the WQO for orthophosphate is relatively low compared to other analytes. This concentration threshold of 0.12 mg-P/L was determined for the protection of aquatic habitats through monitoring work conducted in the Pajaro River Watershed – so while there are some regionally-specific comparisons to be made, a WQO exceedance for orthophosphate in our local waterways may not necessarily indicate nutrient impairment. Additionally, the minimum quantifiable concentration under our EPA-approved laboratory methods for orthophosphate is 0.16 mg-p/L, which

[16] CCAMP Pajaro River Watershed Characterization Report 1998, rev 2003 (pg. 9)

helps explain why nearly all sites show a concentration of either zero or exceeding the WQO. West Point Ditch exhibited the highest concentration of orthophosphate observed in this program's history in 2023 but appears to have returned to baseline levels for that site in 2024.

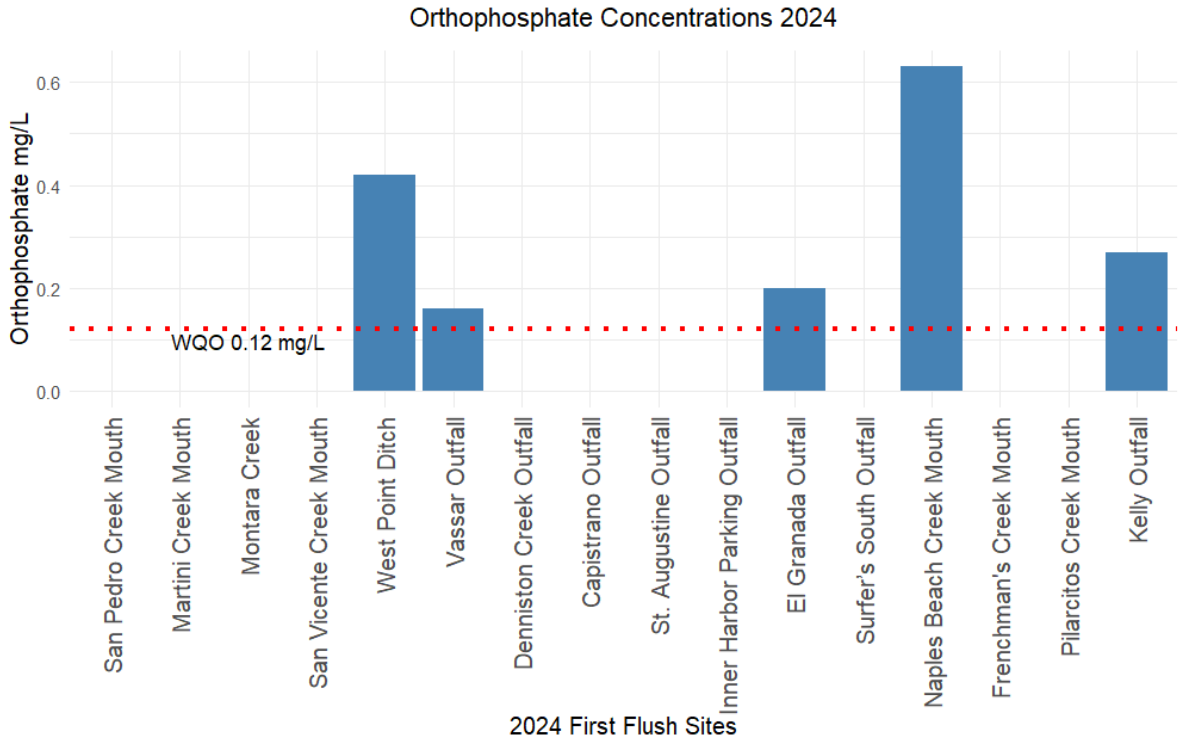


Figure 14. Orthophosphate concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

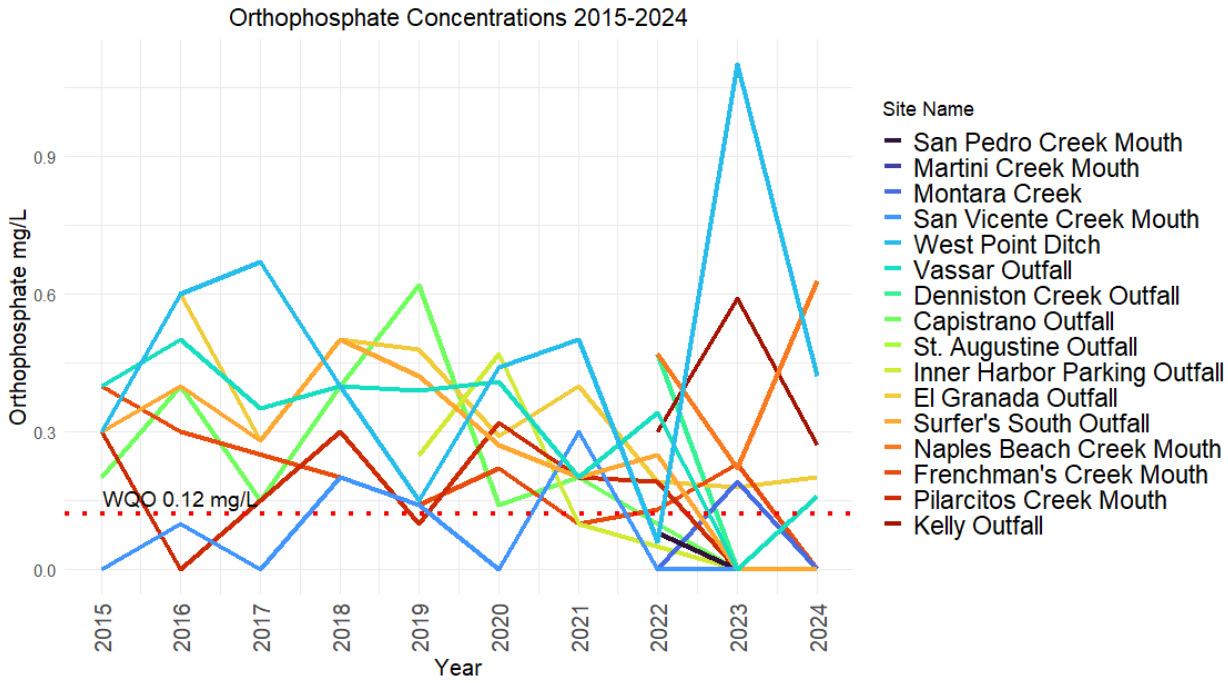


Figure 15. Historical orthophosphate First Flush concentrations (2015-2024).

Total Suspended Solids (TSS)

Total suspended solids (TSS) are particulate matter in water that attract charged particles which can often be pesticides and metals. TSS can originate from natural or accelerated rates of erosion, construction sites, agricultural runoff, fires, and other sources. TSS can impact the environment through attachment and mobilization of pollutants, habitat sedimentation, and reduction in the ability of certain aquatic organisms to breathe and/or eat. TSS are often associated with the presence of other contaminants such as FIB or heavy metals.

The WQO for TSS is 500ppm, as determined for the protection of aquatic habitats[17]. All 16 sites were below this recommended threshold in 2024 (Figure 16).

Examining long-term trends, we see that WQO exceedances for TSS are very rare (Figure 17). In 2023, the Montara Creek site exhibited the highest concentration of TSS ever observed in this program and appears to have returned to baseline levels in 2024. Before that, the only other WQO exceedance was at the San Vicente Creek Mouth site in 2012. This is generally a good sign for water quality in the region, as many pollutants can bind to and be transported by sediment particles. It also suggests that watersheds within the region are generally effective at capturing and

[17] CCAMP Hydrologic Unit Report for the Salinas River Watershed Rotation Area (1999-00) (pg. 30)

retaining sediments before reaching ocean discharge points during the first big rain of the year.

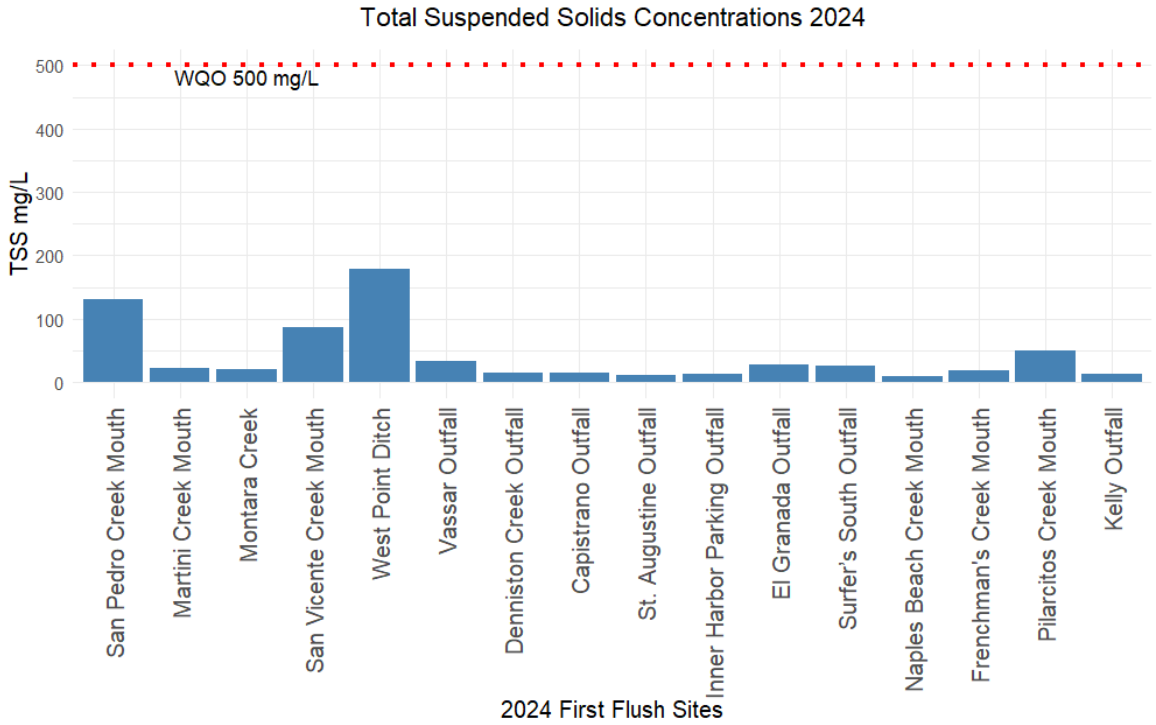


Figure 16. Total suspended solids concentrations for First Flush 2024. Sites are arranged from north (left) to south (right).

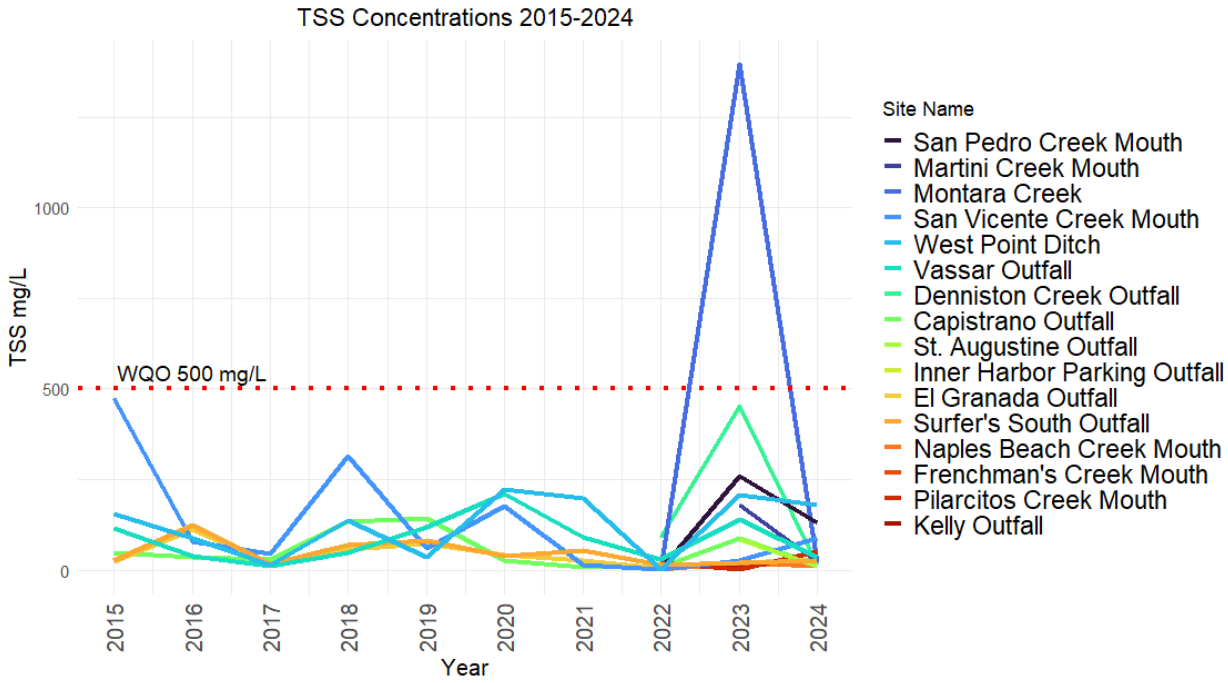


Figure 17. Historical total suspended solids (TSS) First Flush concentrations (2015-2024).

Conclusions

Annual First Flush results provide a snapshot of water quality, helping guide remediation efforts and future investigations to identify contamination sources entering the ocean. The First Flush program has existed in San Mateo County since 2003, enabling an analysis of trends and drawing conclusions that reach beyond a single snapshot in time. First Flush results tell us about water quality during the first big rain of each year and typically does not reflect year-round conditions.

First Flush results are compared to established standards, or Water Quality Objectives, which are the recommended thresholds set for each pollutant. This provides a useful means for comparison and a benchmark to understand if water quality is impaired by a given analyte.

First Flush 2024 results showed high levels of some contaminants entering the ocean. This is consistent with expectations since the First Flush is known to be the likely worst day of the year for water quality. Importantly, however, there were also instances where good signs for water quality were observed. Specific observations are as follows:

1. As expected, nearly all sites exceeded WQOs for Fecal Indicator Bacteria (*E. coli, Enterococcus*). This result demonstrates the importance of avoiding water contact immediately after a rainstorm. Martini Creek Mouth and Inner Harbor Parking Outfall were, however, within recommended levels for *E. coli*. Prior to 2024, there had only been three instances across all sites and all years monitored where samples fell below the WQO. Consistent sampling across all weather conditions is typically required to evaluate overall impairment of a stream from FIB and inform effective management efforts.
2. West Point Ditch exhibited the highest concentrations of nearly all analytes in 2024: *Enterococcus*, copper, lead, zinc, nitrate, and TSS. This site also exhibited the second highest concentration of orthophosphate and an *E. coli* concentration above the median. This is the second year in a row that West Point Ditch exhibited high contaminant levels when compared to other sites. Two additional sites located near West Point Ditch, Vassar Outfall and Capistrano Outfall, have exhibited high concentrations of several analytes – both in 2024 and in past years. Testing sediments in and around this area during the dry season may help identify potential sources of contamination to inform remediation and management efforts.
3. Montara Creek stood out in 2023 with WQO exceedances for *E. coli, Enterococcus*, copper, lead, zinc, orthophosphate, and TSS. At the time it was theorized that these exceedances may have been associated with erosion or a similar source occurring at one or more locations upstream. This site exhibited notable improvements in 2024, showing the lowest concentrations of copper,

lead, nitrate, and orthophosphate when compared to other sites. It is possible that the cause of the exceedances in 2023 was not present when sampling occurred in 2024.

4. Kelly Outfall exhibited high concentrations of copper and orthophosphate, but did not exceed WQOs for other heavy metals or nitrate. This outfall is located within Half Moon Bay State Park and drains primarily residential stormwater onto the beach. A pattern of high orthophosphate and low nitrate can generally be considered a household wastewater signature because detergents, human waste, and food waste are rich in phosphorus. High copper concentrations additionally indicate potential residential inputs since this metal is commonly found in brake dust, pesticides, and building materials. Given this signature, it's possible that exceedances for copper and orthophosphate at Kelly Outfall are associated with diffuse residential inputs across the stormwater conveyance footprint rather than coming from a specific source.
5. Naples Beach Creek Mouth had some of the lowest concentrations of metals but exceeded the WQO for orthophosphate in 2024. Our interpretation of this result is not the same as Kelly Outfall because there is less of a difference in the relative concentrations of nitrate vs orthophosphate in this case.
6. All 16 sites were within recommended levels for both lead and TSS. This is generally a good sign for water quality in the region.

Acknowledgements

Funding for this work is from Sewer Authority Mid-Coastside, Rose Foundation, San Mateo County Harbor District, and City of Pacifica, with laboratory services donated by San Mateo County Public Health Laboratory. First Flush could not happen without the citizen scientist volunteers who participate in training and brave the elements to collect the water samples.

For more information

Visit the San Mateo RCD's webpage at https://www.sanmateoRCD.org/ for further information about First Flush and other projects.

Visit https://montereybay.noaa.gov/resourcepro/reports.html for First Flush reports from the Monterey Bay National Marine Sanctuary summarizing findings from all participating counties for years 2000-2019.

Want to get involved?

To participate in the First Flush program in San Mateo County, please email FirstFlush@sanmateoRCD.org or contact the San Mateo RCD water quality team:

- Clifton Herrmann, Water Quality Specialist: Clifton@sanmateoRCD.org
- Grace Allen, Water Quality Project Manager: Grace@sanmateoRCD.org

To participate in the First Flush program in Santa Cruz or Monterey counties, please contact the California Marine Sanctuary Foundation at:

- urbanwq@californiamsf.org

Appendix A. Water Quality Objectives

First Flush results are compared to receiving water standards set for beneficial uses[18] such as habitat or recreational contact in a stream, lake, or ocean, which in some cases were designated for specific regulatory purposes unrelated to the goals of this program. The term Water Quality Objective indicates the threshold set in these standards and is used to describe all standards or guidelines, despite having been sourced from varied regulations or recommendations, provided here.

Parameter (reporting units)	Water Quality Objectives	Source of criterion
Copper (ppb)	Not to exceed 30	Water Quality Control Plan for the Central Coast-RWQCB
E. coli (MPN/100ml)	Not to exceed 320	U.S. EPA Ambient Water Quality Criteria
Enterococcus (MPN/100ml)	Not to exceed 110	U.S. EPA Ambient Water Quality Criteria
Lead (ppb)	Not to exceed 30	Water Quality Control Plan for the Central Coast-RWQCB
Nitrate as N (NO3-N) (mg/L)	Not to exceed 2.25	Central Coast Ambient Monitoring Program (CCAMP)
Orthophosphate (PO4-P) (mg/L)	Not to exceed 0.12	Central Coast Ambient Monitoring Program (CCAMP)
Total Suspended Solids (TSS) (ppm)	Not to exceed 500	Central Coast Ambient Monitoring Program (CCAMP)
Zinc (ppb)	Not to exceed 200	Water Quality Control Plan for the Central Coast-RWQCB

[18] "Beneficial Use" explanation here: https://mavensnotebook.com/glossary/beneficial-uses/

Appendix B. First Flush 2024 raw data. Measurements that exceed WQOs are shown in red. Sites are arranged from north (top) to south (bottom).

Site Code	Site	E.coli 1:10	Entero 1:10	Copper Total (ug/L)	Zinc Total (ug/L)	Lead Total (ug/L)	Nitrate as N (mg/L)	Orthophosphate as P (mg/L)	Total Suspended Solids (mg/L)
202-SPCM-01	San Pedro Creek Mouth	24196	19863	16	94	5.9	0.3	ND	130
202-MOSD-04	Martini Creek Mouth	313	1153	2	84	1.2	ND	ND	23
202-MOSD-03	Montara Creek	1112	2247	2	35	0.6	ND	ND	21
202-MBSD-05	San Vicente Creek Mouth	5794	4884	4	38	2.9	ND	ND	86
202-MBSD-05-dup	San Vicente Creek Mouth DUP	4106	5172	3	32	2.7	ND	ND	84
202-MBSD-04	West Point Ditch	8664	24196	59	256	23.4	7.2	0.42	178
202-EGSD-04	Vassar Outfall	5475	12997	31	95	11	1.3	0.16	34
202-PPSD-03	Denniston Creek Outfall	12997	4611	3	24	0.7	ND	ND	15
202-EGSD-03	Capistrano Outfall	4352	8164	34	66	1.5	0.2	ND	14
202-PPSD-04	St. Augustine Outfall	24196	24196	17	40	1.1	0.5	ND	11
202-PPSD-05	Inner Harbor Parking Outfall	318	4106	15	84	2.1	0.2	ND	13
202-EGSD-01	El Granada Outfall	24196	24196	17	54	1.4	0.6	0.2	28
202- EGSD-02	Surfer's South Outfall	24196	24196	12	44	1.3	0.6	ND	26
202-NBDO-22	Naples Beach Creek Mouth	3076	10462	9	26	0.6	1.2	0.63	10
202-FRENC-11	Frenchman's Creek Mouth	4611	6867	4	14	0.6	0.2	ND	18
202-PILAR-12	Pilarcitos Creek Mouth	17329	12997	10	44	2.7	0.4	ND	50
202-HMB-05	Kelly Outfall	24196	24196	50	45	1.4	1	0.27	13
202-FF-BLANK	Blank	0	0	ND	ND	ND	0.3	0.1	ND
	Water Quality Objective	**320**	**110**	**30**	**200**	**30**	**2.25**	**0.12**	**500**

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

SUBJECT: Review and Possible Action Concerning Water Main Extension Agreement for New Service Connection at 350 9TH Street, Montara, APN 036-025-330

Applicant Lisa Oh (Applicant) filed New Service Application with Montara Water and Sanitary District (MWSD or District) for domestic water, fire protection service (PFP), and sewer services for a new development located at 350 9th Street, Montara, (APN 036-025-330). In accordance with the District's code, the proposed project requires an approximately 275-foot, 6-inch-diameter water main extension in the public right-of-way, from the existing water main located on East Avenue to the proposed new dwelling at 350 9th Street to provide water and PFP services to the proposed new development. In addition, this project would re-connect four (4) existing residences to the new water main. The proposed water main extension was designed by the applicant's engineer in accordance to District's codes and standard specifications.

The main extension design drawings have been approved by the District Water Engineer. The Applicant chose this project not to be advertised to District- certified contractors and to award this contract to one of the District- certified contractors, Mossa Excavation. A copy of the bid is attached to this report for a total cost of $79,900 dollars.

The Applicant is responsible to cover all costs to furnish all labor, materials and equipment for construction related to water main extension, water and PFP laterals. Staff is seeking Board's approval from to enter into the Agreement for Construction and Acquisition of Water Main Extension with the Applicant. The agreement is included in **Exhibit A.**

RECOMMENDATION:

Approve the Agreement for Construction and Acquisition of Water Main Extension for the new water service connection project at 350 9th Street, Montara, APN 036-025-330.

Attachment

AGREEMENT FOR CONSTRUCTION AND ACQUISITION OF WATER MAIN EXTENSION (APN 036-025-330)

THIS AGREEMENT, made and entered as of Feb 14, 2025, by and between the **MONTARA WATER AND SANITARY DISTRICT**, a public agency located in the County of San Mateo, California ("District") and **Lisa Oh** ("Applicant");

WITNESSETH:

WHEREAS, Applicant has applied for a permit to connect Applicant's real property described in Exhibit "A" hereof, attached hereto and by this reference incorporated herein ("Property," also designated by Assessor's Parcel Number (**036-025-330**) to District's water system pursuant to the provisions of Section 5-3.100 of the Montara Water and Sanitary District Code ("District Code"); and

WHEREAS, a water main extension ("Extension") is required in order to serve the Property; and

WHEREAS, Applicant has submitted plans, profiles, and specifications for the Extension which have been approved by District's Water System Engineer for conformance with District's requirements under District Code Section 5-4.222; and

WHEREAS, this agreement is entered into pursuant to Section 5-4.203 of the District Code;

NOW, THEREFORE, the parties hereto agree as follows:

1. Extension. Applicant shall, at Applicant's own cost and expense, provide for the construction of the Extension, furnish all the materials, and do all the work hereinafter described in accordance with, and as provided for, in the plans, profiles and specifications (collectively, "Plans") prepared for Applicant by Charles M. Kissic, Registered Professional Engineer, entitled, "350 9Th Street, Montara," District's Standard Specifications on file in District's Administrative

Offices and the provisions of Chapter V, Article 4, Division 2 ("Extension of Facilities") of the District Code, the applicable provisions of which are hereby incorporated herein. If a conflict exists between the Plans and District's Standard Specifications and/or said Division 2 for a particular portion or component of the Extension, the stricter standard shall govern to the extent of such conflict. Applicant shall complete construction of all of the Extension subject to such exceptions and time extensions as may be allowed under Paragraph 12 (Force Majeure), on or before December 1, 2025.

2. Inspection. Applicant hereby grants District, its officers, employees, consultants, agents and designees the right and permission to enter upon the Property and the site or sites of construction of the Extension to inspect the work of construction, to test, and/or observe the testing of, the Extension, and otherwise to ensure that the Extension is constructed in accordance with the requirements described in Paragraph 1.

3. Property Interests. Prior to commencing construction of the Extension Applicant shall submit to District deed(s) of easement(s) or other evidence(s) of any and all property interest(s), title to which is vested in Applicant or is otherwise sufficient and free of encumbrances or claims by others to allow for the construction of the Extension by Applicant and for District's right of entry pursuant to Paragraph 2. Upon completion of construction of the Extension and acceptance thereof by District, Applicant shall grant District an easement, or such other property interest as may be specified by District, in the real property in which the Extension and appurtenances are located and convey title to the Extension and appurtenances to District free and clear of any encumbrances, except such encumbrances as may expressly in writing be accepted by District. Applicant agrees and covenants that, prior to execution of any such conveyances, Applicant shall not convey to any other person(s) or entity or entities the same interest or any other interest that may conflict with the interest

or interests to be conveyed to District. Title to the Extension shall vest absolutely in District upon District's acceptance thereof.

All deeds or other forms of conveyancing documents described above shall be subject to the approval of District's legal counsel. Applicant shall, prior to commencement of construction of the Extension, obtain and provide District with a copy of a title report for the Property and such other property within which the Extension is to be constructed. Conveyance of title to District shall be through escrow acceptable to District. All conveyancing costs including, without limitation, costs of preparing documents, escrow, title insurance for the benefit of District, and recordation shall be borne by Applicant.

4. Security. Applicant shall, prior to the commencement of any work on the Extension, file with District's Manager a bond or cash deposit securing the faithful performance of all work and the construction of the Extension within the time herein specified. The amount of the security shall be Seventy-Nine Hundred and Ninety Dollars ($7,990.00).

Applicant shall, likewise prior to the commencement of any work on the Extension, file with District's Manager a bond or cash deposit securing the payment by Applicant of all bills for labor and materials incurred in the construction of the Extension and the doing of all other work herein agreed to be done by Applicant, with respect to the Extension. The amount of the security shall be Seventy-Nine Thousand Nine Hundred Dollars ($79.900.00).

The aforementioned security shall include, in addition to the principal amounts, a guarantee of the payment of costs and reasonable expenses and fees, including reasonable attorneys' fees, incurred by District in the event of successful enforcement of such security. All bonds shall be issued by a corporate surety admitted in the State of California.

5. Deposits for District's Costs. Applicant has deposited with District (the "Initial Deposit") the sum of One-Thousand Dollars and No/100 Dollars ($1000.00), receipt of which is hereby acknowledged by District. The deposit

shall be used by District to pay for its costs incurred in administering this agreement and carrying out its duties regarding construction and acceptance of the Extension including, without limitation, costs of reviewing the Plans for the Extension, costs incidental to inspection of the construction of the Extension, administrative, engineering and legal services costs and other costs and expenses incurred by District relating to this agreement and to construction of the Extension. If the Initial Deposit is insufficient to pay all such estimated costs and expenses, District shall notify Applicant in writing of any such insufficiency, whereupon Applicant shall replenish the deposit in the amount estimated by District that is necessary to cover District's remaining estimated costs and expenses. If such insufficiency occurs, District shall not be obligated to perform any further services hereunder unless and until an additional deposit is made. Upon completion of the construction of the Extension, Applicant shall pay any additional costs and expenses of District not covered by the Initial and, if applicable, the additional deposit prior to acceptance of the Extension by District. District shall refund to Applicant any balance of the deposit(s) remaining after acceptance of the Extension.

Applicant hereby acknowledges and agrees that the aforesaid deposit(s) shall not be deemed as payment, or excuse payment, of any other fees and charges duly imposed by District and payable by Applicant for use of, or connection to, District's water system.

6. <u>Hold Harmless</u>. Applicant shall protect, indemnify, and hold harmless District, its governing board, commissions, committees, officers, agents and employees (collectively, "Indemnitees") from and against any and all liability, losses, damages, claims, causes of action, or actions arising out of any accident, occurrence or incident resulting from, or alleged to have resulted from, the construction of the Extension by or for Applicant, the negligent performance of, or failure to perform, any contractual responsibility of Applicant, or any negligent action or omission of Applicant relating to the construction of the Extension or

other responsibility of Applicant. Applicant shall also protect, indemnify, and hold harmless Indemnitees from and against any and all liability or allegations thereof, relating to the use of any copyrighted material in the Plans or the use of any patent or patented article or process by Applicant in the construction of the Extension. Applicant's duty to defend and hold harmless shall include the responsibility to provide legal representation, the selection of whom shall be subject to District's approval.

7. Insurance. Applicant shall obtain and maintain in full force and effect during the term of this agreement, at Applicant's cost, a comprehensive general liability insurance policy naming District, its governing board, commissions, committees, officers, agents, and employees (collectively, "District's Insureds") as insureds or additional insureds, insuring them against liability for personal injury (including death) and property damage (including loss of use thereof) arising out of the construction of the Extension and/or from Applicant's performance or failure to perform Applicant's obligations under this agreement. Said insurance shall be in the minimum limits of $1,000,000 for personal injuries to, or death of, any one person, $1,000,000 for personal injuries or death arising out of any one occurrence and $1,000,000 for property damage arising out of any one occurrence. Said insurance shall expressly insure against contractual liability assumed by Applicant under this agreement including, without limitation, the provisions of Paragraph 1.

The foregoing policies or endorsements thereto shall provide that: (i) the insurer shall notify District in writing thirty (30) days in advance of the insurer's intention to cancel or materially change the terms of said policy or policies, (ii) coverage for District's Insureds shall be severable from that of other insureds if the insurance covers Applicant, another entity, or person(s) in addition to District's Insureds (cross liability or severability of interest provision) and (iii) such insurance shall be primary regarding District's Insureds and that any insurance or

self-insurance maintained by District shall be excess of Applicant's insurance, and not contributory with it.

Applicant shall furnish evidence of the insurance by filing with District's Manager copies of the policy's or policies' declaration page(s) or information page(s) with such endorsements as may be necessary to show compliance with all of the requirements of this Paragraph, together with a certificate or certificates of the insurance. Applicant shall file said documents upon execution of this agreement.

8. Acceptance. Construction of the Extension in conformance with the Plans, District's Standard Specifications and the provisions of Chapter V, Article 4, Division 2 ("Extension of Facilities") of the District Code incorporated herein pursuant to Paragraph 1 shall be subject to the approval of District's Water System Engineer. Upon completion of the construction in full compliance with this agreement and upon recommendation of said Engineer, District shall accept the Extension. The security required hereunder shall not be released until said acceptance. Upon acceptance, Applicant shall furnish District with a complete set of plans and drawings showing the Extension in their actual or "as built" condition and location.

9. Time of the Essence. Time is of the essence of this agreement, and if Applicant defaults in the performance of Applicant's obligations hereunder not excused by reason of Force Majeure under paragraph 12, Applicant hereby agrees that District may, at District's option: (i) treat any deposits and payments made by Applicant hereunder as compensation or reimbursement for District's costs and expenses hereunder and terminate this agreement, or (ii) if District desires that the Extension shall be completed, District may enforce the provisions hereof against Applicant and Applicant' sureties, and recover any and all costs incurred therewith, including, without limitation, costs of suit and reasonable attorney's fees.

10. Guarantee of Workmanship and Materials. Applicant agrees that, if within a period of one (1) year after acceptance of the Extension, the Extension or any part or component thereof fails to fulfill any of the requirements of this agreement, or of the Plans, District's Standard Specifications and the provisions of Chapter V, Article 4, Division 2 ("Extension of Facilities") of the District Code incorporated herein, Applicant shall, upon written notice from District directing the work to be done, without delay and without any cost to District, repair, replace or reconstruct any defective or otherwise unsatisfactory part or parts of the Extension. Should Applicant fail to act promptly to make such repair, replacement, or reconstruction, or otherwise to act in accordance with the requirement to repair, replace, or reconstruct, or should the exigencies of the case require that repair, replacement, or reconstruction be made before Applicant can be notified, District may, at its option, make the necessary repair, replacement, or reconstruction or perform the necessary work, and Applicant shall pay to District the actual cost of thereof plus fifteen (15) percent.

Notwithstanding any provision to the contrary in this agreement, Applicant shall not be responsible for repair, replacement, or reconstruction of any Extension, necessitated by events of Force Majeure described in Paragraph 12.

11. Security to Insure Guarantee. Applicant agrees, as a condition precedent to District's acceptance of the Extension, to furnish and file with District a bond or cash deposit in the amount of Seventy-Nine Hundred and Ninety Dollars ($7,990.00) guaranteeing and securing to District Applicant's compliance with the provisions of Paragraph 10 for a period of one (1) year after acceptance of the Extension by District.

12. Force Majeure. Applicant shall not be in default of any provision of this agreement where timely performance or timely compliance thereof is prevented by acts of God, including natural disasters, or unusually inclement weather, civil emergencies, inability to obtain materials (except for such inability occasioned by the act, or failure to act, of Applicant), unanticipated change in

governmental regulations, labor strike or disturbance (except that pertaining to Applicant's employees or agents) or similar acts which are beyond Applicant's reasonable ability to control; provided, that Applicant shall be obligated to perform or comply within a reasonable time after the event or action which precluded Applicant' timely performance no longer exists.

13. Independent Contractor. It is mutually understood and agreed that neither Applicant, nor any of Applicant's agents or contractors are, or shall be, agents or employees of District in connection with the performance of Applicant's obligations under this agreement. Applicant is, and shall be, an independent contractor hereunder.

14. Assignability. Applicant may assign this agreement subject to District's prior written approval, which shall not be withheld unreasonably.

15. Successors. The rights and obligations of the parties hereunder shall inure to the benefit of, and be binding upon their respective successors, assigns, administrators and heirs.

16. Joint and Several. If Applicant, as named above, consists of two or more persons or entities (irrespective of whether the form of such entity or entities is corporate, partnership, association or other form), the obligations and responsibilities under this agreement of each and all of them are joint and several.

17. Recordation. Either party hereto may submit this agreement or a memorandum thereof to the Recorder of the County of San Mateo, California, for recordation in the Official Records of said County.

18. Attorney's Fees. If suit is brought by one party against the other for damages and/or to enforce the provisions of this agreement, the prevailing party shall recover costs of suit including reasonable fees of expert witnesses and reasonable attorneys fees.

19. Entire Agreement. This agreement comprises the entire agreement between the parties and integrates any and all prior writings, documents or understandings, between them pertaining to the subject matter hereof.

20. Paragraph Headings. Paragraph headings as used herein are for convenience of reference, and shall not be deemed to amend or alter the contents of the paragraphs headed thereby.

IN WITNESS WHEREOF, the parties hereto have executed this agreement the day and year first hereinabove written.

MONTARA WATER AND SANITARY DISTRICT, a public agency ("District")

By:_____

District Manager

Lisa Oh
_____ **("Applicant")**

By: [redacted]_____

Mossa Excavation
650-868-9673 License 814702
PO Box 370688, Montara, CA 94037

Estimate

Date	Estimate #
3/10/2025	1189

Name / Address
Lisa Oh 350 9th Street Monatara, CA. 94037

Project

Description	Qty	Cost	Total
350 9th Street 6" Water Main Extension -Mossa Excavation is pleased to submit for your review and consideration this budgetary proposal providing trenching and backfill of MWSD designed 6" water main improvement that will be code compliant with all MWSD and County of San Mateo specs. Please refer to itemized list below for specific details. Mossa Excavation takes pride in our work with mastery certified installation and over 29 years of experience. We look forward to offering top quality service from start to finish and thank you for the opportunity. This proposal is valid for 90 days -Note: Work to be performed in conformance with the Montara Water District's current Standard Specifications drawn by Sigma Prime and document titled "9th Street water main replacement C-4a, dated 6-13-22". -Estimate based on C-4a drawing -List of included items in scope of work: 1) Excavate trench approximately 275 feet from the existing 8" water main on East Street to edge of 350 9th St. property line 2) Demo and remove existing blow-off 3) Install new 6" C900 water main 4) Supply 1.5 inch service with hammer head to property line with 1) 3/4" domestic and 1) 3/4" PFP meter sets 5) Install 2" blow-off at end of main X 2 6) Backfill sand to be used for trench leveling/bedding and for covering up to 6 inches over the new water main. 7) All trench backfill will comply with the County of San Mateo's standard detail for trenching and backfill Inclusions: Refer to items 1 through 7 above for details; one-year warranty of material and labor.		67,590.00	67590.00
-Additional Scope of Work---Hook up 4 existing services to new water main per plans provided and extend new 6" water main 30 feet beyond 350 9th Streets property line. -Note: Obtaining street encroachment permits from the County of San Mateo and traffic control plan to be separate from estimate total and invoiced as cost plus 20%		12,310.00	12310.00

	Total	$79,900.00

Request for Reconsideration of Water Main Requirements – 350 9th Street
Date: May 1, 2025

Dear Members of the MWSD Board,

We are writing to respectfully request reconsideration of the current requirements placed on us as homeowners by the District regarding the water main on the upper end of half a block of 9th Street.

The District is requiring us to replace the existing 4-inch and 1.5-inch water mains with a new 6-inch main on a dead-end street. Engineers from Aegis Fire Systems and from Sigma Prime determined and communicated to the District that the existing main provides sufficient flow and pressure to meet the needs of our home's PFP system and domestic water use, along with the existing services — see attached emails.

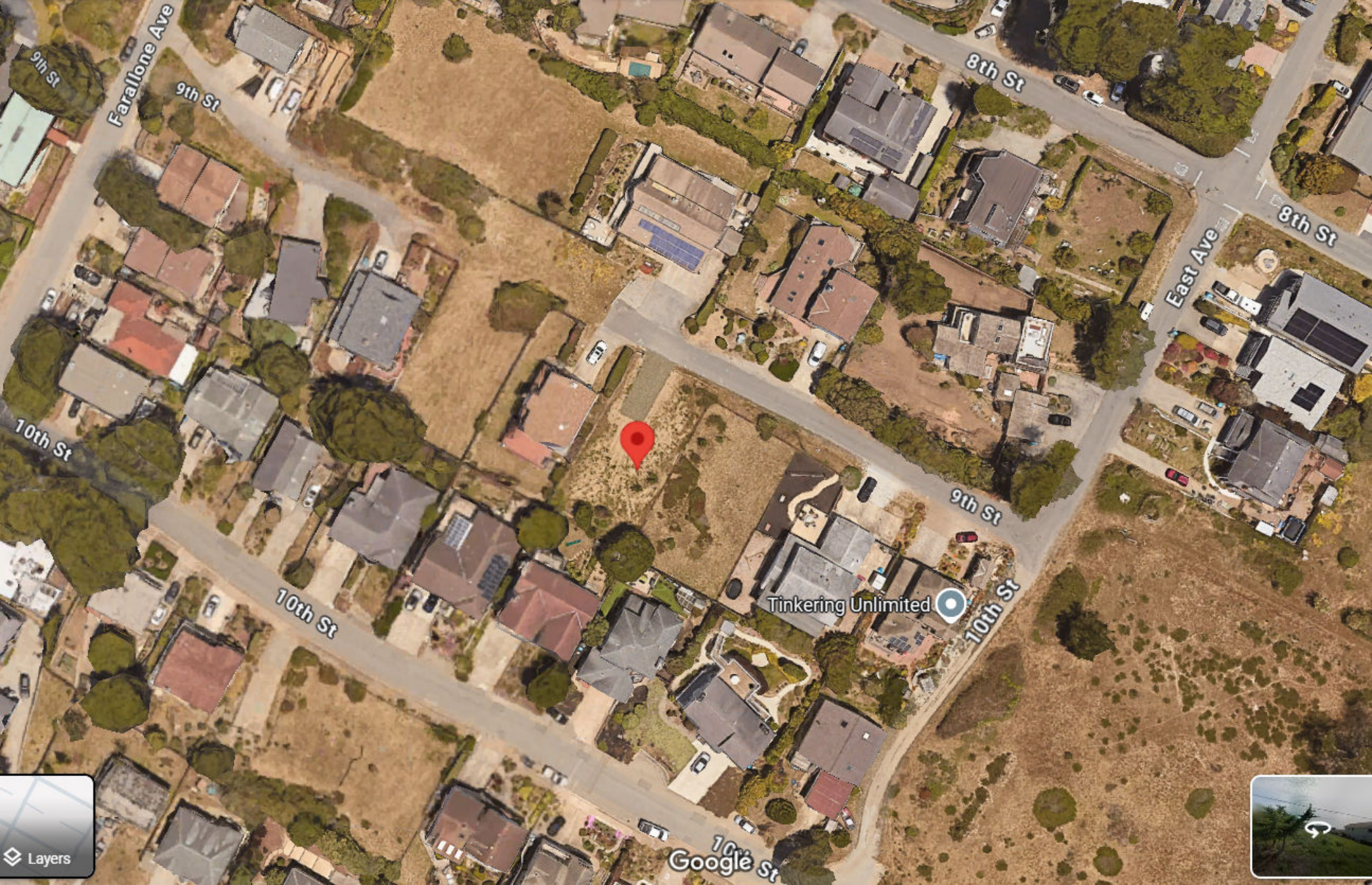
We are building a modest-sized home for two on a street with five other homes. We are not a developer, this is not a subdivision, and there is no possibility of meaningful growth on our dead-end street that would justify the scale of this infrastructure requirement.

Per MWSD Water Utility Standard Specifications Section 4-02B "B. Minimum Water Main Size - The minimum nominal pipe size for water main shall be six inch in diameter unless otherwise specifically allowed by the District." As the Board has discretionary authority here, **we kindly ask you to approve allowing our home to connect to the existing water main, which meets all capacity needs**.

Otherwise, per our conversation with the District — documented on July 6, 2022 in the attached email — the District agreed to be responsible for the extension beyond our property and the connections for other homes. As of March 2025 the District has changed their position and is now requiring us to pay for these two things. **If we have to bear the costs of the unneeded new main, we kindly request the Board to uphold the earlier agreement in which the District pays for the extension beyond our property and the reconnections**. This is at least somewhat proportionate and fair to us.

Thank you.

Sincerely,
350 9th Street Homeowners


9th St
Farallone Ave
9th St
8th St
8th St
East Ave
10th St
9th St
10th St
Tinkering Unlimited
10th St
Google
Layers

Gmail [redacted]

Fw: Project at 350 9th St in Montara

1 message

Sigma Prime Geosciences, Inc. <sigmaprm@gmail.com> Tue, Apr 8, 2025 at 12:21 PM
To: [redacted]

Below is the email chain I had with Jerome at SRT...

Sigma Prime Geosciences, Inc.
332 Princeton Avenue
Half Moon Bay, CA 94019
650-728-3590

From: Sigma Prime <[redacted]>
Sent: Wednesday, February 16, 2022 10:13 AM
To: Jerome Navarro <jerome@srtconsultants.com>
Subject: RE: Project at 350 9th St in Montara

Hello Jerome,

I just got off the phone with Gary Kelsey of Aegis Fire System who did the fire flow calculations for the proposed house at 350 9th Street. He was unaware that the main in the frontage of the property was only 1.5". However, he recalculated using 300 foot length at 1.5" diameter from the 6" main on East Street. Due to the high static pressure of over 100 psi if the PFP meter is increased to 1" there will be sufficient flow for PFP.

Please give me a call to discuss. [redacted]

Best regards,

Abbie

Sigma Prime Geosciences, Inc.

332 Princeton Avenue

Half Moon Bay, CA 94019

[redacted]

From: Jerome Navarro
Sent: Wednesday, February 16, 2022 9:43 AM
To: Sigma Prime
Subject: Re: Project at 350 9th St in Montara

Good morning Abbie,

I think Clemens' intention was that the 1.5-inch main line is insufficient to supply PFP flows to the property.

I probably worded that confusingly, but I'll try and clarify in my response later.

Best,

Jerome Navarro, P.E.

SRT Consultants

Water Resources Engineers

415 776 5800 316 office

415 726 2496 direct

415 776 5200 fa

www srtconsultants com

www linkedin com/company/srt consultants

On Tue, Feb 15, 2022 at 4:00 PM Sigma Prime [redacted] wrote:

> Jerome,
>
> The existing fire hydrant is connected to the 6 inch main and only 200 feet from the subject property. I don't think that argument will suffice for a main-line replacement.
>
> Best regards,
>
> Abbie
>
> Sigma Prime Geosciences, Inc.
>
> 332 Princeton Avenue
>
> Half Moon Bay, CA 94019
>
> [redacted]

From: Jerome Navarro
Sent: Tuesday, February 15, 2022 7:31 AM
To: Sara Copeland
Cc: Chez Santini; Jerry Santini; Sigma Prime Geosciences, Inc.; Tracy Beardsley
Subject: Re: Project at 350 9th St in Montara

Good morning Sara,

I was able to meet with District Management last night, and it has been determined that the existing 1.5-inch water main is inadequate to support firefighting flows to the property.

A mainline upgrade from East Ave to the frontage of the parcel will be required, from the existing size to at least a 6-inch main.

Best,

Jerome Navarro, P.E.

SRT Consultants

Water Resources Engineers

415-776-5800 x316 office

415-726-2496 direct

415-776-5200 fax

www.srtconsultants.com

www.linkedin.com/company/srt-consultants

On Wed, Feb 9, 2022 at 5:58 PM Jerome Navarro <jerome@srtconsultants.com> wrote:

> Good afternoon Sara,
>
> I'll check-in with Management again, but unfortunately I don't have any updates at this time.
>
> Best,
>
> **Jerome Navarro, P.E.**
>
> SRT Consultants

Gmail [redacted]

350 9th Street 6" Water Main

[redacted] Wed, Jul 6, 2022 at 10:34 AM
To: Jerome Navarro <jerome@srtconsultants.com>

Hi Jerome,

Thank you for confirming our purview with the water main line extension is to the edge of our property and our connection only and that MWSD will be responsible for the extension beyond our property and the connections for other homes.

I will contact the manager for MWSD to discuss any finance programs available for properties with existing well water.

Thank you,
Lisa

On Tue, Jul 5, 2022 at 2:19 PM Y B [redacted] wrote:

> Great, thank you.
>
> On Tue, Jul 5, 2022 at 1:48 PM Jerome Navarro <jerome@srtconsultants.com> wrote:
>
> > Hi Lisa,
> >
> > Yes, 10am tomorrow works for me. Feel free to call me at 415-726-2496.
> >
> > Best,
> > **Jerome Navarro, P.E.**
> > SRT Consultants
> > Water Resources Engineers
> > 415-776-5800 x316 office
> > 415-726-2496 direct
> > 415-776-5200 fax
> > www.srtconsultants.com
> > www.linkedin.com/company/srt-consultants
> >
> > S R T
> > consultants
> >
> > On Tue, Jul 5, 2022 at 1:20 PM Y B [redacted] wrote:
> >
> > > Good afternoon Jerome,

Welcome back from vacation. Tomorrow morning is great. Does 10am work for you?

Thank you,
Lisa Oh
[redacted]

On Tue, Jul 5, 2022 at 1:14 PM Jerome Navarro <jerome@srtconsultants.com> wrote:

> Good afternoon Lisa,
>
> I'm back from vacation and am available to speak tomorrow morning.
>
> Let me know if that works for you,
> **Jerome Navarro, P.E.**
> SRT Consultants
> Water Resources Engineers
> 415-776-5800 x316 office
> 415-726-2496 direct
> 415-776-5200 fax
> www.srtconsultants.com
> www.linkedin.com/company/srt-consultants
>
> S R T consultants
>
> On Wed, Jun 29, 2022 at 4:08 PM [redacted] wrote:
>
> > Good afternoon Jerome,
> >
> > We have a few questions about the [redacted] water main plan created by Sigma Prime and approved by you for our lot at 350 9th St in Montara.
> >
> > Is it possible to schedule a time to speak at your earliest convenience?
> >
> > Thank you,
> > Lisa Oh
> > [redacted]

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

SUBJECT: **Review and Possible Action Concerning Authorization of a PURCHASE OF THE AIRPORT PUMP STATION PORTABLE GENERATOR REPLACEMENT AND SURPLUS OLD GENERATOR UNITS.**

In accordance with the Capital Improvement Plan (CIP) and working with SAM sewer maintenance staff, the condition and maintenance of the MWSD emergency power generators are frequently reviewed for viability. It has been determined that the current portable power generator usually stored at the airport pump station is now 15 years old. It has significant rust and corrosion to the body and chassis, and the engine is no longer meeting the current air district pollution standards. We recommend to surplus this unit, and additionally surplus a second generator stored at SAM which has already been replaced.

The District solicited four companies for quotations for the purchase of a replacement 45 KVA/36KW portable generator with an optional smart load bank, and add-on which helps reduce annual maintenance cost.

Fiscal Impact: The quotes were submitted from three of the four companies by the 4/15/2025 deadline. The range was $46,676.00 to $60,912.02. All companies indicate the price could vary due to possible pending US Tariffs. We recommend acceptance of the Pac Machine quote of $46,676.00, with a not-to-exceed the limit of $55,000.00 to cover possible cost increases due to Tariffs and allow for purchase of additional wires and accessories.

Pippin Cavagnaro, P.E. from Nute Engineering, will be available to present the Project and answer any questions the Board might have.

RECOMMENDATION:

Adopt *Resolution Approving Purchase Of The Airport Pump Station Portable Generator, Accepting Quote Of Pac Machine Company In The Amount Of $46,676.00, With A Not-To-Exceed The Limit Of $55,000.00, Authorizing Manager To Execute Purchase Agreement, And Declaring Certain Equipment As Surplus And Authorizing Its Sale*

Attachments

RESOLUTION NO. ____

RESOLUTION APPROVING PURCHASE OF THE AIRPORT PUMP STATION PORTABLE GENERATOR, ACCEPTING QUOTE OF PAC MACHINE COMPANY IN THE AMOUNT OF $46,676.00, WITH A NOT-TO-EXCEED THE LIMIT OF $55,000.00, AUTHORIZING MANAGER TO EXECUTE PURCHASE AGREEMENT, AND DECLARING CERTAIN EQUIPMENT AS SURPLUS AND AUTHORIZING ITS SALE

WHEREAS, in accordance with the Montara Water and Sanitary District's ("District") Capital Improvement Plan, the District requires replacement of the current portable power generator stored at the airport pump station due to its age, condition and failure to meet current air pollution standards; and

WHEREAS, District staff solicited quotes from four (4) companies for the purchase of a replacement 45 KVA/36KW portable generator with an optional smart load bank, and add-on to help reduce annual maintenance cost, and Pac Machine is the lowest responsible bidder; and

WHEREAS, the replacement generator meets the California Portable Equipment Program requirements; and

WHEREAS, in addition to authorization for the purchase of the replacement portable power generator, District staff recommends that the current portable power generator be declared surplus, along with a second generator that was previously replaced, be sold as they are outdated and out of compliance with current air emissions standards.

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF THE MONTARA WATER AND SANITARY DISTRICT, A PUBLIC AGENCY IN THE COUNTY OF SAN MATEO, CALIFORNIA, AS FOLLOWS:

1. The bid of Pac Machine Company in the amount of $46,676.00, with a not-to-exceed the limit of $55,000.00 to cover possible cost increases due to Tariffs and allow for purchase of additional wires and accessories, computed in accordance with said bidder's quote dated April 3, 2025, for the purchase is hereby accepted and said bidder is hereby found and declared to be the lowest responsible bidder for the equipment.

2. The District General Manager is hereby authorized and directed to enter into a purchase agreement with Pac Machine Company in accordance with the above approval.

3. The equipment described on the attached Exhibit "A" is declared surplus to the needs of the District. The District General Manager is instructed to sell said equipment for the best available price or properly dispose of equipment that it is unable to sell.

_____
President, Montara Water and Sanitary District

COUNTERSIGNED:

_____
Secretary, Montara Water and Sanitary District

* * * *

I HEREBY CERTIFY that the foregoing Resolution No. _____ was duly and regularly adopted and passed by the Board of Directors of the Montara Water and Sanitary District, San Mateo County, California, at a regular meeting on May 15, 2025 by the following vote:

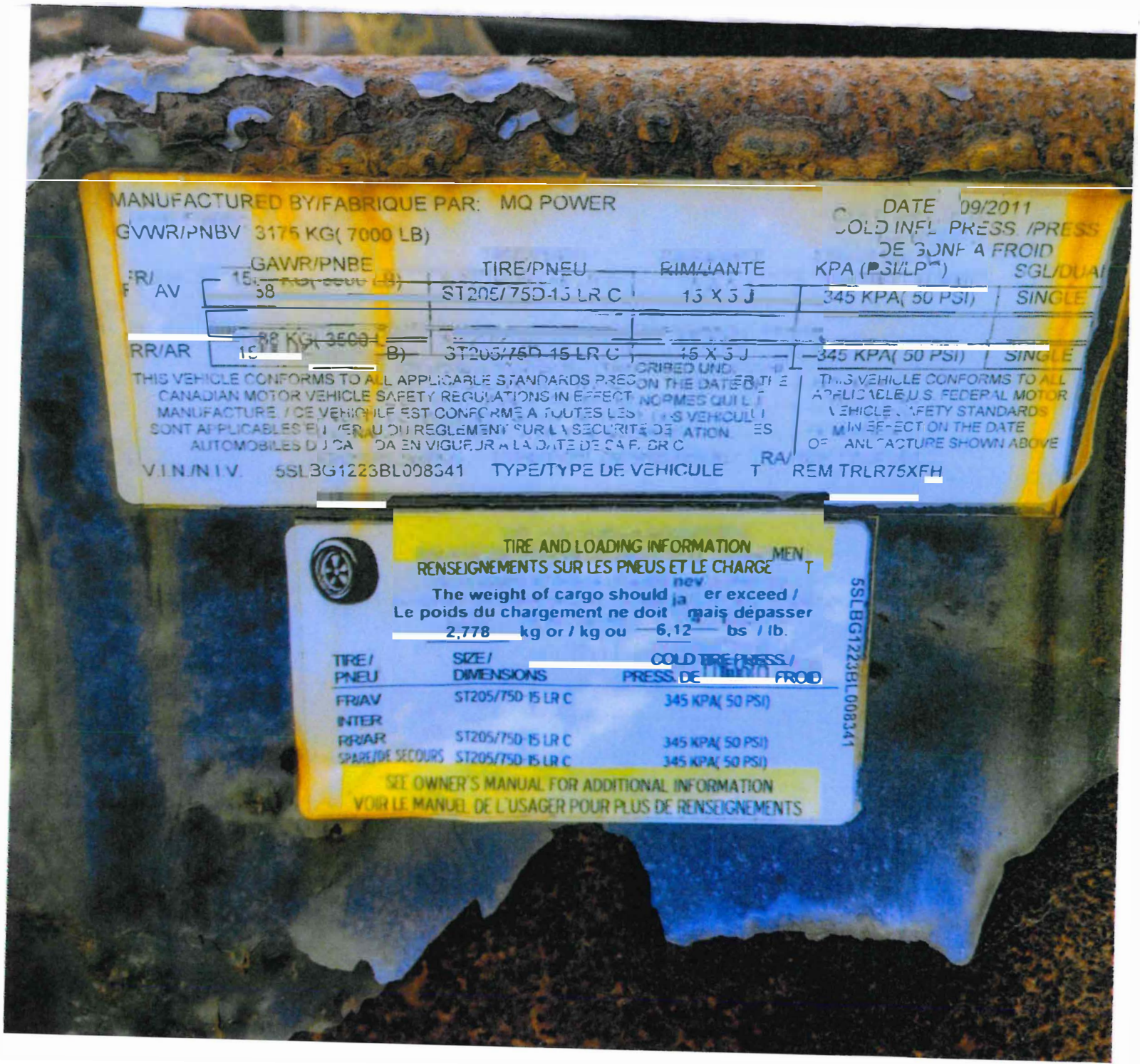
AYES, Directors:

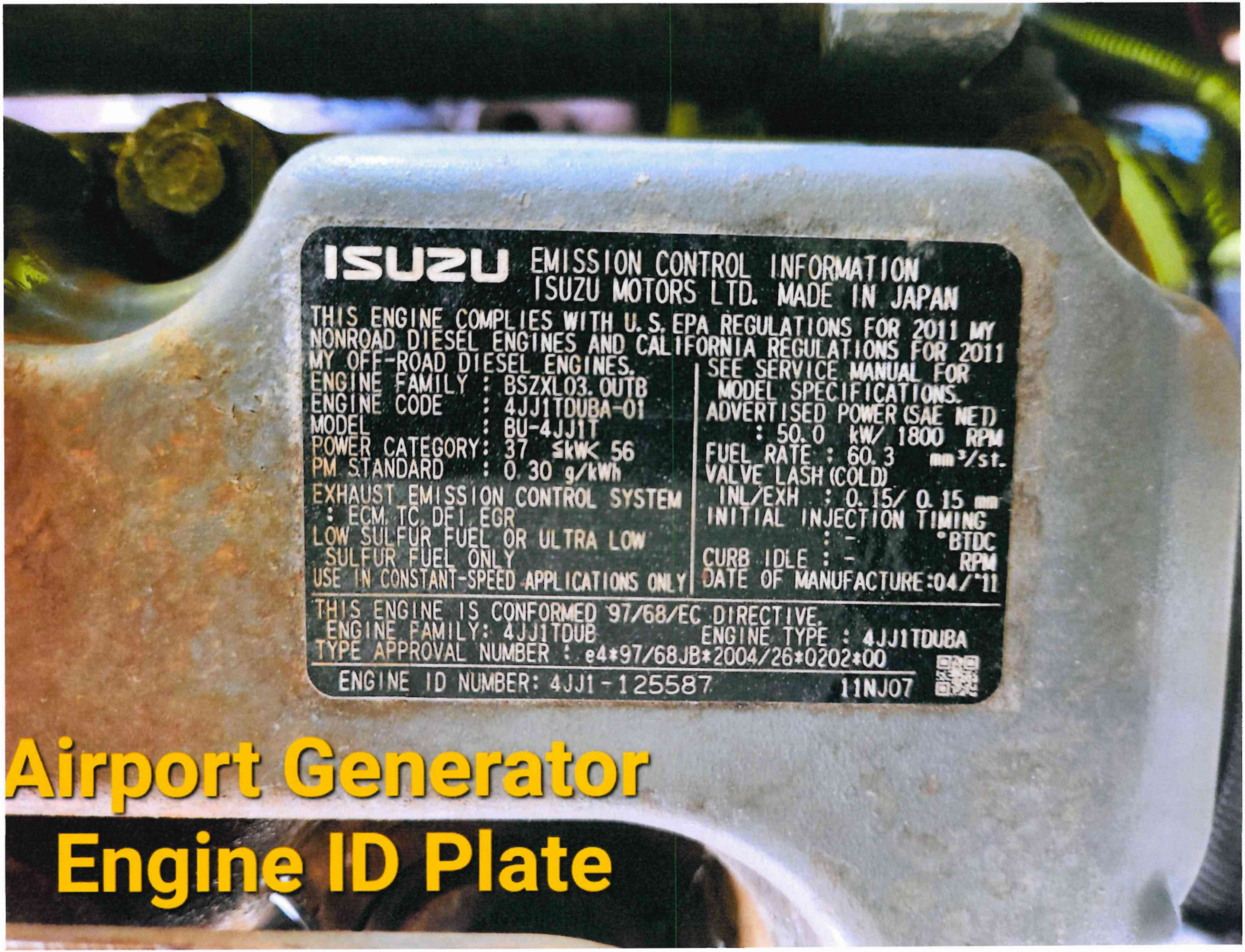
NOES, Directors:

ABSENT, Directors:

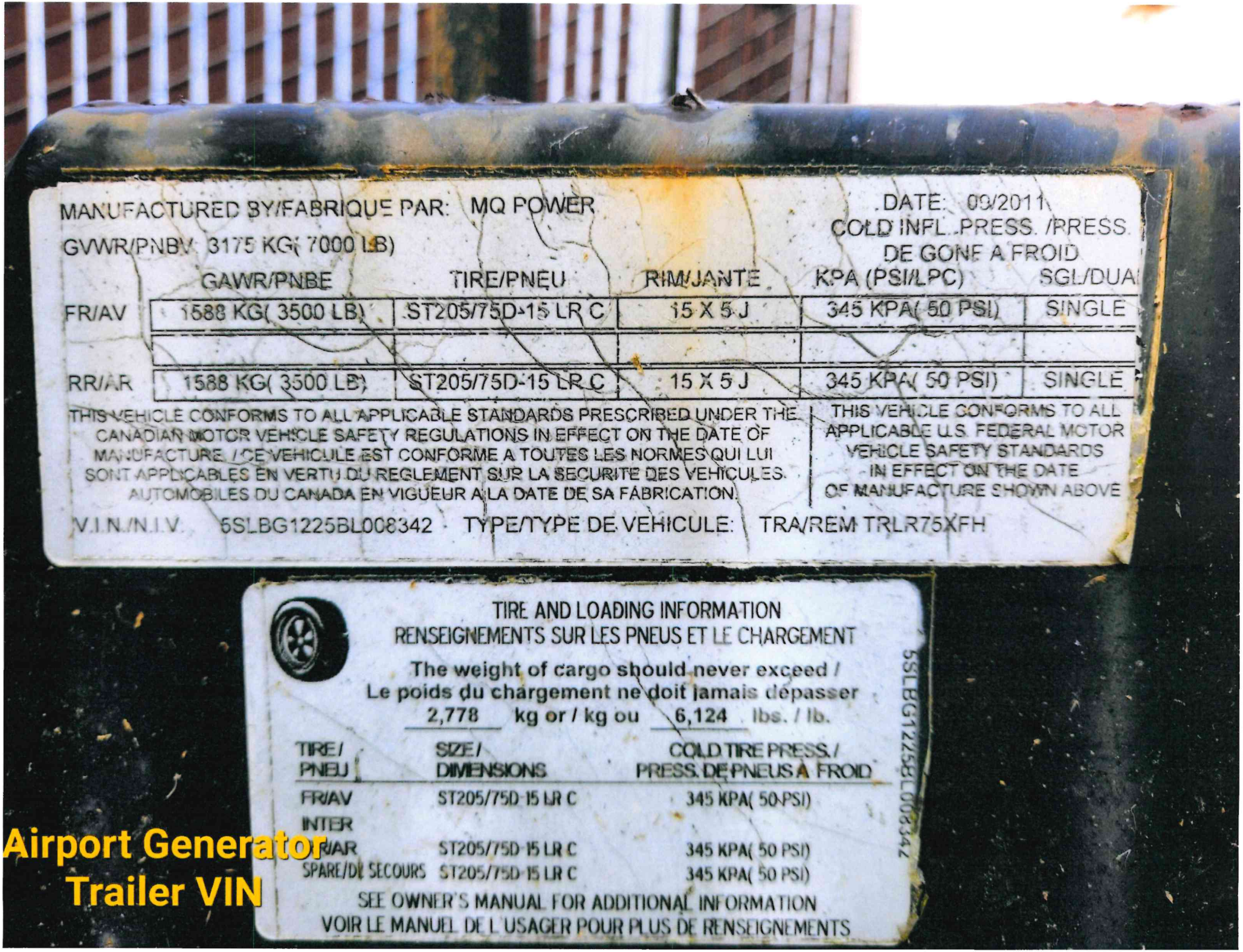
_____
Secretary, Montara Water and Sanitary District

EXHIBIT A

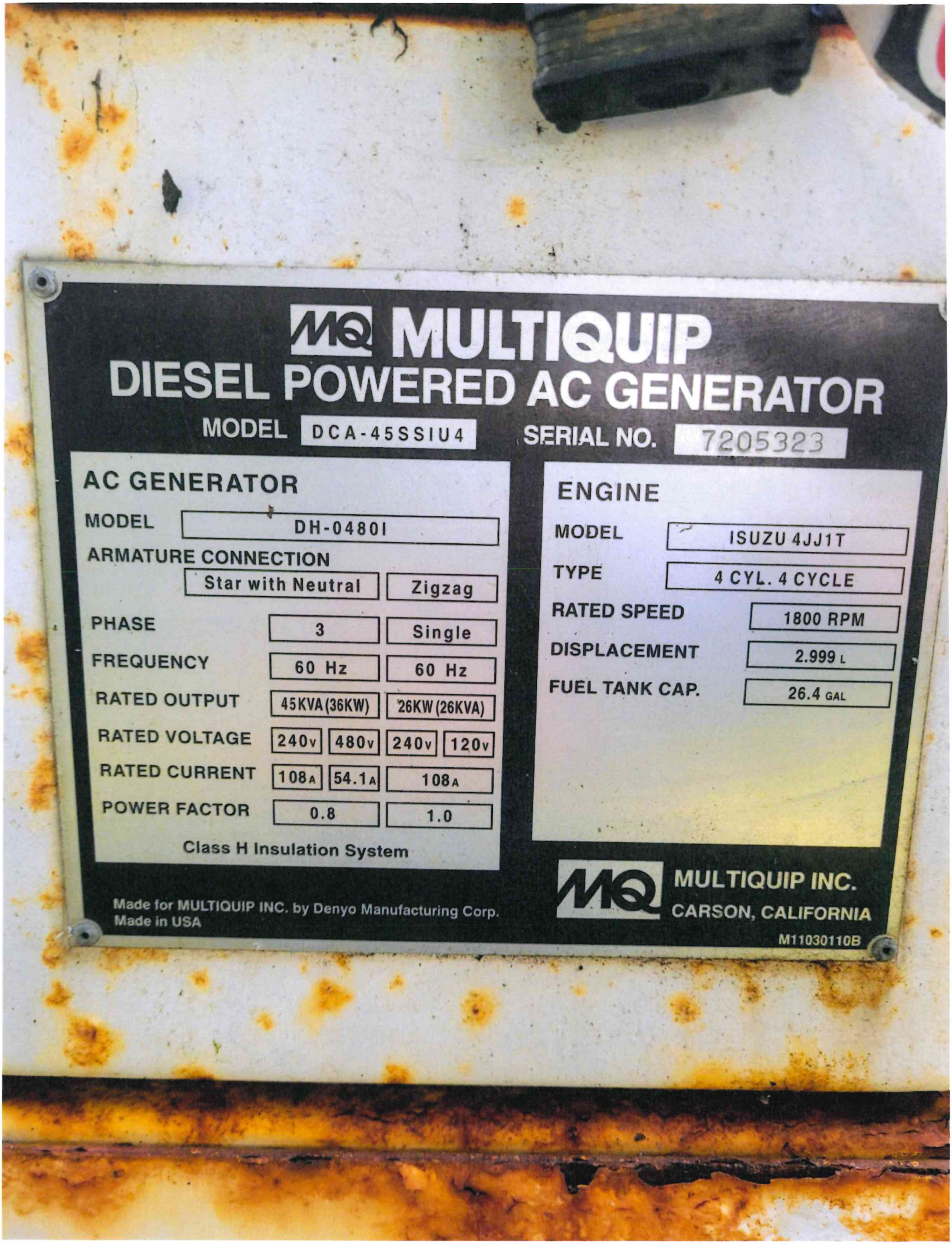

MANUFACTURED BY/FABRIQUE PAR: MQ POWER
DATE 09/2011
GVWR/PNBV 3175 KG(7000 LB)
COLD INFL PRESS /PRESS DE GONF A FROID
GAWR/PNBE
TIRE/PNEU
RIM/JANTE
KPA (PSI/LPC)
SGL/DUAL
FR/AV
ST205/75D-15 LR C
15 X 5 J
345 KPA(50 PSI)
SINGLE
RR/AR
ST205/75D-15 LR C
15 X 5 J
345 KPA(50 PSI)
SINGLE
THIS VEHICLE CONFORMS TO ALL APPLICABLE STANDARDS PRESCRIBED UNDER THE CANADIAN MOTOR VEHICLE SAFETY REGULATIONS IN EFFECT ON THE DATE OF MANUFACTURE / CE VEHICULE EST CONFORME A TOUTES LES NORMES QUI LUI SONT APPLICABLES EN VERTU DU REGLEMENT SUR LA SECURITE DES VEHICULES AUTOMOBILES DU CANADA EN VIGUEUR A LA DATE DE FABRICATION
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE
V.I.N./N.I.V. 5SLBG1223BL008341
TYPE/TYPE DE VEHICULE TRAILER
TRLR75XFH
TIRE AND LOADING INFORMATION
RENSEIGNEMENTS SUR LES PNEUS ET LE CHARGEMENT
The weight of cargo should never exceed / Le poids du chargement ne doit jamais dépasser
2,778 kg or / kg ou 6,120 lbs / lb.
TIRE / PNEU
SIZE / DIMENSIONS
COLD TIRE PRESS / PRESS DE GONF A FROID
FR/AV
ST205/75D-15 LR C
345 KPA(50 PSI)
INTER
RR/AR
ST205/75D-15 LR C
345 KPA(50 PSI)
SPARE/DE SECOURS
ST205/75D-15 LR C
345 KPA(50 PSI)
SEE OWNER'S MANUAL FOR ADDITIONAL INFORMATION
VOIR LE MANUEL DE L'USAGER POUR PLUS DE RENSEIGNEMENTS
5SLBG1223BL008341

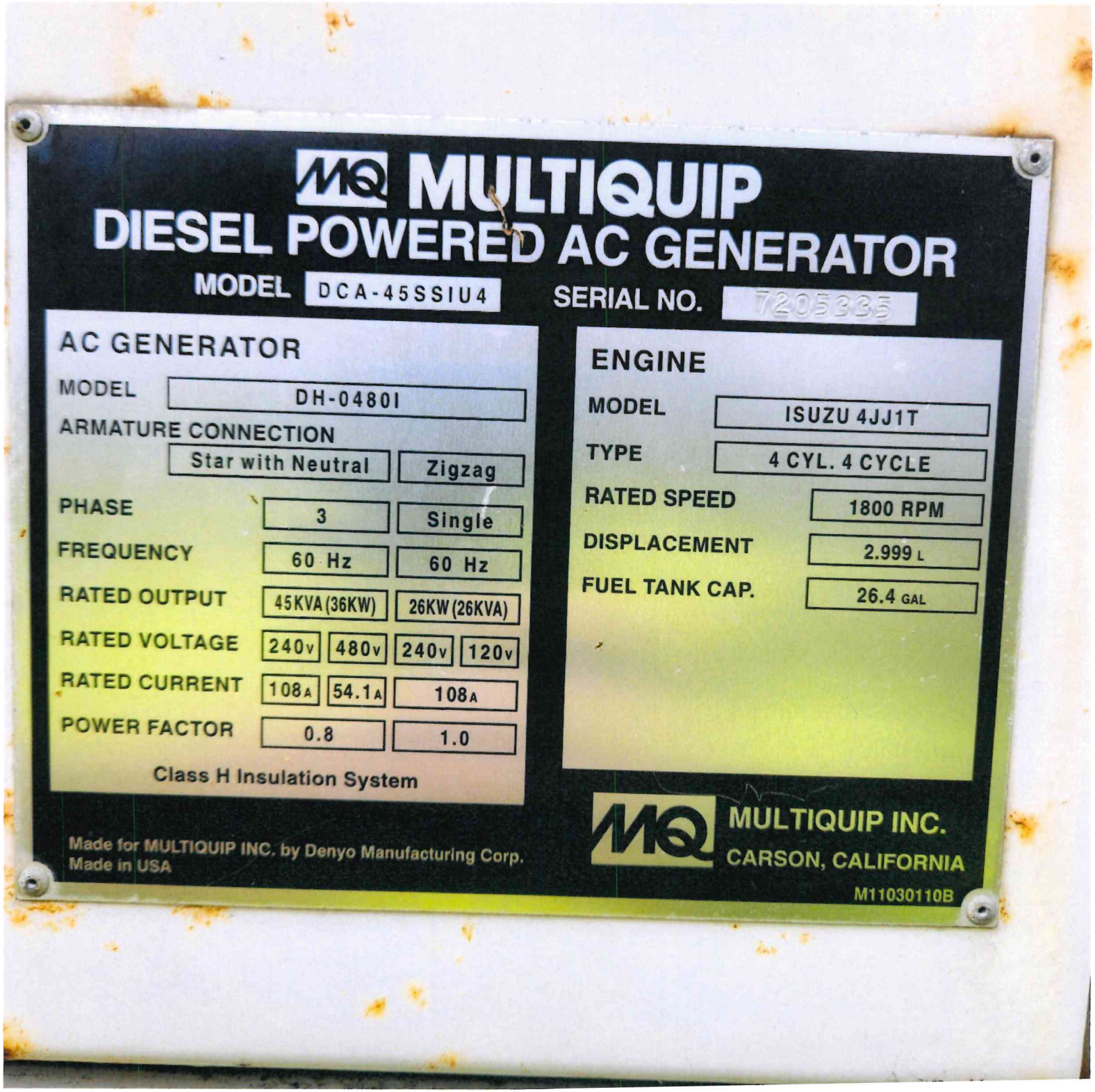


Airport Generator Engine ID Plate



Airport Generator
Trailer VIN


MULTIQUIP
DIESEL POWERED AC GENERATOR
MODEL DCA-45SSIU4
SERIAL NO. 7205323
AC GENERATOR
MODEL DH-0480I
ARMATURE CONNECTION
Star with Neutral
Zigzag
PHASE 3 Single
FREQUENCY 60 Hz 60 Hz
RATED OUTPUT 45KVA(36KW) 26KW(26KVA)
RATED VOLTAGE 240V 480V 240V 120V
RATED CURRENT 108A 54.1A 108A
POWER FACTOR 0.8 1.0
Class H Insulation System
ENGINE
MODEL ISUZU 4JJ1T
TYPE 4 CYL. 4 CYCLE
RATED SPEED 1800 RPM
DISPLACEMENT 2.999 L
FUEL TANK CAP. 26.4 GAL
MULTIQUIP INC.
CARSON, CALIFORNIA
M11030110B
Made for MULTIQUIP INC. by Denyo Manufacturing Corp.
Made in USA


MQ MULTIQUIP
DIESEL POWERED AC GENERATOR
MODEL DCA-45SSIU4
SERIAL NO. 7205335
AC GENERATOR
MODEL DH-0480I
ARMATURE CONNECTION
Star with Neutral
Zigzag
PHASE 3 Single
FREQUENCY 60 Hz 60 Hz
RATED OUTPUT 45KVA(36KW) 26KW(26KVA)
RATED VOLTAGE 240V 480V 240V 120V
RATED CURRENT 108A 54.1A 108A
POWER FACTOR 0.8 1.0
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FUEL TANK CAP. 26.4 GAL
Made for MULTIQUIP INC. by Denyo Manufacturing Corp.
Made in USA
MQ MULTIQUIP INC.
CARSON, CALIFORNIA
M11030110B

ENERGY SYSTEMS

CALIFORNIA PORTABLE EQUIPMENT REGISTRATION PROGRAM REQUIREMENTS

PERP REGISTRATION ELIGIBILITY

Portable generator engines rated >50 bhp (~35kW) may be registered through CARB's Portable Equipment Registration Program (PERP) if the equipment meets PERP emissions and operational requirements. If the generator does not meet all requirements, a stationary source permit may be required by the regional air district.

Engine Emissions Standards:

Diesel Engines	50 to <750 BHP	Tier 4 Final, Tier 4 Interim Flex, or Tier 3 Flex for nonroad/offroad use
	>750 BHP	Tier 4 Final, Tier 4 Interim Flex, or Tier 2 Flex for nonroad/offroad use
Gaseous Engines	All BHP Ratings	EPA *or* CARB certification for nonroad/offroad use

Operational Requirements:

- Generator must not reside at one location for more than 12 consecutive months.
- Generator must be trailer mounted or otherwise physically portable (may not be attached to a foundation).
- Generator may not be used for power production into the grid except to maintain grid stability during an emergency event, or other unforeseen event that affects grid stability.
- The generator cannot be the primary or supplemental power source for a building or other equipment, except during interruptions of the primary power source, maintenance/repair operations, or electrical upgrade operations that exceed 60-90 calendar days.

**If PERP-registered equipment will be onsite for more than 60—90 calendar days for planned maintenance/repair operations or electrical upgrades, the regional air district may require a stationary source permit. Please inquire with the local AQMD about specific requirements.*

PERP REGISTRATION REQUIREMENTS

1. **Complete a PERP Registration Application, which includes:**

PERP Form 1	Company Information Form (Required)
PERP Form 2	Application for a Compression-Ignition (Diesel) Portable Engine Registration, *or*
PERP Form 3	Application for a Spark-Ignition (Gaseous) Engine Registration
PERP Form 6	Application for an Optional Temporary PERP Registration (Optional) *Note: Form 6 is optional but recommended. CARB will issue a temporary registration placard, in addition to the regular registration placard. No additional fees apply.*
Photos of Engine Label(s)	Photos must show: 1. Engine Model 2. Engine Serial Number 3. Engine EPA Family *Note: For certain engine models, this information is on two separate engine tags. CARB requires photos showing all three items to process the registration.*
PERP Forms: https://ww2.arb.ca.gov/resources/documents/perp-application-record-keeping-reporting-forms	

Update Date: 1/17/25

ENERGY SYSTEMS

CALIFORNIA PORTABLE EQUIPMENT REGISTRATION PROGRAM REQUIREMENTS

PERP REGISTRATION REQUIREMENTS (CONTINUED)

2. **Mail a hard copy of the complete PERP application to:**

   California Air Resources Board
   Portable Equipment Registration Program
   P.O. Box 2038
   Sacramento, CA 95812

3. **Submit PERP fees once invoiced by CARB**:
   - Once the application is received by CARB, an invoice for applicable fees will be mailed to the mailing address listed on Form 1.
   - PERP Fees:
     - Registration Fee: $805 per engine*
     - Renewal Fee: $735
     - Change of Ownership Fee: $110

   **Discounts may apply for 4 or more engines. Initial registration fees cover 3 years of operation.*

4. **Receive PERP registration placard and maintain with generator.** Renew registration every three (3) years prior to permit expiration date.

Timeframe for PERP Registration Issuance:

- **Temporary PERP Registration:** 15-30 days. *The temporary registration form will allow operation of the unit until the regular PERP placard is issued.*
- **Regular PERP Registration:** 60 – 90 days

Reference: https://ww2.arb.ca.gov/our-work/programs/portable-equipment-registration-program-perp

ENERGY SYSTEMS

CALIFORNIA PORTABLE EQUIPMENT REGISTRATION PROGRAM REQUIREMENTS

DMV REGISTRATION REQUIREMENTS

Portable, trailer mounted generators must have the trailer registered with the California Department of Motor Vehicles (DMV). Below are instructions to complete DMV trailer registration:

1. **Complete the Special Equipment (SE) Application, which includes:**

DMV Form 88	Application for Special Equipment Identification Plate
Photos of Equipment	Photos (not to exceed 8.5”x11”) must show: 1. Generator unit, including trailer 2. VIN number
DMV SE Fees	$32. Fees cover five (5) years of operation
DMV Form: https://www.dmv.ca.gov/portal/file/application-for-special-equipment-identification-plate-reg-88-pdf/	

2. **Submit application to a local DMV office in person or mail to:**

   Department of Motor Vehicles
   P.O. Box 242869
   Sacramento, CA 94269-0001

   For expedited processing, it is recommended to submit the application in person at a local DMV office.

3. **Receive DMV SE ID Plate and maintain with generator.** Renew registration every five (5) years prior to permit expiration date.

Reference: https://www.dmv.ca.gov/portal/driver-education-and-safety/educational-materials/fast-facts/special-equipment-registration-ffvr-19/

Update Date: 1/17/25

Energy Systems offers air permitting and consulting services. If you or your customer requires an air permit for this project, Energy Systems can provide a quote for permitting services upon request.

Leadtimes:

Estimated lead time from factory, excluding transit: 4-8 weeks after release of order.
Manufacturer lead time to be confirmed upon approved release for production notification
Estimated Submittal Lead time: 5-7 business days.

Shipping:

Incoterms: ExWorks factory with freight allowed to the jobsite, on a truck, curbside.

Specifications

This quote is based on our understanding of your verbal specifications which are documented in our quotation. These specifications may or may not meet all jobsite requirements.

Initial Start & Test. Not required see price adder.

Upon completion of installation by others, Start & Test will be performed by Energy Systems during normal business hours of 8:00a.m. to 4:00p.m. Monday through Friday. Fuel for testing and filling is not included. (Start & Test outside normal business hours will be invoiced as necessary).

1. One Start & Test service call to the jobsite is included. Additional trips due to jobsite conditions beyond our control will be invoiced as necessary.
2. Start & Test Load testing will be conducted using building load (load bank) for 2 hours.

Scope Clarifications:

- No equipment will be ordered without written release to proceed – price changes issued by the manufacturer after quotation validity and prior to release will be passed along to the customer.
- Pricing includes freight to site, offloading by others.
- If transfer switch needs to be shipped separately, additional freight charges will apply.
- Pricing for adders purchased separately from equipment will be assessed at time of purchase.
- Installation and mounting of exhaust not included.
- The Energy Systems provided start-up checklist and supporting pictures must be received by Supplier two weeks prior to technician scheduling.
- All industrial products require a formal start up by a Generac factory certified technician.
- Pricing is based on work being completed during regular business hours.
- Load bank (if included) is resistive load unless otherwise noted.
- Training to be completed same day as start up. Additional charges will apply if a separate trip is required.
- Enclosure color is Generac Industrial grey. Custom colors can be quoted separately.
- Not included unless otherwise noted: equipment offloading, installation, fuel, permits, signage, taxes, exhaust system backpressure test, exhaust emissions test, infrared scanning, NETA testing, harmonic testing, concrete pad, anchoring, fuel pipe, exhaust pipe, pipe insulation, Building communication integration, license fees.

Validity of the Quote

This quote is valid for 30 days following the quote date. This quote may be modified and/or rescinded by Energy Systems at its sole discretion unless and until accepted on or before the quote date.

Credit

Credit is subject to Energy Systems approval at its sole discretion. This quote in no way constitutes approval of credit.

Terms and Conditions:

Payment terms: With credit account.
10% deposit due at time of order, balance invoiced at shipment with NET 30 (1 ½% per month will be charged on past due accounts).
Partial shipments will be invoiced proportional to total quoted price, payable 30 days after shipment.
All purchase orders must be acknowledged in writing by Energy Systems to be deemed accepted.
Purchase orders which are issued with a hold for release date are subject to re-evaluation at the time of release.

Storage fees may be assessed if your job site is not able to accept delivery on the requested date.

Other Terms and Conditions:

1. Equipment cannot be held by Energy Systems or its suppliers without prior written agreement.
2. Any sale of goods or services, and any extension of credit, is governed by and subject to West Coast Energy Systems' Terms and Conditions of Sales and Service ("Terms") located at https://energysystems.com/terms-and-conditions-of-sale-and-service/ which is incorporated by reference. The Terms are subject to change at any time and you are advised to frequently re-review the Terms. Unless pursuant to a written agreement mutually executed by both parties, the Terms shall be binding upon the parties, and any other terms, communications or documents are to be disregarded and hereby expressly rejected.

Sincerely,

Nick Padilla
West Coast Energy Systems
(209)-292-1385

Accepted By:_____

Customer P.O.:_____Date:_____

MWSD

Airport Pump Station Portable Generator Replacement

Portable Generator Quotes

5/8/2025

Company	Generator Brand	Generator size option	Delivery time	Days quote good*	Price Including Tax and Delivery *	Note
Pac Machine	Airman	45KVA/36 KW	2-3 wks	30 Days	**$46,676.00**	Includes Smart Load Bank , $5K.
ES Energy Systems	Generac Ind En.	45KVA/36KW	2-3 wks	30 Days	$47,111.48	Smarl Load $4.5K extra
Herc Rentals/Sales	MultiQuip	45KVA/36KW	5-7 wks	30 Days	$60,912.02	Smarl Load $4.5K extra
Peterson Power	Caterpillar					No Response by deadline of 4/15/2025

* Tariffs: Prices Subject to Change

Pac Machine Company

SACRAMENTO, BENICIA, CA
SPARKS, NV

From: David Kesich
Pac Machine Company
5326 Gateway Plaza Dr
Benicia, CA 94510
Phone: (707) 746-4940
Fax: (707) 746-1845
dave@pacmachine.com

To: Pippen Cavagnaro
Of: Nute Engineering
Email: pippin.c@nute-engr.com
Phone: 415-453-4480 x203
Re: Airman SDG45 Genset
Date: April 3, 2025

Per your request we're pleased to quote the following Airman SDG45-T4F Trailer Mounted Generator Set.

Qty	Description	Price Each	Amount
1	Airman SDG45 Diesel Generator 48.5 kVA/ 38.8 kW, Including: Isuzu 4LE2X, T4F Diesel Engine Duel Axel Trailer with Enclosure & Electric Brakes LED Trailer Lights and Wheel Chocks Battery Charger & Switchable Voltage Rated: 61dBA @ Genset:2YR/ 2,000HRS, Engine 2YR/ 2,000HRS	$39,995.00	$39,995.00
	Options:		
1	Smartload (Loadbank): *	$4,995.00	$4,995.00
1	Camlock Single Row (BLK WHT RD BLU GRN KIT)	$686.00	$686.00
1	Freight to Montara, CA:	$1,000.00	$1,000.00
	Delivery: Currently 2-3 weeks. Specifications attached. FOB: Factory *** The Smart Load is maintenance equipment to keep the genset in a reliable state.**		
		Total:	$46,676.00

Prices subject to change due to potential tariffs.

Please Call with any questions.

Regards,

AIRMAN®
MOBILE GENERATORS

ANA

SDG45

45 kVA PRIME POWER

Shown equipped with optional
SMARTLOAD™
LOAD BANK SYSTEM

PERFORMANCE //

1 - DSE® Digital Control Panel
2 - Curbside Electrical Panel
3 - Large Electrical Lugs
4 - Emergency Stop Button
5 - Delta Demand Excitation™
6 - QuieTech™ Sound Attenuation
7 - Lockable Voltage Selector

MAINTENANCE //

8 - Lift-off Door Hinges
9 - Ext. Fuel Tank Connections
10 - 110% Fluid Containment
11 - Service Extensions
12 - Fuel & Containment Drains
13 - Removable Trailer Fenders

CONSTRUCTION //

14 - Powder-coated Steel Enclosure
15 - Stainless Steel Hardware
16 - Lockable Access Doors
17 - Automotive Door Seals
18 - 80.5 Gallon Fuel Tank
19 - Heavy-Duty Steel Trailer with Lockable Storage

AIRMAN® GENERATORS 4 TIER4F TIER 4 FINAL

Isuzu®4LE2X
Tier 4 / CARB
Diesel Engine

1 | DSEGenset® Digital Control Panel
Model 7310 MKII

2 | Single-Phase Receptacles
120V - 20A x 2 | 240V - 50A x 3
Optional Single Row Cam-Loks™ Shown

7 | Lockable Voltage Selector Switch
3Φ 277/480V & 139/240V-120/208V
1Φ 120/240V

9 | External Fuel Tank Connections
with 3-Way Selection Valve

BEST-IN-CLASS dBA RATING // 24-HOUR RUNTIME // EXCELLENT MOTOR STARTING

THE INDUSTRY'S HIGHEST-QUALITY MOBILE GENERATORS

GENERATOR MODEL SDG45S-8E2

RUN WITH AIRMAN®

GENERATOR SPECIFICATIONS	SDG45S-8E2
ALTERNATOR TYPE	AIRMAN WYE Winding
STANDBY OUTPUT	
THREE-PHASE AT 240V 3CD-4 WIRE	48.5 kVA / 38.8 kW
SINGLE-PHASE AT 240V 1CD-3 WIRE	28 kVA / 28 kW
PRIME OUTPUT	
THREE-PHASE AT 240V 3CD-4 WIRE	45 kVA / 36 kW
SINGLE-PHASE AT 240V 1CD-3 WIRE	26 kVA / 26 kW
FREQUENCY	60 Hz
VOLTAGE (THREE-PHASE), SWITCHABLE	208/220/240/416/440/480
VOLTAGE (SINGLE-PHASE), SWITCHABLE	120/127/139/240/254/277
ARMATURE CONNECTION	Star with Neutral / Zig Zag
EXCITATION	Brushless with AVR
NUMBER OF POLES	4
POWER FACTOR (THREE-PHASE)	0.8
POWER FACTOR (SINGLE-PHASE)	1.0
INSULATION	Class F
VOLTAGE REGULATION	±0.5%
FREQUENCY REGULATION, STEADY STATE	±0.25% of Overall Mean Value
AMPERAGE	
SINGLE-PHASE (120V) - ZIG ZAG	108A x 2
SINGLE-PHASE (240V) - ZIG ZAG	108A
THREE-PHASE (208V)	119A
THREE-PHASE (240V)	108A
THREE-PHASE (480V)	54A
ENGINE MAKE & MODEL	**ISUZU® 4LE2X**
ENGINE CONTROL PANEL	DSE® 7310 MKII
EPA TIER 4 / CARB EMISSION CERTIFIED 2021	CARB Exec. Order U-R-006-0491 EPA Cert. No. MSZXL02.2PXB-004
TYPE OF AFTERTREATMENT	Diesel Oxidation Catalyst (DOC)
ENGINE TYPE	Electronic Direct Injection 4-Cycle Liquid Cooled Diesel
ASPIRATION	Turbocharged + Turbo After Cooler

ENGINE MAKE & MODEL (Continued)	ISUZU® 4LE2X
SAE GROSS HP / BHP@1800 RPM	65.7 BHP / 49 kW
HORSEPOWER RATING (@1800 RPM)	57.7 HP / 43 kW
NUMBER OF CYLINDERS	4
DISPLACEMENT	133 cu in
ENGINE SPEED	1800 RPM
GOVERNOR TYPE	Electronic
FUEL TYPE	Ultra-low sulfer diesel
DEF CAPACITY	N/A
DEF CONSUMPTION (MAXIMUM)	N/A
DEF RUNTIME @ FULL LOAD	N/A
FUEL TANK CAPACITY	80.5 gal
FUEL CONSUMPTION	
FULL LOAD	2.8 gal/hr
75% LOAD	2.1 gal/hr
50% LOAD	1.5 gal/hr
RUNTIME @ FULL LOAD	28.75 hrs
FUEL PUMP (w/INTEGRAL FILTER)	Self-priming Electric Fuel Pump
FUEL FILTER TYPE / QUANTITY	Combination, Water Separator Fuel Filter x 1
LUBRICATING OIL CAPACITY	3.1 gal
BATTERY	
SYSTEM VOLTAGE	12V
BATTERY CHARGER ALTERNATOR	35 A
QUANTITY	1
COLD CRANKING AMPS	490 CCA
AMP HOURS	70 Ah
COOLING SYSTEM	
COOLING SYSTEM TYPE	Liquid/Air Fin and Tube Radiator, 50/50 Mix
COOLANT CAPACITY	2.5 gal
WATER PUMP TYPE	Impeller
FAN TYPE	Belt-driven Pusher
NOISE LEVEL @ 23 FEET (NO/FULL LOAD)	57 dBA / 61 dBA

ENCLOSURE	
PAINT TYPE	Positively Charged Ion (E-coat) Electrodeposition Coating, Baking Finish Coating for Weatherproof, and Anti-corrosion and Salt Pollution
ENCLOSURE METAL / CONSTRUCTION	Steel
GAUGE STEEL	16 Gauge
DOOR HINGES	Stainless Steel
SERVICE ACCESS POINTS HARDWARE	Stainless Steel
SPILL CONTAINMENT	110%
WEIGHTS & DIMENSIONS	
LENGTH x WIDTH x HEIGHT	74.8" x 38.2" x 61.4"
DRY WEIGHT	2,954 lbs
OPERATING WEIGHT	3,337 lbs
TRAILER WEIGHT	1,182 lbs
OPERATING WEIGHT w/TRAILER (GVWR)	4,519 lbs
TRAILER WEIGHTS & DIMENSIONS	
LENGTH	144"
WIDTH	70"
HEIGHT W/GENERATOR INSTALLED	73"
WEIGHT	1,182 lbs
WHEEL SIZE-TIRE RATING	ST205/75R15 Load Limit C-1820 lbs @ 50 psi
NUMBER OF AXLES / RATING	2 Axles / 3,700 lbs each
BRAKING TYPE	Surge or Electric
LIGHTING TYPE	LED
CERTIFICATIONS USA/DOT COMPLIANT	FMVSS
ADJUSTABLE HITCH HEIGHT	Yes
COMPLIANCE & CERTIFICATIONS	
FLUID CONTAINMENT	110%
USA DOT COMPLIANT	Yes
CSA LISTED	Yes
TRANSPORT CANADA COMPLIANT	Yes
DIESEL ENGINE EPA TIER LEVEL	Tier 4 Final

All specifications are subject to change without prior notice. Visit **anacorp.com** for the most current information.

SMARTLOAD™ LOAD BANK SYSTEM

– U.S. PATENT PENDING –

SmartLoad™ System

Lock. Battery Disconnect

ACCESSORIES & OPTIONS

- SmartLoad™ System
- Lockable Battery Disconnect
- Single Row Cam-Loks™ (See Front)
- 4-Position Selector Switch
- Engine Block Heater
- Fuel Filter Heater
- Engine Coolant Heater
- Battery Charger
- Battery Blanket
- 600V
- CSA Certification
- 5-Yr./7,000-Hr. Ext. Warranty

BUMPER TO BUMPER 1 YEAR 1500 HOUR WARRANTY

ALTERNATOR 2 YEAR 2000 HOUR WARRANTY

FULL ENGINE 2 YEAR 2000 HOUR WARRANTY

PAC MACHINE CO., INC.

SACRAMENTO, CA	FAX (916) 387-1380	(916) 387-1336
BENICIA	FAX (707) 746-1845	(707) 746-4940
SPARKS, NV	FAX (775) 359-0818	(775) 359-8500

ANA N. California
1315 Vinci Avenue
Sacramento, CA 95838

ANA South Carolina
1335 Hayne Street
Spartanburg, SC 29301

ANA Texas
10440 Brockwood Road
Dallas, TX 75338

Alliance North America, Inc.
Corporate Headquarters
11100 Hope Street, Cypress, CA 90630

ANACORP.COM
(562) 450-3570 // sales@anacorp.com

ANA
We make your world easier.

Date: 4/10/2025

To: Nute Engineering

Attn: Pippen Cavagnaro P.E.

Reference: 245MMG Generac Mobile Generator

Energy Systems is pleased to offer the following proposal:

Scope of Supply:

Quantity 1 - Generac Mobile diesel engine-driven generator set MMG45IF4, consisting of the following features and accessories:

- 45kVA (36kW) Rating (Prime)
- Prime Duty Power rating
- 4-Position Voltage Changeover Switch
  - 480V Three Phase
  - 208V Three Phase
  - 240V Three Phase
  - 240V Single Phase
- Isuzu 4LE2XAGV01 Engine
  - Turbocharged/Aftercooled
  - EPA Final Tier 4 Approved
- Digital Controls
- Single Axle Trailer
- Surge Brakes
- 2 in. BALL
- Fuel Tank - Single Wall, 106 Gallon
- 720 CCA Wet Cell Battery
- 10 Amp Battery Charger
- Control Panel Light
- Interior Cabinet Light
- CSA
- Fluid Containment
- Block Heater
- Standard Engine Cooling Fan
- Battery Disconnect
- Engine Coolant, 50% Ethylene Glycol/50% Water
- MMG45IF4

Generator Pricing	**$ 40,424.00**
8.25% Sales Tax.....	**$ 3087.48**
Start Up & Training (Not Required).....	**$ 3600.00**

SALES TAX IS NOT INCLUDED

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

Standby Power Rating
44 kW, 55 kVA, 60 Hz

Prime Power Rating
38 kW, 47 kVA, 60 Hz

USA ENGINEERED & BUILT*
*Assembled in the USA using domestic and foreign parts

Picture shown may not reflect actual configuration.

Codes and Standards

Generac Mobile products are designed to the following standards:

CSA

NATM

TIER 4 FINAL EMISSIONS

Power When You and Where You Need It

Generac Mobile generators are designed and engineered to power a variety of projects, in the most extreme environments. Gensets are configured to meet customer needs, including choice of containment, cold weather packages, trailer options, and more.

Generac Mobile generators are manufactured to deliver reliable power, when and where you need it.

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

GENERAC | MOBILE

STANDARD FEATURES

ENGINE SYSTEM
- Isuzu® 4LE2XAGV01
- 4 cylinder
- Turbocharged & Aftercooled
- 134 in^3 (2.2 L) Displacement
- EPA Tier 4 Final
- Power @ 1,800 RPM -hp (kW):
  - Prime: 57 (42.8)
  - Standby: 63.7 (47.5)
- Paper Element Air Filter
- Electronic Isochronous Governing
- Fixed Speed Fan
- Spin On Cartridge Oil Filter
- Oil Drain Extension
- Two Fuel Filters
- One 12 V, 720 CCA, Wet Cell Battery

COOLING SYSTEM
- Capable of Operating at 120 °F (49 °C) Ambient
- 50/50 Coolant (50% Ethylene Glycol)
- Coolant Drain Extension

FUEL SYSTEM
- Polyethylene Fuel Tank
- Fuel Tank Capacity — US gal (L):
  - Total: 100 (379)
  - Usable: 90 (341)

WARRANTY
- 2 year limited or 2,000 hours
  - Unlimited hours covered in first year
- Maximum Runtime @ 75% load: 36 hr
- 110% Containment - engine fluid (oil & coolant) and fuel
- Padlockable Fuel Cap

CONTROL SYSTEM
- Deep Sea Electronics® 7310 MKII Controller
- 3-Position Voltage Selection Switch
- 225 A Main Circuit Breaker (MCB), Manual, with Shunt Trip
- Individual Convenience Receptacle Circuit Breakers
- Emergency Stop Switch
- Battery Disconnect Switch, Padlockable
- Remote 2-wire Start/Stop Contacts

ALTERNATOR SYSTEM
- 60 Hz Engine-Driven Alternator
- SUPERSTART Alternator
  - Brushless
  - 4 Pole
  - 2/3 pitch
  - Class H insulation
  - Corrosion Protection
- Marathon Electric® PM500 AVR
- Shunt Excitation System

POWER DISTRIBUTION
- Connection Lugs
- Convenience Receptacles
  - Two 120 V, 20 A, GFCI Duplex (NEMA 5-20R)
  - Three 120/240 V, 50 A, 3 Pole, 4 Wire Twist-lock (CS6369)

ENCLOSURE
- Aluminum, Sound Attenuated Enclosure, Insulated and Baffled
- UV and Fade Resistant, High Temperature Cured, White Polyester Powder Paint
- Central Lifting Point
- Fully Lockable Enclosure
- Multi Lingual Operating and Safety Decals
- Document Holder with Owner's Manual - includes AC and DC wiring diagrams
- Control Panel Lights
- Interior Lights

TRAILER
- Hydraulic Surge Brakes
- 2 in. (50.8 mm) Ball Hitch
- Single 6,000 lb (2,722 kg) Axle
- Tires: ST225/75, 15 in. Rim
- 2,000 lb. (907 kg) Tongue Jack with Footplate
- Safety Chains with Spring Loaded Safety Hooks
- Transportation Tie Downs
- Plug Adapter, Round 7 Spade (SAE J2863)
- DOT Approved Tail, Side, Brake, and Directional Lights

CONTROL SYSTEM

Deep Sea Electronics CONTROLLER AND DISPLAY
- Model DSE7310 MKII
- 4 Line Back Lit LCD Text Display
- -40 to 158 °F (-40 to 70 °C) Operating Temperature Range
- Multiple Language Options
- Configurable Timers and Alarms
- Configurable Start/Stop Timers
- Configurable Maintenance Alarms
- Heated Display

PUSH BUTTONS FOR EASY OPERATION
- Manual or Auto Start
- Engine Start
- Engine Stop/Reset
- User Friendly Setup and Button Layout
- Five Key Menu Navigation
- Multiple Parameters are Monitored and Displayed Simultaneously for Full Visibility
- View Controller Parameters (Configuration, Firmware Version, Connections

ELECTRICAL CONTROLS
- Lockable Control Box Door with Diagnostics Window
- Lockable lug box with safety switch
  - Trips main breaker when door is opened
  - Disables voltage regulator
- Output ground connection lug inside lug box
- Voltage adjustment ±10%

LCD ALARM INDICATION
- Generator Diagnostic Display
  - System kVA Output Display
  - Line Output and Frequency Display
- Alarm Types: Warning, Shutdown, Electrical Trip, Engine
- Alarm List – Warnings/Shutdowns; 250 Event History Log – Date/Time Stamped
  - Fuel Level: Warning – 15%; Shutdown – 5%
  - Overspeed Protection: Shutdown – 110%
  - Engine Diagnostic Warnings Communicated Through J1939 CANbus
  - Battery Voltage: Over – 15 VDC; Under – 11 VDC
  - Generator Over Voltage: Warning – 110%; Electrical Trip – 115%
  - Generator Under Voltage: Warning – 90%; Shutdown – 85%
  - Generator Over Frequency: Warning – 105%; Electrical Trip – 110%
  - Generator Under Frequency: Warning – 95%; Electrical Trip – 90%
- Auto Schedule
- Status

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

CONFIGURABLE OPTIONS*

ENGINE SYSTEM
- Positive Air Shutdown (PAS), Electronic
- One 12 V, 720 CCA AGM Optima Battery
- Alternate Load Device (ALD)
- Oil Evacuation System - requires customer-sourced, specialized equipment to use for oil change

COLD WEATHER
- Engine Block Heater
- Two Heated Fuel Filters
- Crankcase Ventilation (CCV) System Heater
- 10 A Battery Charger
- 60/40 Coolant (60% Ethylene Glycol)

CONTROL SYSTEM
- 4-Position Voltage Selection Switch
- Telemetry
- Lojack Equipment Recovery System

FUEL SYSTEM
- Steel Fuel Tank, Extended Runtime
- Fuel Tank Capacity— US gal (L)
  - Total: 160 (606)
  - Usable: 144 (545)
- Runtime @ 75% Load: 57.5 hr
- Auxiliary Fuel Tank Connection
  - 3-Way Fuel Valve

ALTERNATOR SYSTEM
- VFLEX (600 V) Alternator
- Marathon Electric® DVR2400 DVR
- Permanent Magnet Generator (PMG) Excitation System

POWER DISTRIBUTION
- Camlocks—one set, female (US or Canada color code)
- Buck Transformer

ENCLOSURE
- Fire Extinguisher

TRAILER
- Skid Mount (Non-trailer)
- Electric Brakes
- Tandem Axle
- 2 in (50.8 mm) BULLDOG® Hitch
- 2-5/16 in (58.7 mm) BULLDOG Hitch
- 3 in (76.2 mm) Pintile Ring Hitch
- Rear Stabilizer Jacks
- Toolbox Aluminum, 49 x 15 x 18.5 in. (125 x 38 x 47 cm)
- Spare Tire

RATING DEFINITIONS

Standby: Applicable to varying emergency load for the duration of a utility power outage.

Prime: Applicable to supplying power to a varying load in lieu of utility for an unlimited amount of running time.

*Consult factory for availability

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

GENERAC | MOBILE

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make (Model)	Isuzu (4LE2XAGV01)
EPA Emissions Compliance	Tier 4 Final
After Treatment System	DOC
Cylinder #	4
Type	In-line
Displacement: in^3 (L)	134 (2.2)
Bore: in (mm)	3.35 (85)
Stroke: in (mm)	3.78 (96)
Compression Ratio	17.6:1
Intake Air Method	Turbocharged & Aftercooled

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	2%

Lubrication System

Oil Pump	Gear Driven
Oil Filter Type	Spin-On Cartridge, Full Flow
Engine Oil Capacity: qt (L)	12 (11.4)

Cooling System

Cooling System Type	Radiator and CAC
Water Pump Type	Engine Belt Driven
Fan Type	Pusher
Fan Speed: RPM	2,016
Fan Diameter: in (mm)	19.0 (48.3)
Cooling System Capacity — qt (L)	18 (17)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel
Fuel Specifications	EN 590 / ASTM D975
Fuel Filtering	5
Fuel Injection Pump – Make (Model)	Denso (HP3)
Fuel Pump Type	Engine Gear Driven
Injector Type	Electronic
Engine Type	Direct Injection High Pressure Common Rail
Fuel Supply Line Diameter – in (mm)	0.375 (9.5)
Fuel Return Line Diameter – in (mm)	0.375 (9.5)

Engine Electrical System

System Voltage: VDC	12
Battery Charger Alternator – VDC (A)	12 (50)
Battery – CCA	720
Battery – V (Qty)	12 (1)
Ground Polarity	Negative (-)

SUPERSTART ALTERNATOR SPECIFICATIONS

Make (Model)	Marathon Electric (285PSL1700)
Poles	4
Field Type	Rotating
Insulation Class — Rotor	Class H
Insulation Class — Rotor	Class H
Total Harmonic Distortion (THD)	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Shunt
Bearings	Single Bearing
Coupling	Direct Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	AVR
Quantity of Sensed Phases	Single
Regulation Accuracy (Steady State)	±0.5%

VFLEX ALTERNATOR SPECIFICATIONS

Make (Model)	Marathon Electric (284PSL28109)
Poles	4
Field Type	Rotating
Insulation Class — Rotor	Class H
Insulation Class — Rotor	Class H
Total Harmonic Distortion (THD)	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Shunt
Bearings	Single Bearing
Coupling	Direct Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	AVR
Quantity of Sensed Phases	Single
Regulation Accuracy (Steady State)	±0.5%

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

OPERATING DATA

POWER RATINGS

	SUPERSTART Alternator		VFLEX Alternator	
	Standby: kW/kVA (A)	Prime: kW/kVA (A)	Standby: kW/kVA (A)	Prime: kW/kVA (A)
1-Phase, 120/240 VAC @ 1.0pf—zig zag*	33/33 (138)	33/33 (138)	17/17 (71)	17/17 (71)
3-Phase, 208/120 VAC @ 0.8pf—low wye	44/55 (153)	38/47 (130)	38/48 (131)	32/40 (111)
3-Phase, 240/120 VAC @ 0.8pf—delta**	44/55 (132)	38/47 (114)	38/48 (114)	32/40 (96)
3-Phase, 480/277 VAC @ 0.8pf—high wye	44/55 (66)	38/47 (57)	48/59 (72)	37/46 (56)
3-Phase, 600/346 VAC @ 0.8pf—high wye	N/A	N/A	46/60 (52)	40/50 (48)

*Alternator limited.

**Power ratings achieved through use of optional 4-position voltage selection switch.

FUEL CONSUMPTION RATES

Prime Load	Fuel: gph (L/hr)
50%	1.7 (6.4)
75%	2.5 (9.4)
100%	3.3 (12.5)
110% (Standby)	3.8 (14.4)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

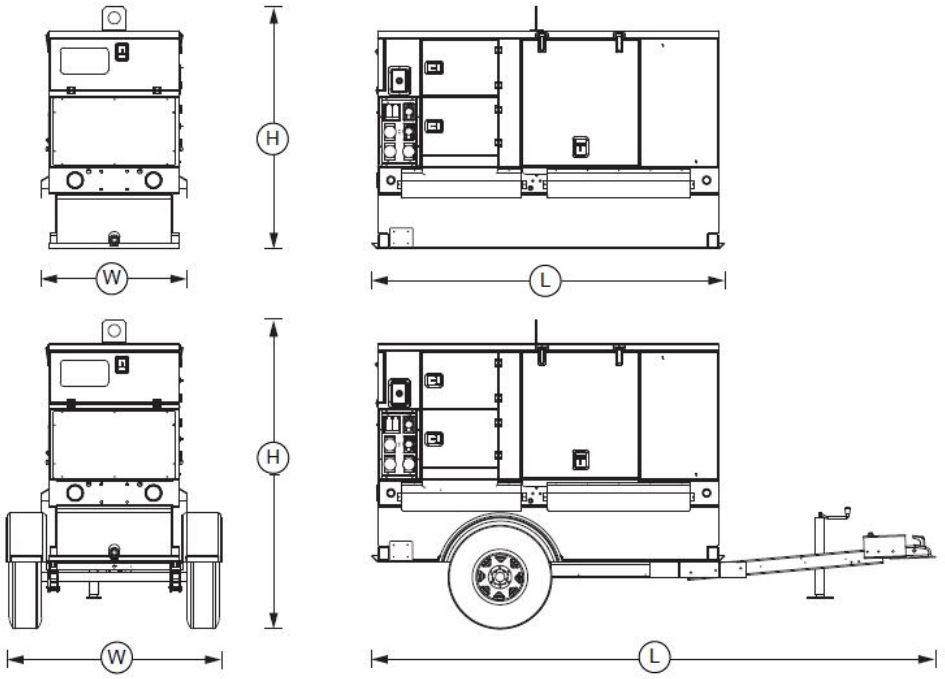
Please consult a Generac Mobile Authorized Service Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, ISO8665, ISO3046, SAE J1228, SAE J1995, and DIN6271 standards.

MMG45IF4 | 2.2 L | 45 kVA

MOBILE DIESEL GENERATOR SET

EPA Emissions Certification: Tier 4 Final

DIMENSIONS AND WEIGHTS*



	Runtime: hr*	Usable Fuel Capacity: gal (L)	Dimensions – L×W×H: in (m)	Weight: lb (kg)
Skid	36	90 (341)	95 (2.41)×39 (0.99)×65 (1.65)	Dry: 2,843 (1,290) Operating: 3,580 (1,624)
Trailer	36	90 (341)	152 (3.81)×58 (1.45)×83 (2.11)	Dry: 3,363 (1,525) Operating: 4,100 (1,860)

**Runtime based on 75% of prime rated power*

SOUND RATING

- 66 dB(A) @ 23 ft (7 m) @ Prime Power

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC MOBILE DEALER

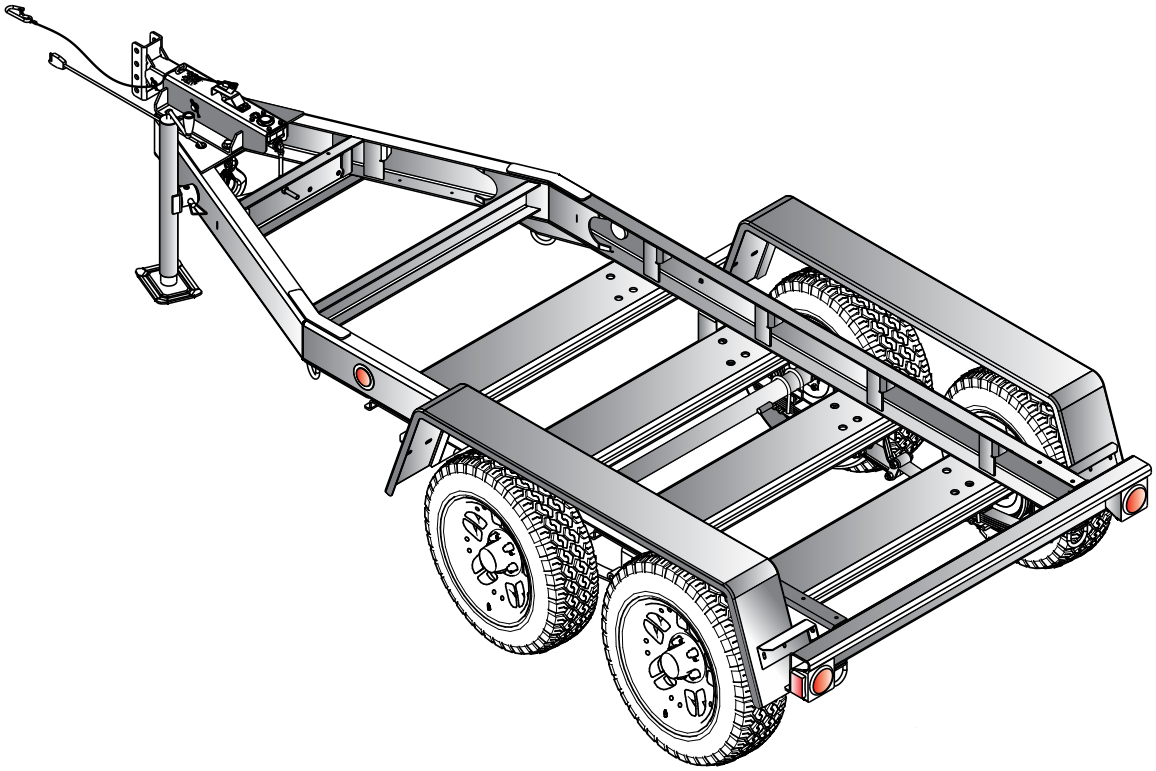
Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Mobile Authorized Service Dealer for detailed installation drawings.

Generac Power Systems, Inc. | S45 W29290 HWY. 59 | Waukesha, WI 53189 | generac.com

Part No. A0000393905
Rev. E 12/01/2023

TRLR45

MQ POWER Tandem Axle Trailer



TRLR45 Technical Data	
Gross Vehicle Weight Rating (GVWR) — 7,000 lbs (3,175 kg)	Tire Size — ST205/75D14 LR-C
Gross Axle Weight Rating (GAWR) — 3,500 lbs (1,588 kg)	Wheel Bolt Pattern — 5 Lug
Actuator Rating — 8,000 lbs (3,629 kg)	Tire Load Rating — 1,760 lbs /657 kg (ea.)
Coupler Rating — See coupler options on back page.	Dimensions (LxWxH) — See back page.

STANDARD TRAILER EQUIPMENT

- Fits MQ Power Generator Models DCA36SPXU4F, DCA40SSKU4F2, DCA45SSIU4F, DCA45USI3CAN
- Straight Tandem-Axle Design with Leaf Spring Suspension
- Heavy-Duty Welded Steel Frame Construction
- Formed Channel for Generator Mounting and Support
- Replaceable, Bolt-on Hydraulic Brake Actuator
- 4-Hole Channel Allows 3-position, Adjustable Coupler Height; 4-inches O/A
- Tongue Mounted Swivel Jack with Flat Disc-foot (rated 5,000 lbs/2,268 kg lift)
- Replaceable, Bolt-on Steel Fender Brackets and Fenders
- Rugged Textured Black Powder-Coated Frame, Channel, Actuator and Fenders
- D.O.T. Approved Tail Lamps, Stop Lamps, Turn Signal Lamps, Side Marker Lamps
- Weatherproof, Rubber Armored, 2-piece Trailer Light Wiring Harness
- Surge Hydraulic-actuated Drum Brakes (all axles)
- Hydraulic Uni-Servo Drum Brakes with Free-backing Plates - 10-inch Cluster
- D.O.T. Steel Brake Lines, Brass Tees and Rubber Hydraulic Brake Hoses

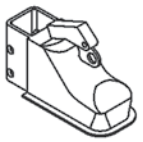
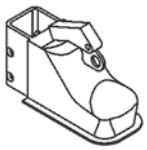
TRLR45

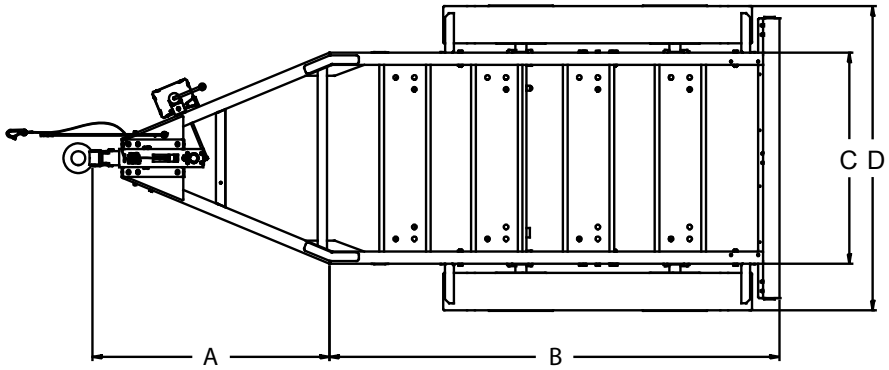
MQ POWER Tandem Axle Trailer

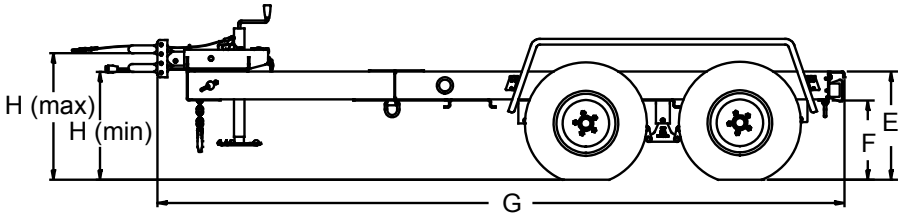
OPTIONAL TRAILER EQUIPMENT

- Bolt-on Electric Brake Coupler Plate with Electric-actuated Drum Brakes (all axles — self-adjusting brake actuators)
- Electric Breakaway Safety Device (electric-actuated brakes)
- Rear Stabilizer Stands
- Tongue Mounted Utility Storage Box
- Spare Tire with Locking Mount
- Anti-Theft Wheel Lock
- Center Mount Jack (rated 8,000 lbs./3,629 kg lift)
- 600V Transformer Kit

Coupler Options

3" Pintle Eye 25,000 lbs. #EE36264	
2" Ball Coupler 10,000 lbs. #EE43254	
2-5/16" Ball Coupler 14,000 lbs. #EE43253	





Trailer Dimensions								
A	B	C	D	E	F	G	H	
							MIN	MAX
50.84 in (1,291.3 mm)	96.49 in (2,450.8 mm)	45.25 in (1,149 mm)	65.25 in (1,657 mm)	23.2 in (590 mm)	16.98 in (431.3 mm)	147.33 in (3,742.2 mm)	23.1 in (587.7 mm)	27.1 in (689.3 mm)

Trailer Weight
1,056 lbs. (479 kg)*

* Weight is approximate

MULTIQUIP
POST OFFICE BOX 6254
CARSON, CA 90749
310-537-3700 • 800-883-2551
FAX: 310-604-3831
E-MAIL: sales@multiquip.com
WEBSITE: www.multiquip.com

TRLR45 Rev. #5 (05/22/18)

DCA45SSIU4F

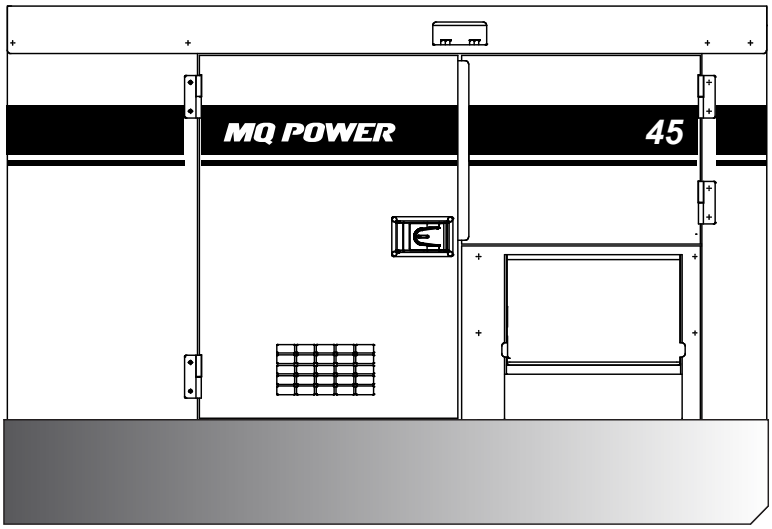
Generator

WhisperWatt™

Prime Rating — 36 kW (45 kVA)

Standby Rating — 40 kW (50 kVA)

Three-Phase, 60 Hertz, 0.8 PF



STANDARD FEATURES

- Heavy duty, 4-cycle, direct injection, heated crankcase vent, turbocharged, charge air cooled, diesel engine provides maximum reliability.
- EPA emissions certified — Tier 4 Final emissions compliant.
- Microprocessor engine control system maintains frequency to ±0.25%.
- Full load acceptance of standby nameplate rating in a single step.
- Fuel/water separator removes condensation from fuel for extended engine life. Panel-mounted alarm light included.
- Sound attenuated, weather resistant, steel housing provides operation at 66 dB(A) at 23 feet. Fully lockable enclosure allows safe unattended operation.
- E-coat and powder coat paint provide durability and weather protection.
- Internal fuel tank with direct reading fuel gauge.
- Spill containment — Bunded design protects environment by capturing up to 119% of engine fluids.
- Brushless alternator reduces service and maintenance requirements and meets temperature rise standards for Class H insulation systems.
  - Open delta alternator design provides virtually unlimited excitation for maximum motor starting capability.
  - Automatic voltage regulator (AVR) provides precise regulation.
- Fully covered power panel. Three-phase terminals and single phase receptacles allow fast and convenient hookup for most applications including temporary power boxes, tools and lighting equipment. The GFCI receptacles are NEMA 5-20, and the auxiliary outputs use CS6369 twist-lock receptacles.
- ECU754 microprocessor-based digital generator controller.
  - Remote 2-wire start/stop control.
  - Operational temperature range of -40° to 85° C.
- Digital engine gauges including oil pressure, water temperature, battery volts, engine speed and fuel level.
- Analog generator instrumentation including AC ammeter, AC voltmeter, frequency meter, ammeter phase selector switch, voltmeter phase selector switch, and voltage regulator adjustment potentiometer.
- Automatic safety shutdown system monitors the water temperature, engine oil pressure, overspeed, and overcrank. Warning lights indicate abnormal conditions.
- Emergency Stop Switch — when manually activated, shuts down generator in the event of an emergency.

DCA45SSIU4F

Generator

SPECIFICATIONS

Generator Specifications		
Design	Revolving field, self-ventilated Drip-proof, single bearing	
Armature Connection	Star with Neutral	Zig Zag
Phase	3	Single
Standby Output	40 KW (50 KVA)	28.8 KW
Prime Output	36 KW (45 KVA)	26 KW
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 240/139	208Y/120, 220Y/127, 240Y/139	N/A
3Ø Voltage (L-L/L-N) Voltage Selector Switch at 3Ø 480/277	416Y/240, 440Y/254, 480Y/277	N/A
1Ø Voltage (L-L/L-N) (Voltage Selector Switch at 1Ø 240/120)	N/A	240/120
Power Factor	0.8	1.0
Voltage Regulation (No load to full load)	±0.5%	
Generator RPM	1800	
Frequency	60 Hz	
Winding Pitch	2/3	
No. of Poles	4	
Excitation	Brushless with AVR	
Frequency Regulation: No Load to Full Load	Isochronous under varying loads from no load to 100% rated load	
Frequency Regulation: Steady State	±0.25% of mean value for constant loads from no load to full load.	
Insulation	Class H	
Sound Level dB(A) Full load at 23 feet	66	

Engine Specifications	
Make / Model	Isuzu / 4LE2X
Emissions	EPA Tier 4 Final Certified
Starting System	Electric
Design	4-cycle, water cooled, direct injection, turbocharged, charge air cooled and EGR
Displacement	133.0 in^3 (2179 cc)
No. cylinders	4
Bore x Stroke (mm)	85 x 96
Gross Engine Power Output	65.7 hp (49 kW)
BMEP	217 psi (1499 kPa)
Piston Speed	1133.9 ft./min. (5.76 m/s)
Compression Ratio	17.6:1
Engine Speed	1800 rpm
Overspeed Limit	2070 rpm
Oil Capacity	3.2 gallons (12.2 liters)
Battery	12V 72Ah x 1

Fuel System		
Recommended Fuel	ASTM-D975-No.1 & No.2-D*	
Maximum Fuel Flow (per hour)	3.4 gallons (13 liters)	
Maximum Inlet Restriction (Hg)	11 in. (280 mm)	
Fuel Tank Capacity	79.2 gallons (300 liters)	
Fuel Consumption	**gph**	**lph**
At full load	2.93	11.1
At 3/4 load	2.20	8.31
At 1/2 load	1.60	6.04
At 1/4 load	1.04	3.92

* Use Ultra-low sulfur diesel fuel

Cooling System	
Fan Load	2.01 hp (1.5 kW)
Coolant Capacity (with radiator)	4.44 gallons (16.8 liters)
Coolant Flow Rate (per minute)	16.9 gallons (64.2 liters)
Heat Rejection to Coolant (per minute)	1934 Btu (2.04 MJ)
Maximum Coolant Friction Head	14.5 psi (100 kPa)
Maximum Coolant Static Head	3.35 feet (1.04 meters)
Ambient Temperature Rating	104°F (40°C)

Air	
Combustion Air	174 cfm (4.94 m^3/min)
Maximum Air Cleaner Restriction	25 in. H_2O (6.23 kPa)
Alternator Cooling Air	526 cfm (14.9 m^3/min)
Radiator Cooling Air	1900 cfm (53.8 m^3/min)
Minimum Air Opening to Room	3.5 ft^2 (0.33 m^2)
Minimum Discharge Opening	2.27 ft^2 (0.21 m^2)

Exhaust System	
Gas Flow (full load)	237 cfm (6.7 m^3/min)
Gas Temperature	1078°F (581°C)
Maximum Back Pressure	38.1 in. H_2O (9.5 kPa)

Amperage	
Rated Voltage	**Maximum Amps**
1Ø 120 Volt	100 Amps (4 wire),108A x 2 (Zigzag)
1Ø 240 Volt	50 Amps (4 wire),108A (Zigzag
3Ø 240 Volt	108 Amps
3Ø 480 Volt	54 Amps
Main Line Circuit Breaker Rating	125 Amps
Over Current Relay Trip Set Point 480V Mode Only	54 Amps

WARRANTY*

Isuzu Engine**

12 months from date of purchase with unlimited hours or 36 months from date of purchase with 3,000 hours (whichever comes first).

Generator

24 months from date of purchase or 2,000 hours (whichever occurs first).

Trailer

12 months excluding normal wear items.

*Refer to the express written, one-year limited warranty sheet for additional information.
**Refer to Isuzu Diesel Engine Limited Warranty for details.

NOTICE

Specifications sheet is subject to change and is not intended for use in installation design.

DCA45SSIU4F

Generator

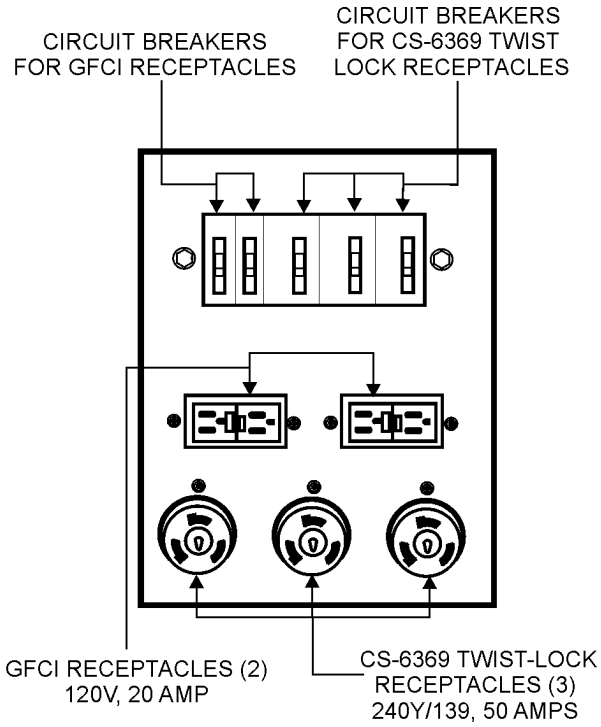
MQ POWER DECIBEL LEVELS

Our soundproof housing allows substantially lower operating noise levels than competitive designs. WhisperWatts are at home on construction sites, in residential neighborhoods, and at hospitals — just about anywhere.

- 90 — Subway / truck traffic
- 80 — Average city traffic
- 70 — Inside car at 60 mph
- WhisperWatt at 23 feet
- 60 — Air conditioner at 20 feet
- 50 — Normal conversation

66.0 DECIBELS

GENERATOR OUTPUT PANEL



OPTIONAL GENERATOR FEATURES

- **PowerBalance™** — designed to assist generators when operating under low temperature and/or low load conditions to insure peak performance.
- **Battery Charger** — provides fully automatic and self-adjusting charging to the generator's battery system.
- **Jacket Water Heater** — for easy starting in cold weather climates.
- **Low Coolant Level Shutdown** — provides protection from critically low coolant levels. Includes control panel warning light.
- **Trailer Mounted Package** — meets National Highway Traffic Safety Administration (NHTSA) regulations. Trailer is equipped with electronic or surge brakes with double or triple axle configuration.

OPTIONAL CONTROL FEATURES

- **Audible Alarm** — alerts operator of abnormal conditions.

OPTIONAL FUEL CELL FEATURES

- **Sub-base Fuel Cells (double wall)** — additional fuel cell for extended runtime operation. Contains a leak sensor, low fuel level switch, and a secondary containment tank. UL142 listed.
- 12 hours of minimum run time.
- 24 hours of minimum run time.

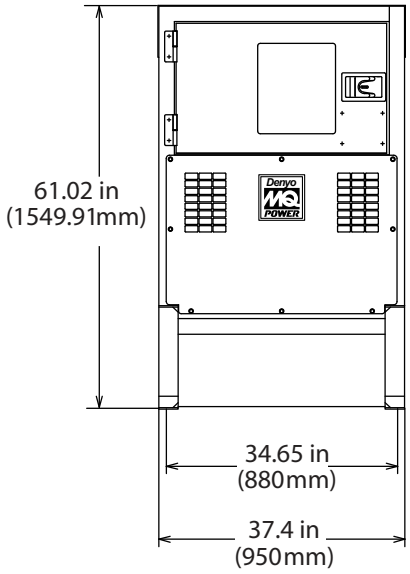
OPTIONAL OUTPUT CONNECTIONS

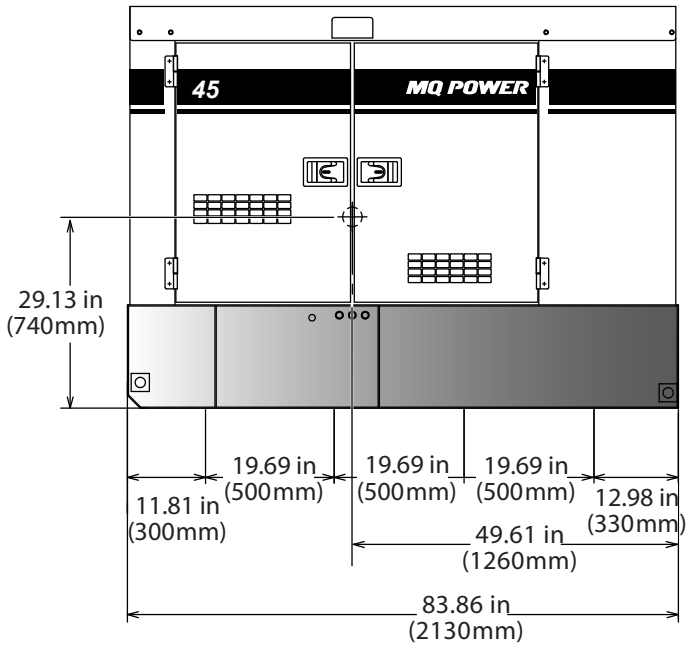
- **Cam-Lok Connectors** — provides quick disconnect alternative to bolt-on connectors.
- **Pin and Sleeve Connectors** — provides industry standard connectors for all voltage requirements.
- **Output Cable** — available in any custom length and size configuration.

DCA45SSIU4F

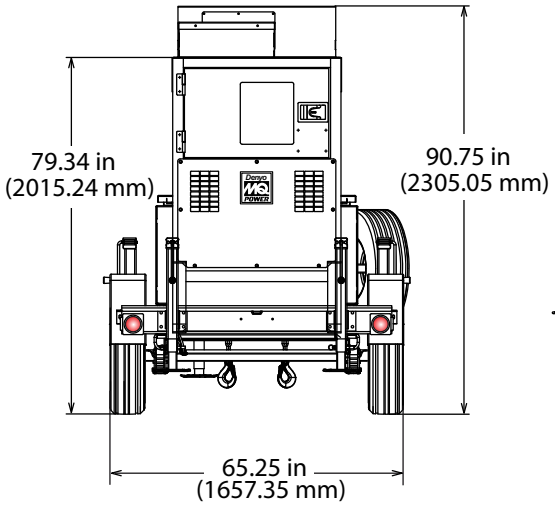
Generator

SKID-MOUNT DIMENSIONS

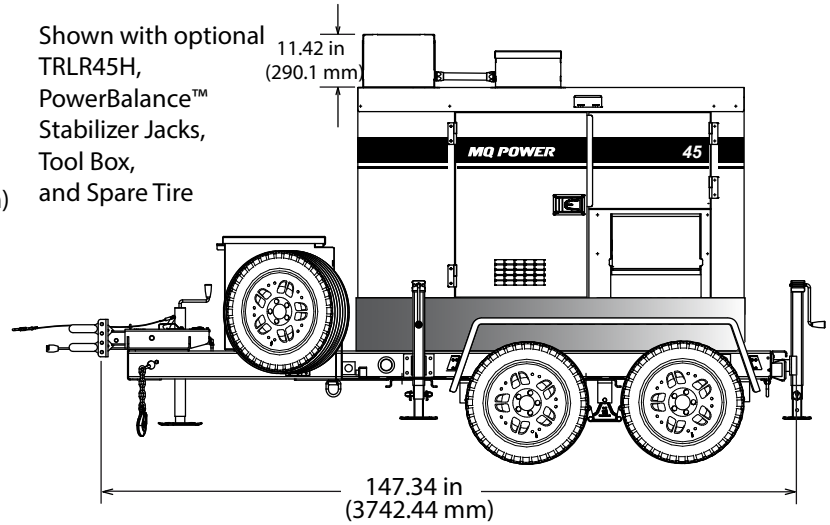




TRAILER-MOUNT DIMENSIONS



Shown with optional TRLR45H, PowerBalance™ Stabilizer Jacks, Tool Box, and Spare Tire



DCA45SSI4F Weights*	
Dry Weight	2,335 lbs. (1,059 kg)
Wet Weight	2,974 lbs. (1,349 kg)
Max. Lifting Point Capacity	5,150 lbs. (2,335 kg)

* Weights do not include options.

DCA45SSI4F and TRLR45 Weights*	
Dry Weight (with TRLR45)	3,391 lbs. (1,538 kg)
Wet Weight (with TRLR45)	4,030 lbs. (1,828 kg)

Generator can be placed on MQ Trailer Models TRLR45 and TRLR75XF2.

NOTICE

Features and Specifications are subject to change without notice.

DCA45SSIU4F Rev. #8 (06/28/22)

MULTIQUIP
6141 Katella Avenue Suite 200
Cypress, CA 90630
310-537-3700
E-MAIL: mq@multiquip.com
WEBSITE: www.multiquip.com

EXHAUST EMISSION DATA SHEET

MQ POWER GENERATOR SET

Model: DCA45SSIU4F

The engine used in this generator set is certified to comply with United States EPA Tier 4 and CARB Mobile Off-Highway emission regulations.

ENGINE DATA

Manufacturer:	ISUZU	**Bore:**	3.35 in. (85 mm)
Model:	4LE2X	**Stroke:**	3.78 in. (96 mm)
Type:	4-Cycle, In-Line, 4-Cylinder, Diesel	**Displacement:**	133 cid (2.2 liters)
Aspiration:	Turbocharger, ECM, EGR, DOC, Electronic Direct Injection, Charge Air Cooler	**Compression Ratio:**	17.6:1

PERFORMANCE DATA

SAE Gross HP @ 1800 RPM (60 Hz) Rated	95.7
Load Fuel Consumption (gal/Hr) Rated	2.93
Load Exhaust Gas Flow (cfm) Rated Load	237
Exhaust Gas Temperature (ºF)	1078

United States EPA - Mobile Off-Highway Tier 4 Limits - 25 ≤ ~ < 75 BHP

Criteria Pollutant	Emission Requirements	Certified Engine Emissions
NOx (Oxides of Nitrogen as NO2)	N/A gr/bhp-hr	N/A gr/bhp-hr
HC (Total Unburned Hydrocarbons)	N/A gr/bhp-hr	N/A gr/bhp-hr
NOx + HC (Combined)	N/A gr/bhp-hr	N/A gr/bhp-hr
CO (Carbon Monoxide)	3.72 gr/bhp-hr	0.007 gr/bhp-hr
PM (Particulate Matter)	0.02 gr/bhp-hr	0.01 gr/bhp-hr
NMHC (Non-Methane Hydrocarbons)	N/A gr/bhp-hr	N/A gr/bhp-hr
NMHC + NOx	3.50 gr/bhp-hr	2.38 gr/bhp-hr

EPA Engine Family:	PSZXL02.2PXB
EPA Certificate of Conformance:	PSZXL02.2PXB-006
ARB Executive Order:	U-R-006-0521
Effective Date:	Model Year 2023

Note: Engine operation with excessive air intake or exhaust restriction beyond factory published maximum limits, or with improper service maintenance, may result in higher emission levels.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
2023 MODEL YEAR
CERTIFICATE OF CONFORMITY
WITH THE CLEAN AIR ACT

OFFICE OF TRANSPORTATION AND AIR QUALITY
ANN ARBOR, MICHIGAN 48105

Certificate Issued To: **Isuzu Motors Limited**
(U.S. Manufacturer or Importer)

Certificate Number: PSZXL02.2PXB-006

Effective Date: 07/21/2022

Expiration Date: 12/31/2023

Byron J. Bunker, Division Director
Compliance Division

Issue Date: 07/21/2022

Revision Date: N/A

Model Year: 2023
Manufacturer Type: Original Engine Manufacturer
Engine Family: PSZXL02.2PXB

Mobile/Stationary Indicator: Mobile
Emissions Power Category: 37<=kW<56
Fuel Type: Diesel
After Treatment Devices: Diesel Oxidation Catalyst
Non-after Treatment Devices: Electronic Control, Electronic/Electric EGR - Cooled

Pursuant to Section 213 of the Clean Air Act (42 U.S.C. section 7547) and 40 CFR Part 1039, and subject to the terms and conditions prescribed in those provisions, this certificate of conformity is hereby issued with respect to the test engines which have been found to conform to applicable requirements and which represent the following engines, by engine family, more fully described in the documentation required by 40 CFR Part 1039 and produced in the stated model year.

This certificate of conformity covers only those new compression-ignition engines which conform in all material respects to the design specifications that applied to those engines described in the documentation required by 40 CFR Part 1039 and which are produced during the model year stated on this certificate of the said manufacturer, as defined in 40 CFR Part 1039.

It is a term of this certificate that the manufacturer shall consent to all inspections described in 40 CFR 1068 and authorized in a warrant or court order. Failure to comply with the requirements of such a warrant or court order may lead to revocation or suspension of this certificate for reasons specified in 40 CFR Part 1039. It is also a term of this certificate that this certificate may be revoked or suspended or rendered void *ab initio* for other reasons specified in 40 CFR Part 1039.

This certificate does not cover engines sold, offered for sale, or introduced, or delivered for introduction, into commerce in the U.S. prior to the effective date of the certificate.

CALIFORNIA AIR RESOURCES BOARD	ISUZU MOTORS LIMITED	EXECUTIVE ORDER U-R-006-0521 New Off-Road Compression-Ignition Engines Page 1 of 1

Pursuant to the authority vested in California Air Resources Board by Sections 43013, 43018, 43101, 43102, 43104 and 43105 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-19-095;

IT IS ORDERED AND RESOLVED: That the following compression-ignition engines and emission control systems produced by the manufacturer are certified as described below for use in off-road equipment. Production engines shall be in all material respects the same as those for which certification is granted.

MODEL YEAR	ENGINE FAMILY	DISPLACEMENT (liters)	FUEL TYPE	USEFUL LIFE (hours)
2023	PSZXL02.2PXB	2.179	Diesel	8000

SPECIAL FEATURES & EMISSION CONTROL SYSTEMS	TYPICAL EQUIPMENT APPLICATION
Electronic Control Module, Turbocharger, Charge Air Cooler, Electronic Direct Injection, Exhaust Gas Recirculation, Diesel Oxidation Catalyst	Generator Set

The engine models and codes are attached.

The following are the exhaust certification standards (STD) and certification levels (CERT) for non-methane hydrocarbon (NMHC), oxides of nitrogen (NOx), or non-methane hydrocarbon plus oxides of nitrogen (NMHC+NOx), carbon monoxide (CO), and particulate matter (PM) in grams per kilowatt-hour (g/kw-hr), and the opacity-of-smoke certification standards and certification levels in percent (%) during acceleration (Accel), lugging (Lug), and the peak value from either mode (Peak) for this engine family (Title 13, California Code of Regulations, (13 CCR) Section 2423):

RATED POWER CLASS	EMISSION STANDARD CATEGORY		EXHAUST (g/kw-hr)					OPACITY (%)		
			NMHC	NOx	NMHC+NOx	CO	PM	ACCEL	LUG	PEAK
37 ≤ kW< 56	Tier 4 Final	STD	N/A	N/A	4.7	5.0	0.03	N/A	N/A	N/A
		CERT	--	--	3.2	0.01	0.02	--	--	--

BE IT FURTHER RESOLVED: That for the listed engine models, the manufacturer has submitted the information and materials to demonstrate certification compliance with 13 CCR Section 2424 (emission control labels), and 13 CCR Sections 2425 and 2426 (emission control system warranty)..

Engines certified under this Executive Order must conform to all applicable California emission regulations.

This Executive Order is only granted to the engine family and model-year listed above. Engines in this family that are produced for any other model-year are not covered by this Executive Order.

Executed on this 21st day of July 2022.

Robin Shi for

Robin U. Lang, Chief
Emissions Certification and Compliance Division

Attachment: Engine Models **EO #:** U-R-006-0521 **Family:** PSZXL02.2PXB **Attachment Last Revised:** 6/28/2022

Model	Code	Trim	Config	Displacement	Displacement - Units	Peak Power	Peak Power - Units	Peak Power - Speed (rpm)	Peak Power - Fueling	Peak Power - Fuel Units	Peak Torque	Peak Torque - Units	Peak Torque - Speed (rpm)	Peak Torque - Fuel	Peak Torque - Fuel Units	OBD	GHG	Special	Notes
BP-4LE2X	4LE2XDP BA-01	N/A	I4	2.179	L	65.7	HP	1800	56.1	mm3/stroke	192	lb-ft	1800	56.1	mm3/stroke	N/A	N/A	N/A	N/A
BP-4LE2X	4LE2XDP BB-01	N/A	I4	2.179	L	65.7	HP	1800	56.1	mm3/stroke	192	lb-ft	1800	56.1	mm3/stroke	N/A	N/A	N/A	N/A

SALES QUOTE

Herc Rentals Inc.

Office: **Oakland** Branch #: 9705
Fax:
Cell: **415-238-1429**
Email: keith.jones@hercrentals.com

Sales Rep: **Keith Jones**

Date: 4/10/2025

Customer Information

Name: **Montara Water & Sanitary District**
Contact:
Address: PO Box 37031
City, State: Montara, CA
Zip: 94037
Phone:
Fax:

Job Site Information

Name: **Montara Water & Sanitary District**
Contact:
Address: 8888 Cabrillo Hwy
City, State: Montara, CA
Zip: 94037
Phone:
Fax:

Qty	Description	Part Number	Unit Price	Unit of Measure	Extended Price
1	DCA45SSIU4F Generator 45kVA 3ph Isuzu Tier 4F INCLUDES THE FOLLOWING:		$53,349.00	Ea	$53,349.00
1	TRAILER DCA36-45SS				
1	COUPLER 2-5/16 14k TRLRMP				
1	BLOCK HEATER				
1	CAMLOK SET				
1	3 WAY FUEL VALVE MANUAL				
1	BATTERY CHARGER 6A				

Sales Quote is valid through: 30 DAYS

Sub Total		$53,349.00
Transportation Charges		$1,900.00
Estimated Taxes	10.25%	$5,663.02
Estimated Total		**$60,912.02**

Comments :
FOB San Bernardino, CA -- Transportation is estimated; Estimated delivery after receipt of Purchase Order is 5 - 7 weeks

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

SUBJECT: **Review and Action Concerning Receipt of Funding for FEMA-Declared Disasters on Behalf of Sewer Authority Mid-Coastside**

The District has received additional funding from FEMA and CalOES in the amount of $318,837.97. The below staff report was initially prepared and submitted for the December 7, 2023 regular meeting. This check represents the 2nd to last payment SAM is expected to receive in connection with the FY 22-23 Winter Strom Damage. Both SAM and MWSD believe the final check will be received before the end of FY 24-25.

As with prior receipts, MWSD intends to bring all further receipts to the attention of the Board as a matter of public record notification of both receipt as well as the full and complete disbursement of funds to SAM.

Federally-declared disasters have become a more frequent occurrence in the State of California and across the nation. The Federal Emergency Management Agency (FEMA) and California Office of Emergency Services (Cal OES) provide funding for eligible emergency costs for entities that apply and are approved through their Public Assistance (PA) programs.

The Sewer Authority Mid-Coastside (SAM) participates in the San Mateo County Local Hazard Mitigation Plan (LHMP) through the Montara Water and Sanitary District's (MWSD or District) LHMP Annex, and, therefore, any Request for Public Assistance (RPA) applications for SAM require the District's Board of Directors action in the form of a Resolution. The District's Board approved a Universal Resolution in support of SAM on August 17, 2023.

Universal Resolution Details
A Universal Resolution is effective for all past disasters and for those declared up to three (3) years following the date of approval. Upon expiration it is no longer effective for new disasters, but it remains in effect for disasters declared prior to expiration. It remains effective until the disaster goes through closeout unless it is superseded by a newer resolution.

Grant Programs
Passing a Universal Resolution allows the District to apply for federal financial assistance for any existing or future grant program, including, but not limited to any of the following:

- *Federally declared Disaster (DR), Fire Mitigation Assistance Grant (FMAG), California State Only Disaster (CDAA), Immediate Services Program (ISP),*

MONTARA WATER AND SANITARY DISTRICT AGENDA

For Meeting Of: **May 15, 2025**

TO: BOARD OF DIRECTORS

FROM: Clemens Heldmaier, General Manager

- *Hazard Mitigation Grant Program (HMGP), Building Resilient Infrastructure and Communities (BRIC), Legislative Pre-Disaster Mitigation Program (LPDM), under Public Law 93-288 as amended by the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988, and/or state financial assistance under the California Disaster Assistance Act.*
- *Flood Mitigation Assistance Program (FMA), under Section 1366 of the National Flood Insurance Act of 1968.*
- *National Earthquake Hazards Reduction Program (NEHRP) 42 U.S. Code 7704 (b) ((2) (A) (ix) and 42 U.S. Code 7704 (b) (2) (B) National Earthquake Hazards Reduction Program, and also The Consolidated Appropriations Act, 2018, Div. F, Department of Homeland Security Appropriations Act, 2018, Pub. L. No. 115-141*
- *California Early Earthquake Warning (CEEW) under CA Gov Code – Gov, Title 2, Div. 1, Chapter 7, Article 5, Sections 8587.8, 8587.11, 8587.12*

The SAM application for disaster relief funds had been approved by Cal EOS and FEMA and the funds have now been dispersed by FEMA and received by MWSD. Copies of the checks are attached and the sum total of the funds received is $318,837.97. These funds will be transferred to SAM by MWSD. MWSD's Board support of SAM made these FEMA reimbursements possible.

RECOMMENDATION:

Receive Report.

[redacted]

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - VIEW AT AN ANGLE

STATE OF CALIFORNIA

WARRANT NUMBER [redacted]

THE TREASURER OF THE STATE WILL PAY OUT OF THE

FUND NO. 8087 FUND NAME FISCAL CONSOLIDATED PMT

IDENTIFICATION NO. 0000064843 0000

MO. 05 DAY 05 YR. 2025

90-1342/1211

[redacted]

DOLLARS	CENTS
$**318837.	97

TO: 881132
--- MONTARA WATER & SANITARY DIST
PO BOX 370131
MONTARA CA 94037-0131

Malia Cohen
MALIA M. COHEN
CALIFORNIA STATE CONTROLLER

[redacted]

DETACH ON DOTTED LINE
KEEP THIS PORTION FOR YOUR RECORDS

[redacted]

ISSUE DATE: 05/05/2025
OFFICE OF EMERGENCY SERVICES
3650 SCHRIEVER AVE.
MATHER CA 95655
FOR QUESTIONS CONTACT ACCOUNTING DEPARTMENT AT 916/845-8340

VENDOR NAME — VENDOR ID

MONTARA WATER & SANITARY DIST [redacted]

VOUCHER ID — INVOICE ID — PO ID

00316019 TR-050752

AMOUNT PAID

$318837.97

RECEIVED
MAY 08 2025
BY:

PAYMENT MESSAGE

ATTN: KISHEN PRATHIVADI

ADDITIONAL PAYMENT MESSAGE

PA, PW# 1282, DR4683, EMAIL FOR ADDITIONAL INFORMATION: DAPP@CALOES.CA.GOV