STAX Engineering, Inc.
215 W Figueroa Street
Santa Barbara, CA 93101

June 17, 2024

The City of Los Angeles Harbor Department
425 S. Palos Verdes Street
San Pedro, CA 90731

Re: STAX Engineering Proposal in response to Harbor Department's RFP "On-Call Ocean-Going Vessel At Berth Emissions Control Services" RAMP ID #214218

Dear City of Los Angeles Harbor Department:

STAX Engineering, Inc. is proud to present our unparalleled Emissions Capture and Control Services (ECCS) at the Port of Los Angeles, in direct response to the Harbor Department's RFP "On-Call Ocean-Going Vessel At Berth Emissions Control Services" (RAMP ID #214218). With a collective executive and operations team experience of over 70 years, STAX Engineering is the most seasoned company in the industry. Our founder, Bob Sharp, pioneered ECCS technology over two decades ago and has consistently improved its design, making the STAX system the most versatile and technologically advanced ECCS, capable of serving any vessel in the most demanding operational environments.

Our patented self-mooring (spud-equipped barge), with its patented (optional) self-propulsion design, is a testament to our commitment to addressing the unique space and operational challenges at the Port of Los Angeles. STAX treatment barges feature the industry's longest positioning boom reach, and their compact and modular design allows for easy capacity expansion or modification to adapt to the changing needs of fleets visiting the Port. Furthermore, STAX Engineering is the only company with a CARB EO for container and auto carrier/RORO vessels and one for tanker vessels, which is expected to receive approval very soon (Q4 2024). These factors enable us to provide the most comprehensive service to control emissions from vessels visiting your port, ensuring that your air quality objectives are met with the highest level of effectiveness and efficiency.

Our proven operational and logistical track record, demonstrated by our successful commissioning of a barge at the Port of Los Angeles / Long Beach in 2022 and in Oakland in 2023, along with our rapidly expanding fleet (three more systems under

construction and planned for service later this year), underline our ability to meet your on-call service requirements. We are proud to have the most experienced team of trained operators, and our existing contract with the International Boatman's Union (IBU) ensures our continued superior service, which has fostered successful customer relationships and secured multi-year and multi-terminal contracts with container, RoRo, and tanker vessel operators and terminals.

In conclusion, STAX Engineering is the most experienced ECCS service provider, backed by robust financial support, a top-notch management and operational team, and a proven successful service provision track record. By choosing STAX Engineering, you ensure immediate, worry-free compliance for you and your customers. We eagerly anticipate the opportunity to collaborate with you and your team. Please do not hesitate to reach out if you require further information or have any questions.

Sincerely,

Michael Walker
CEO
STAX Engineering, Inc.

STAX ENGINEERING

ON-CALL OCEAN-GOING VESSEL AT BERTH EMISSIONS CONTROL SERVICES

BIDDER: STAX ENGINEERING, INC.
RAMP ID #214218

STAX
ENGINEERING

ON-CALL OCEAN-GOING VESSEL
AT BERTH EMISSIONS CONTROL SERVICES
BIDDER: STAX ENGINEERING, INC.
RAMP ID #214218

CONTENTS

For the Future

QUALIFICATIONS, EXPERIENCE, AND REFERENCES

STAX Engineering, Inc. (STAX) is pleased to present this proposal to provide on-call emissions control services for ocean-going vessels to meet CARB's At Berth Regulation requirements in the Port of Los Angeles. Our comprehensive understanding of the marine industry, proven record of superior compliance service, and dedicated 24/7/365 operation with two STAXcraft barges in revenue service set us apart from competitors. This track record of successful compliance service of vessels is a testament to our ability to deliver on our promises and meet the needs of our clients, instilling confidence in the feasibility and success of our proposal.

STAX Engineering is leading the industry, driven by a dedicated investor team and bolstered by robust revenue streams from our operational barges. With a strategic financing mechanism in place, STAX is fully prepared to expand its barge fleet efficiently to meet the requirements of the impending At Berth Regulation compliance deadline of January 1, 2025. The company has already secured agreements with numerous carriers and terminals, ensuring timely deployment of capture and control barges well before the deadline. Currently, three barges are under construction in the shipyard, with several more in the pipeline, affirming STAX's commitment to meeting regulatory obligations and advancing environmental stewardship in mari-

time operations. This strategic planning and preparedness should provide the audience with reassurance about the implementation and adherence to the regulatory obligations of our proposal.

STAXcraft barges three, four, and five are in production and expected to be ready for deployment in the third or fourth quarter of 2024. STAX Engineering is the only company awarded executive orders by the California Air Resources Board (CARB) for CARB-approved emission control systems (CAECS) complying with their At-Berth Regulation for container and auto carriers/RORO vessels with approved test plans to expand the operating envelope of our systems to include all vessel sizes by Q3 of this year. STAX, with our CARB-approved tanker test plan, is well on its way to obtaining additional approval from CARB to service the tanker sector beginning next year.

Our commitment to exceptional service, financial stability, technology, and seasoned professionals has helped us secure contracts with multiple carriers, terminals, and ports. Our clientele includes the top two auto carriers in California, Nippon Yusen Kabushiki Kaisha (NYK Line) & Hyundai GLOVIS Co., Ltd., two leading container carriers, CMA CGM Group and ZIM Integrated Shipping Services Ltd. (ZIM), a tanker terminal operated by Shell plc, two auto carrier terminals, AMPORTS and SSA, and one Port, Port of Richmond. Additionally, we are in late-stage contract negotiations with a leading auto terminal and the largest tanker terminal in Long Beach. This extensive client base and ongoing negotiations reflect our relentless pursuit of excellence and innovation in the industry.

For further confirmation of our treatment and service record, STAX is pleased to share the following customer references.

- **ZIM Integrated Shipping Services Ltd.**
  Jeff Long
  Marine Vessel Operations / West Coast Branch
  +1 (201) 912 6349
  long.jeff@zim.com or LAX.MAROPS@zim.com

- **Hapag-Lloyd AG**
  Graeme Burns
  Director, Marine Operations – Region North America
  +1 (813) 390 9258
  graeme.burns@hlag.com

- **Nippon Yusen Kabushiki Kaisha (NYK Line)**
  Rintaro Saito
  RORO Division, NYK Group Americas Inc.
  +1 (310) 780 5562
  rintaro.saito@nykgroup.com

- **Wallenius Wilhelmsen**
  Len Mazzella
  General Manager
  West Coast - Port, Terminal, Stevedoring Operations - North America
  +1 (805) 271 2261
  len.mazzella@walwil.com

STAX operations at the Port of Los Angeles will continue to deliver the same high-quality service that we have demonstrated by implementing our time-proven training, operations, customer service, and top-quality equipment.

PROJECT ORGANIZATION, PERSONNEL AND STAFFING

STAX Engineering is a team of professionals specializing in Emissions Capture and Control Systems (ECCS) technology with over 70 years of combined experience in ECCS design and service. The STAX leadership team consists of Mike Walker, a proven technology Chief Executive Officer; Bob Sharp, our Founder and Chief Technology Officer; Dr. John Holmes (CAPT, USCG, ret.), our Chief Operations Officer; and Dr. Randall Pasek, our Chief Regulatory Officer.

Michael Walker has been CEO of STAX since 2019. During this time, he has overseen the construction of several barge systems and manages product commercialization, marketing, contracting, and accounting. Michael has over 20 years of operations, management, and leadership experience in building companies, from the pre-commercialization start-up phase to successful market penetration and integration in environmental infrastructure markets. His financial acumen provides a solid foundation for STAX's future expansion and ongoing operations.

Bob Sharp, an original capture and control technology pioneer since 2004, is the Founder and CTO of STAX Engineering. Bob has experience developing several ECCS barges, implementing lessons learned over the past 20 years, and researching principles in science and health to develop the current next-generation (STAX) system. Bob founded STAX in 2016.

Dr. John Holmes, COO of STAX Engineering, is a former Coast Guard Captain with over 40 years of maritime experience. He has served in various roles, including Independent Marine Consultant, COO, Fortune 500 executive, and senior-level U.S. Coast Guard Officer. He has previously captained the San Pedro Bay Ports and was **Deputy Executive Director for the Port of Los Angeles from 2007-2013, overseeing operations at the nation's largest Port.** John began working with barge-based ECCS in 2013 and joined STAX in 2022.

Dr. Randall Pasek, Chief Regulatory Officer, has extensive experience with operations and regulatory compliance of ECCS systems. He has amassed over 35 years in air pollution control, with almost two decades of experience at the California Air Resources Board and a decade of experience working on similar off-road projects at the South Coast Air Quality Management District. Dr. Pasek joined STAX in 2018.

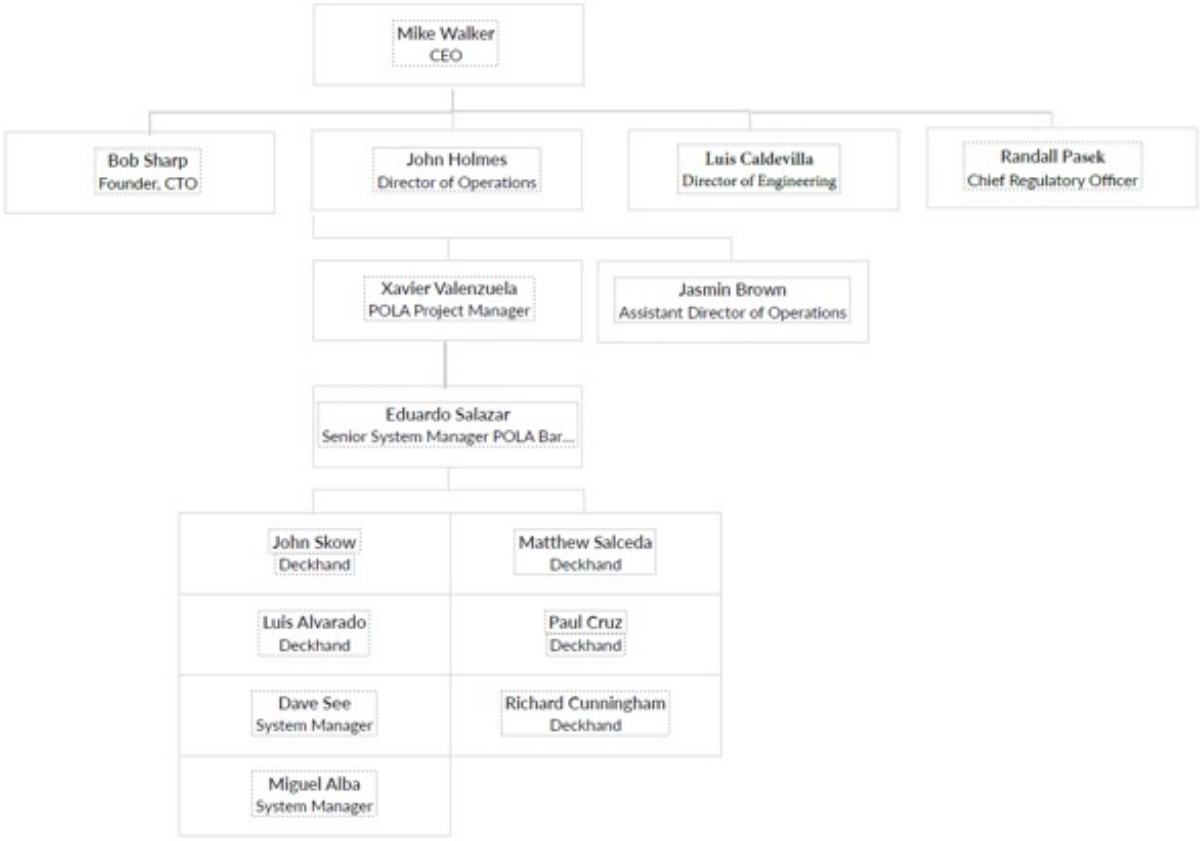
The expanded STAX team comprises more than 20 full-time employees, including additional support staff supplied by the International Boatman's Union (IBU). The STAX management model focuses on decentralized (local) operations with a centralized support infrastructure. The operational support team includes an Assistant Director of Operations, Barge Supervisors, Systems Manager, Support Engineer, System Operators, and deckhands. Each area of operation has a local area manager and Barge Supervisors tasked with ensuring the maintenance and operation of the STAXcraft barge, scheduling personnel and tug(s), and working with and being available for local stakeholders to ensure that the barge(s) meet CARB requirements with minimal impact to port operations.

A STAX crew, including a Barge Supervisor, two System Operators, and three deckhands, will operate each barge. Service will be crewed on twelve-hour shifts by a two-person team consisting of one System Operator and one deckhand. The System Operator supervises the barge's operations, places the collection device, and monitors and adjusts the system. The deckhand maintains the lines, operates the spuds, and assists the System Operator in monitoring service operations. The local Barge Supervisor (a qualified System Operator) will serve as the relief System Operator and perform supervisory duties. The third deckhand will serve as a relief. IBU has committed to providing deckhands for our Port of Los Angeles fleet.

In addition, all STAX barges are connected by the internet to key technology, engineering, and maintenance personnel who can examine the health and operation of the processing systems remotely to assist the crew with efficient system operation.

The Project Manager for the proposed services and Barge Supervisor will be Xavier Valenzuela, a recent California Maritime Academy graduate and a San Pedro local (resume included in the Appendix). He will be the primary point of contact for the Port of Los Angeles. He will be assisted by System Operators Eduardo Salazar, Miguel Alba, and Dave See. Deckhands for the barge will be IBU personnel, including Paul Cruz, Matt Salceda, and John Skow. System Operators and Deckhands will be added as necessary. An organization chart for this project is provided below.

STAX Organization Chart for POLA Project



Barge personnel will principally maintain the barge. They will be assisted by Luis Caldevilla, STAX Director of Engineering, with parts provided by our parts depot in Wilmington, CA. All operations and maintenance personnel will be available seven days a week, 24 hours a day. All STAX management, project personnel, and STAX's contracted partners have active TWIC Cards.

RATES, FEES, AND BUDGET CONTROLS

STAX will provide service for calls expected to be 24 hours or longer. Pricing per vessel class is as follows:

STAX will service container ships on a tier system based on the number of visits/hours, with rates ranging between $800 and $1000 per hour.

STAX will service auto carrier/RoRo ships on a tier system based on the number of visits/hours, with rates ranging between $1200 - $1500 per hour. STAX has existing multi-year and multi-terminal contracts in place with NYK Line and Hyundai GLOVIS Co., Ltd. STAX will bill these carriers directly per the terms of their contracts.

STAX will service tanker ships on a tier system based on the number of visits/hours, with rates ranging between $700 - $2500 per hour.

APPROVED TEST PLAN(S) AND EXECUTIVE ORDER(S)

STAX is the 2021 California Air Resource Board's grant recipient for technology advancement, ensuring our solutions meet expanding regulations today and in the future.

Executive Orders for STAX CARB-approved emission control systems (CAECS) for compliance with the At Berth Regulation.

- **EO G-23-294**
  A barge based capture and control system to treat emissions from auxiliary engines on ocean-going container vessels.

- **EO G-24-054**
  A barge based capture and control system to treat emissions from auxiliary engines on ocean-going auto carriers/roll-on roll-off (RORO) vessels.

It is important to note that CARB Executive Orders are issued based on the capacity of the systems on the vessel available for EO testing. STAX will continuously conduct testing and evaluation to expand our Executive Orders and ensure that our ECCS continues to meet the requirements of any vessel that calls on West Coast ports. STAX anticipates receiving a third EO later this year for a barge based capture and control system to treat emissions from auxiliary engines on ocean-going tanker vessels.

The Appendix includes copies of CARB Executive Orders for container and RoRo vessels, letters for three CARB-approved test plans for tanker vessels, and the expansion of the load range for the container and RoRo vessel categories. All testing is expected to be completed in Q3 of this year, and Executive Orders will be issued before the end of the year.

RESPONSE TIMES

For scheduled calls, STAX will begin service within 2 hours of “Ready to Work” and 1 hour of “Pilot on Board” as mandated by CARB regulations. STAX policy is to promptly engage tugs to ensure the barge is prepared and waiting for a ship’s arrival. STAX has maintained a flawless record, never failing to meet the CARB requirements.

For unscheduled calls, STAX can commit to emissions control services with a minimum of four hours’ notice. After reviewing and discussing this with the established tug companies in the harbor, they have indicated that their minimum response time is two hours. Depending on the location of the emission control barge, it may take up to an hour to arrive on the scene.

STAX can conduct much of the crewing, equipment calibration, and system warm-up during transit; it is best to plan time for the Barge Supervisor to contact the tugs and crew, provide time for transit to the barge, complete system preparation, and allow for any unforeseen delays. In the case of this RFP, the Barge Supervisor and crew are local to the Port and can report for service within one hour of being notified.

STAX will provide the Port of Los Angeles with a two-hour response time, with a payable contract for crew and tug standby time.

APPENDIX

For the Future

FIELD RECORDS

For the Future

	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)
	Vessel Visit Information														
Visit #	Vessel Name	Vessel IMO Number	Vessel Type	IMO NOx Tier	California Port Visited	Terminal Visited	Berth Visited	CAECS Arrival Date	CAECS Arrival Time	CAECS Departure Date	CAECS Departure Time	CAECS Start Date	CAECS Start Time	CAECS End Date	CAECS End Time
1	ZIM SEASPAN LONCOMILLA	9437385	CONTAINER	Tier I	Long Beach	TYM	128	12/12/23	5:40:00	12/13/23	3:30:00	12/12/23	6:40:00	12/13/23	3:00:00
2	ZIM SEASPAN CHIBA	9492713	CONTAINER	Tier II	Long Beach	TYM	126	12/18/23	16:35:00	12/19/23	18:25:00	12/18/23	18:15:00	12/19/23	18:00:00
3	CMA CGM ERVING	9463023	CONTAINER	Tier II	Long Beach	FENIX	306	12/26/23	4:00:00	12/31/23	14:48:00	12/26/23	6:10:00	12/31/23	14:30:00
4	ZIM CARMEL	9395927	CONTAINER	Tier I	Long Beach	TYM	126	1/2/24	3:30:00	1/3/24	4:25:00	1/2/24	7:55:00	1/3/24	4:00:00
5	ZIM FELIXSTOWE	9227039	CONTAINER	Tier I	Long Beach	TYM	126	1/9/24	3:15:00	1/10/24	4:06:00	1/9/24	5:11:00	1/10/24	4:00:00
6	ACGI IVAR REEFER	8819938	REEFER	Tier I	Long Beach	TYM	126	1/15/24	6:50:00	1/15/24	14:56:00	1/15/24	8:02:00	1/15/24	14:28:00
7	ZIM SEASPAN LONCOMILLA	9437385	CONTAINER	Tier I	Long Beach	TYM	126	1/16/24	14:30:00	1/17/24	17:05:00	1/16/24	16:20:00	1/17/24	15:50:00
8	ACGI IVAR REEFER	8819938	CONTAINER	Tier I	Long Beach		212	1/18/24	18:50:00	1/19/24	2:13:00	1/18/24	20:27:00	1/19/24	1:55:00
9	ZIM SEASPAN KOBE	9492701	CONTAINER	Tier II	Long Beach	TYM	126	1/22/24	15:05:00	01/23/0204	17:08:00	1/22/24	16:33:00	01/23/0204	16:45:00
10	ACGI ICE RUNNER	8311120	CONTAINER	Tier 1	Long Beach		212	1/26/24	5:30:00	1/26/24	12:00:00	1/26/24	6:42:00	1/26/24	11:37:00
11	ACGI CS TRUST	9438511	CONTAINER	Tier I	Los Angeles		12	1/29/24	7:35:00	1/29/24	13:58:00	1/29/24	8:30:00	1/29/24	13:30:00
12	ZIM SEASPAN CHIBA	9492713	CONTAINER	Tier II	Long Beach	TYM	126	1/29/24	14:55:00	1/31/24	5:10:00	1/29/24	16:40:00	1/31/24	4:55:00
13	ACGI CS TRUST	9438511	CONTAINER	Tier I	Long Beach		12	2/1/24	18:05:00	2/1/24	23:10:00	2/1/24	18:53:00	2/1/24	22:57:00
14	ZIM CARMEL	9395927	REEFER	Tier I	Long Beach		126	2/5/24	16:15:00	2/7/24	3:25:00	2/5/24	17:30:00	2/7/24	3:00:00
15	ACGI COOL MAGNUS	9167801	CONTAINER	Tier I	Long Beach		212	2/9/24	8:50:00	2/9/24	16:00:00	2/9/24	10:22:00	2/9/24	15:57:00

CARB
EXECUTIVE ORDERS

For the Future

State of California
AIR RESOURCES BOARD

Executive Order G-23-294

CARB Approval of the STAXbox.A-1 system used to control emissions from container vessels for compliance with the Control Measure for Ocean-Going Vessels At Berth

STAX Engineering (STAX)
STAXbox.A-1

WHEREAS August 27, 2020, the California Air Resource Board (CARB) adopted the Control Measure for Ocean-Going Vessels (OGV) At Berth, California Code of Regulations, sections 93130 - 93130.22 (2020 At Berth Regulation), which establishes requirements for ocean-going vessels at berth in a California port to reduce oxides of nitrogen (NOx), diesel particulate matter (PM), and reactive organic gases (ROG) emissions from auxiliary engines;

WHEREAS section 93130.5 of the 2020 At Berth Regulation establishes requirements for an emission control strategy to qualify as a CARB Approved Emission Control Strategy (CAECS) that can be used to reduce emissions from ocean-going vessel auxiliary engines and applicable tanker auxiliary boilers while at berth in a California port;

WHEREAS no emission control strategy may be used to comply with the requirements of the 2020 At Berth Regulation unless CARB approves it as a CAECS;

WHEREAS the 2020 At Berth Regulation requires that the emission control strategy, if applicable for auxiliary engines, achieves emission rates of less than 2.8 grams per kilowatt hour (g/kW-hr) for NOx, 0.03 g/kW-hr for PM 2.5, and 0.1 g/kW-hr for ROG demonstrated through testing conducted under a CARB approved Test Plan as specified in section 93130.5(d) of the 2020 At Berth Regulation;

WHEREAS for strategies approved after 2020, greenhouse gas (GHG) emissions from the strategy must be grid-neutral using the grid emission rate for the year that the technology is granted an Executive Order, as specified under section 93130.5(d);

WHEREAS the 2020 At Berth Regulation requires that the emission control strategy, if applicable for tanker auxiliary boilers, achieves emission rates less than 0.4 g/kW-hr for NOx, 0.03 g/kW-hr for PM 2.5, and 0.02 g/kW-hr for ROG demonstrated through testing conducted under a CARB approved Test Plan as specified in section 93130.5(d);

WHEREAS STAX developed STAXbox.A-1, a barge-based capture and control system to reduce emissions from the auxiliary engines on an ocean-going vessel while at berth;

WHEREAS, STAXbox.A-1 consists of the following components and subcomponents as specified in the Description of Control Strategy in "Test Plan: STAXbox Emissions Control System" (Test Plan) including: an exhaust capture system using flexible ducting, and an emission control system comprising of a particulate filter and Selective Catalytic Reduction (SCR) unit to reduce NOx, PM, and ROG;

WHEREAS STAX submitted their final Test Plan on February 28, 2023, and CARB issued STAX a Test Plan approval letter on April 10, 2023;

WHEREAS STAX submitted the "Emissions Measurement from Ocean Going Container Vessels Using a Capture and Control System" (Test Report) and "Application for CARB Approval of STAX Engineering's STAXBox Emissions Control System as a CARB Approved Emissions Control Strategy (CAECS)" (request for Executive Order) for the STAXbox.A-1, dated May 2, 2023;

WHEREAS CARB reviewed and evaluated the Test Report and request for Executive Order for the STAXBox Emissions Control System based on the requirements specified in the 2020 At Berth Regulation;

WHEREAS CARB found the submitted documents indicate STAXbox.A-1 achieves the emission reductions and has GHG emissions that are grid neutral for 2023 as stated in the Test Report and required by the 2020 At Berth Regulation under section 93130.5(d);

WHEREAS the Executive Officer finds it is appropriate to issue this Executive Order that identifies the operating conditions, recordkeeping, and monitoring requirements for STAX's use of the STAXbox.A-1 to allow its use as a CAECS for compliance with the 2020 At Berth Regulation;

WHEREAS this approval does not constitute an air pollution or land use permit, nor does it relieve the responsibility of STAX or the end user to comply with all Federal, State, and local laws, rules, and regulations;

WHEREAS STAX is subject to the 2020 At Berth Regulation as a CAECS operator;

NOW, THEREFORE, IT IS ORDERED that the STAXbox.A-1 is approved for use in demonstrating compliance with the 2020 At Berth Regulation as a CAECS, when used by STAX as intended and in accordance with the following terms and conditions, and in accordance with all other applicable requirements in the 2020 At Berth Regulation.

APPROVED OPERATING CONDITIONS

Parameter	Value
Ocean-going vessel engine type	One auxiliary engine
Ocean-going vessel type	Container vessel
Ocean-going vessel fuel composition limitation	Marine distillate fuel meeting 0.1% sulfur content limit (0.1% sulfur marine gas oil (MGO) or marine diesel oil (MDO)), or R99/R100 renewable diesel fuels that meet the specifications of MGO/MDO
SCR inlet operating temperature range in degrees Fahrenheit (ºF)	600 – 720ºF
Ocean-going vessel engine maximum continuous rating (MCR) in kilowatts (kW)	3,500 kW

Parameter	Value
Ocean-going vessel allowable operating range (kW)	266 kW to 890 kW
Allowable exhaust flow rate in standard cubic feet per minute (scfm)	3,642 to 6,330 scfm of engine exhaust
Maximum engine exhaust temperature requirements	1,000ºF
Static Pressure	Differential pressure between -2 to -20 inches of water across the diesel particulate filter
Other parameters that affect performance	1-2 inches of water back pressure at the capture system inlet
GRID Neutral Target – CA CO2e state output emission rate from eGRID2021 in pounds per megawatt hour (lb/MWh)	480.5 lb/MWh
Maximum CAECS auxiliary generator operating load (kW)	382 kW
CAECS auxiliary generator renewable diesel carbon intensity limit in grams of carbon dioxide equivalent per megajoule of fuel (g CO2e/MJ)	29.49 g CO2e/MJ fuel
Maximum ammonia slip emissions in parts per million by volume, dry basis (ppmdv)	5 ppmdv averaged over 60 minutes

OPERATIONAL REQUIREMENTS

BE IT FURTHER ORDERED, STAX will operate the STAXbox.A-1 following the notification and operational requirements per sections 93130.12(b)(1) and 93130.12(b)(2):

1. At least seven calendar days before a vessel's arrival, the operator of the CAECS must coordinate in writing with the vessel operator and terminal operator for the use of the strategy and supply the vessel operator with information about the compatibility with the vessel and terminal of the CAECS.
2. During each visit, the operator of the CAECS shall:
    a. Begin controlling emissions within two hours of vessel "Ready to Work";
    b. Record inlet and outlet levels of emissions during the visit;
    c. Continue controlling emissions until at least one hour before "Pilot on Board"; and
    d. Ensure vessels are operating on CARB compliant distillate marine fuel.

MONITORING REQUIREMENTS

BE IT FURTHER ORDERED, for every 1,000 hours of operation (and at a minimum annually), STAX shall submit data to the Executive Officer from the continuous emission monitoring system (CEMS) for each visit the CAECS is operated, to verify that the emission reduction levels are maintained, paying the applicable Certification Fee for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914) for each visit.

BE IT FURTHER ORDERED, the CEMS parameters submitted to the Executive Officer must follow the parameters and measurement methods listed in STAX's Test Plan submitted on February 28, 2023.

BE IT FURTHER ORDERED, within 30 days of a vessel departure, for every visit where STAXbox.A-1 is used as a CAECS, STAX shall report to CARB visit information as required by section 93130.12(b)(3).

BE IT FURTHER ORDERED, within seven days of a vessel departure, STAX shall report to their vessel operator customers the information necessary for vessel operators to submit their visit information to CARB as required by section 93130.7(e)(4), including the following:

1) Emissions control start date and time
2) Emission control end date and time
3) Details on any delays or interruptions while controlling emissions and the times that emission reductions were uncontrolled during the visit.

BE IT FURTHER ORDERED, when vessel operators submit visit information to CARB as required by section 93130.7(e)(4), the vessel operator must also report the following information per the compliance instructions for section 93130.7(e)(4)(Q):

1) Total power generated by vessel's auxiliary engines while at berth in kW-h. Data must be recorded at a minimum once an hour.

BE IT FURTHER ORDERED, within seven days of a vessel departure, STAX shall report to their terminal operator customers the information necessary for terminal operators to submit their visit information to CARB as required by section 93130.9(d)(5), including the following:

1) Emissions control start date and time;
2) Emission control end date and time;
3) Details on any delays or interruptions while controlling emissions and the times that emission reductions were uncontrolled during the visit.

BE IT FURTHER ORDERED, STAX shall maintain the STAXbox.A-1in accordance with "Section 5. Maintenance" of STAX's Test Plan.

BE IT FURTHER ORDERED, the Executive Officer may request that the STAXbox.A-1 be tested annually using the test methods specified in the 2020 At Berth Regulation to demonstrate the overall percentage of the emission reduction being achieved, and the results of such testing shall be provided to the Executive Officer within 30 days of testing per section 93130.5(j) of the 2020 At Berth Regulation.

MALFUNCTION REPORTING and RECORDKEEPING REQUIREMENTS

BE IT FURTHER ORDERED, STAX shall report within 24 hours to CARB, by electronic means, any malfunction that is expected to create emissions in excess of any applicable emissions

limitation for a period greater than one hour and shall retain for five years all records pertaining to the malfunction pursuant to section 93130.12.

BE IT FURTHER ORDERED, a delay or interruption in emissions control caused by a malfunction is eligible for remediation for the hours of uncontrolled emissions only when CARB is notified by STAX according to the provisions of section 93130.12(c).

BE IT FURTHER ORDERED, STAX shall submit a corrective action report within seven calendar days after a malfunction has been corrected as pursuant to section 93130.12(d).

BE IT FURTHER ORDERED, records made pursuant to section 93130.12 shall be kept for a minimum of five years and STAX shall submit information to CARB according to section 93130.19.

BE IT FURTHER ORDERED, this approval is subject to the following conditions:

- STAX must submit documentation, within 30 days upon request, to CARB showing STAXbox.A-1 is being maintained and the maintenance schedule in "Section 5. Maintenance" of STAX's Test Plan is being adhered to.
- STAX must keep records, including purchase receipts, for a minimum of five years, for renewable diesel purchases demonstrating the fuel used on the STAXbox.A-1 complies with the Approved Operating Conditions in this Executive Order.
- STAX must communicate with the vessel operator and ensure the vessel is only operating one auxiliary engine while the STAXbox.A-1 is controlling emissions.
- Delays or interruptions in emissions control caused by a malfunction, or when the operational requirements in section 93130.12(b)(2) are not met may result in enforcement actions and ultimately revocation of the EO unless the visits are made compliant through use of the Remediation Fund or with a Vessel Incident Event (VIE) or Terminal Incident Event (TIE).

DESIGN CHANGES AND EXTENSIONS

BE IT FURTHER ORDERED, no changes are permitted to STAXbox.A-1 design, or approved operating parameters set forth in STAX's application, test plan, and this Executive Order and its appendices, unless CARB is notified in advance per section 93130.5(i)(2). Design changes include changes to any part of the STAXbox.A-1 system including the exhaust capture hood, ducting, control equipment, and deployment platform. The changes must be approved in writing by the Executive Officer and any applicable Certification Fees for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914) must be paid before the modifications may be used for compliance with the 2020 At Berth Regulation. The Executive Officer may revoke this Executive Order if the STAXbox.A-1 design or approved operating parameters are changed without prior notification and approval by the Executive Officer.

BE IT FURTHER ORDERED, this Executive Order shall have a duration of five years from the date it is executed unless it is revoked by CARB as set forth in section 93130.5(l). As specified in section 93130.5(i)(1), at least six months prior to the expiration of this

Executive Order, STAX may apply for an extension by submitting an extension application to the Executive Officer asserting that the strategy has not changed and is still effective, following the requirements specified in section 93130.5(d) as provided in section 93130.5(i)(1) of the Control Measure, after paying any applicable Certification Fees for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914).

BE IT FURTHER ORDERED, marketing of the STAXbox.A-1 using any identification other than that shown in this Executive Order or marketing of the STAXbox.A-1 for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from CARB.

BE IT FURTHER ORDERED, this Executive Order does not relieve STAX from complying with all other applicable regulations.

BE IT FURTHER ORDERED, this Executive Order may be revoked if the Executive Officer determines that STAXbox.A-1 does not comply with any of the requirements in this Executive Order.

Executed at Sacramento, California, this 4th day of December, 2023.

Bonnie Soriano, Branch Chief
Freight Activity Branch
Transportation and Toxics Division

State of California
AIR RESOURCES BOARD

Executive Order G-24-054

CARB Approval of the STAXbox.A-1 system used to control emissions from auto carriers/roll-on roll-off (ro-ro) vessels for compliance with the Control Measure for Ocean-Going Vessels At Berth

STAX Engineering (STAX)
STAXbox.A-1

WHEREAS August 27, 2020, the California Air Resource Board (CARB) adopted the Control Measure for Ocean-Going Vessels (OGV) At Berth, California Code of Regulations, sections 93130 - 93130.22 (2020 At Berth Regulation), which establishes requirements for ocean-going vessels at berth in a California port to reduce oxides of nitrogen (NOx), diesel particulate matter (PM), and reactive organic gases (ROG) emissions from auxiliary engines;

WHEREAS section 93130.5 of the 2020 At Berth Regulation establishes requirements for an emission control strategy to qualify as a CARB Approved Emission Control Strategy (CAECS) that can be used to reduce emissions from ocean-going vessel auxiliary engines and applicable tanker auxiliary boilers while at berth in a California port;

WHEREAS no emission control strategy may be used to comply with the requirements of the 2020 At Berth Regulation unless CARB approves it as a CAECS;

WHEREAS the 2020 At Berth Regulation requires that the emission control strategy, if applicable for auxiliary engines, achieves emission rates of less than 2.8 grams per kilowatt hour (g/kW-hr) for NOx, 0.03 g/kW-hr for PM 2.5, and 0.1 g/kW-hr for ROG demonstrated through testing conducted under a CARB approved Test Plan as specified in section 93130.5(d) of the 2020 At Berth Regulation;

WHEREAS for strategies approved after 2020, greenhouse gas (GHG) emissions from the strategy must be grid-neutral using the grid emission rate for the year that the technology is granted an Executive Order, as specified under section 93130.5(d);

WHEREAS the 2020 At Berth Regulation requires that the emission control strategy, if applicable for tanker auxiliary boilers, achieves emission rates less than 0.4 g/kW-hr for NOx, 0.03 g/kW-hr for PM 2.5, and 0.02 g/kW-hr for ROG demonstrated through testing conducted under a CARB approved Test Plan as specified in section 93130.5(d);

WHEREAS STAX developed STAXbox.A-1, a barge-based capture and control system to reduce emissions from the auxiliary engines on an ocean-going vessel while at berth;

WHEREAS, STAXbox.A-1 consists of the following components and subcomponents as specified in the Description of Control Strategy in "Test Plan: STAXbox Emissions Control System" (Test Plan) including: an exhaust capture system using flexible ducting, and an

emission control system comprising of a particulate filter and Selective Catalytic Reduction (SCR) unit to reduce NOx, PM, and ROG;

WHEREAS STAX submitted their final Test Plan for ro-ro vessels on February 28, 2023, and CARB issued STAX a Test Plan approval letter on April 10, 2023;

WHEREAS STAX submitted the "Emissions Measurement from Ocean Going Roll On/Roll Off (RoRo) Vessels Using a Capture and Control System" (Test Report) for the STAXbox.A-1, on May 26, 2023 and request for Executive Order;

WHEREAS CARB reviewed and evaluated the Test Report and request for Executive Order for the STAXBox.A-1 Emissions Control System based on the requirements specified in the 2020 At Berth Regulation;

WHEREAS CARB found the submitted documents indicate STAXbox.A-1 achieves the emission reductions and has GHG emissions that are grid neutral for 2024 as stated in the Test Report and required by the 2020 At Berth Regulation under section 93130.5(d);

WHEREAS the Executive Officer finds it is appropriate to issue this Executive Order that identifies the operating conditions, recordkeeping, and monitoring requirements for STAX's use of the STAXbox.A-1 to allow its use as a CAECS for compliance with the 2020 At Berth Regulation;

WHEREAS this approval does not constitute an air pollution or land use permit, nor does it relieve the responsibility of STAX or the end user to comply with all Federal, State, and local laws, rules, and regulations;

WHEREAS STAX is subject to the 2020 At Berth Regulation as a CAECS operator;

NOW, THEREFORE, IT IS ORDERED that the STAXbox.A-1 is approved for use in demonstrating compliance with the 2020 At Berth Regulation as a CAECS, when used by STAX as intended and in accordance with the following terms and conditions, and in accordance with all other applicable requirements in the 2020 At Berth Regulation. The approved operating conditions including the vessel and engine types for which the STAXbox.A-1 is verified can be found in Attachment 1.

OPERATIONAL REQUIREMENTS

BE IT FURTHER ORDERED, STAX will operate the STAXbox.A-1 following the notification and operational requirements per sections 93130.12(b)(1) and 93130.12(b)(2):

1. At least seven calendar days before a vessel's arrival, the operator of the CAECS must coordinate in writing with the vessel operator and terminal operator for the use of the strategy and supply the vessel operator with information about the compatibility with the vessel and terminal of the CAECS.
2. During each visit, the operator of the CAECS shall:
    a. Begin controlling emissions within two hours of vessel "Ready to Work";
    b. Record inlet and outlet levels of emissions during the visit;

c. Continue controlling emissions until at least one hour before "Pilot on Board"; and
d. Ensure vessels are operating on CARB compliant distillate marine fuel.

MONITORING REQUIREMENTS

BE IT FURTHER ORDERED, for every 1,000 hours of operation (and at a minimum annually), STAX shall submit data to the Executive Officer from the continuous emission monitoring system (CEMS) for each visit the CAECS is operated, to verify that the emission reduction levels are maintained, paying the applicable Certification Fee for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914) for each visit.

BE IT FURTHER ORDERED, the CEMS parameters submitted to the Executive Officer must follow the parameters and measurement methods listed in STAX's Test Plan submitted on February 28, 2023.

BE IT FURTHER ORDERED, within 30 days of a vessel departure, for every visit where STAXbox.A-1 is used as a CAECS, STAX shall report to CARB visit information as required by section 93130.12(b)(3).

BE IT FURTHER ORDERED, within seven days of a vessel departure, STAX shall report to their vessel operator customers the information necessary for vessel operators to submit their visit information to CARB as required by section 93130.7(e)(4), including the following:

1) Emissions control start date and time
2) Emission control end date and time
3) Details on any delays or interruptions while controlling emissions and the times that emission reductions were uncontrolled during the visit.

BE IT FURTHER ORDERED, when vessel operators submit visit information to CARB as required by section 93130.7(e)(4), the vessel operator must also report the following information per the compliance instructions for section 93130.7(e)(4)(Q):

1) Total power generated by vessel's auxiliary engines while at berth in kW-h. Data must be recorded at a minimum once an hour.

BE IT FURTHER ORDERED, within seven days of a vessel departure, STAX shall report to their terminal operator customers the information necessary for terminal operators to submit their visit information to CARB as required by section 93130.9(d)(5), including the following:

1) Emissions control start date and time;
2) Emission control end date and time;
3) Details on any delays or interruptions while controlling emissions and the times that emission reductions were uncontrolled during the visit.

BE IT FURTHER ORDERED, STAX shall maintain the STAXbox.A-1in accordance with "Section 5. Maintenance" of STAX's Test Plan.

BE IT FURTHER ORDERED, the Executive Officer may request that the STAXbox.A-1 be tested annually using the test methods specified in the 2020 At Berth Regulation to demonstrate the overall percentage of the emission reduction being achieved, and the results of such testing shall be provided to the Executive Officer within 30 days of testing per section 93130.5(j) of the 2020 At Berth Regulation.

MALFUNCTION REPORTING and RECORDKEEPING REQUIREMENTS

BE IT FURTHER ORDERED, STAX shall report within 24 hours to CARB, by electronic means, any malfunction that is expected to create emissions in excess of any applicable emissions limitation for a period greater than one hour and shall retain for five years all records pertaining to the malfunction pursuant to section 93130.12.

BE IT FURTHER ORDERED, a delay or interruption in emissions control caused by a malfunction is eligible for remediation for the hours of uncontrolled emissions only when CARB is notified by STAX according to the provisions of section 93130.12(c).

BE IT FURTHER ORDERED, STAX shall submit a corrective action report within seven calendar days after a malfunction has been corrected as pursuant to section 93130.12(d).

BE IT FURTHER ORDERED, records made pursuant to section 93130.12 shall be kept for a minimum of five years and STAX shall submit information to CARB according to section 93130.19.

BE IT FURTHER ORDERED, this approval is subject to the following conditions:

- STAX must submit documentation, within 30 days upon request, to CARB showing STAXbox.A-1 is being maintained and the maintenance schedule in "Section 5. Maintenance" of STAX's Test Plan is being adhered to.
- STAX must keep records, including purchase receipts, for a minimum of five years, for renewable diesel purchases demonstrating the fuel used on the STAXbox.A-1 complies with the Approved Operating Conditions in this Executive Order.
- STAX must communicate with the vessel operator and ensure the vessel is only operating one auxiliary engine while the STAXbox.A-1 is controlling emissions.
- Delays or interruptions in emissions control caused by a malfunction, or when the operational requirements in section 93130.12(b)(2) are not met may result in enforcement actions and ultimately revocation of the Executive Order unless the visits are made compliant through use of the Remediation Fund or with a Vessel Incident Event (VIE) or Terminal Incident Event (TIE).

DESIGN CHANGES AND EXTENSIONS

BE IT FURTHER ORDERED, no changes are permitted to STAXbox.A-1 design, or approved operating parameters set forth in STAX's application, test plan, and this Executive Order and its appendices, unless CARB is notified in advance per section 93130.5(i)(2). Design changes include changes to any part of the STAXbox.A-1 system including the exhaust capture hood, ducting, control equipment, and deployment platform. The changes must be approved in

writing by the Executive Officer and any applicable Certification Fees for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914) must be paid before the modifications may be used for compliance with the 2020 At Berth Regulation. The Executive Officer may revoke this Executive Order if the STAXbox.A-1 design or approved operating parameters are changed without prior notification and approval by the Executive Officer.

BE IT FURTHER ORDERED, this Executive Order shall have a duration of five years from the date it is executed unless it is revoked by CARB as set forth in section 93130.5(l). As specified in section 93130.5(i)(1), at least six months prior to the expiration of this Executive Order, STAX may apply for an extension by submitting an extension application to the Executive Officer asserting that the strategy has not changed and is still effective, following the requirements specified in section 93130.5(d) as provided in section 93130.5(i)(1) of the Control Measure, after paying any applicable Certification Fees for the At Berth Regulation (Division 3, Chapter 16, Article 7, sections 2913 and 2914).

BE IT FURTHER ORDERED, marketing of the STAXbox.A-1 using any identification other than that shown in this Executive Order or marketing of the STAXbox.A-1 for an application other than those listed in this Executive Order shall be prohibited unless prior approval is obtained from CARB.

BE IT FURTHER ORDERED, this Executive Order does not relieve STAX from complying with all other applicable regulations.

BE IT FURTHER ORDERED, this Executive Order may be revoked if the Executive Officer determines that STAXbox.A-1 does not comply with any of the requirements in this Executive Order.

Executed at Sacramento, California, this 21st day of March, 2024.

Bonnie Soriano, Branch Chief
Freight Activity Branch
Transportation and Toxics Division

Attachment:1 Approved operating conditions for ro-ro vessels.

Attachment 1

APPROVED OPERATING CONDITIONS FOR RO-RO VESSELS

Parameter	Value
Ocean-going vessel engine type	One auxiliary engine
Ocean-going vessel type	Ro-ro vessel
Ocean-going vessel fuel composition limitation	Marine distillate fuel meeting 0.1% sulfur content limit (0.1% sulfur marine gas oil (MGO) or marine diesel oil (MDO)), or R99/R100 renewable diesel fuels that meet the specifications of MGO/MDO
STAXbox.A-1 exhaust capture hood	Flexible ducting
SCR inlet operating temperature range in degrees Fahrenheit (ºF)	600 – 720ºF
Ocean-going vessel engine maximum continuous rating (MCR) in kilowatts (kW)	3,500 kW
Ocean-going vessel allowable operating range (kW)	266 kW to 890 kW
Allowable exhaust flow rate in standard cubic feet per minute (scfm)	3,642 to 6,330 scfm of engine exhaust
Maximum engine exhaust temperature requirements	1,000ºF
Static Pressure	Differential pressure between -2 to -20 inches of water across the diesel particulate filter
Other parameters that affect performance	1-2 inches of water back pressure at the capture system inlet
GRID Neutral Target – CA CO2e state output emission rate from eGRID2022 in pounds per megawatt hour (lb/MWh)	457.5 lb/MWh
Maximum CAECS auxiliary generator operating load (kW)	320 kW
CAECS auxiliary generator renewable diesel carbon intensity limit in grams of carbon dioxide equivalent per megajoule of fuel (g CO2e/MJ)	19.16 g CO2e/MJ fuel
Maximum ammonia slip emissions in parts per million by volume, dry basis (ppmdv)	5 ppmdv averaged over 60 minutes

CARB-APPROVED TEST PLANS

For the Future

January 12, 2024

Michael Walker, CEO
STAX Engineering, Inc.
65 Pine Avenue, Suite 943
Long Beach, California 90802
m.walker@staxengineering.com

Dear Michael Walker:

California Air Resources Board (CARB) staff have reviewed the amended Test Plan for the barge-based STAXbox.A-1 system (XCRAFT-1 + XBOX-1P) to treat emissions from container vessel auxiliary engines.

STAX Engineering, Inc. (STAX) submitted "Research Test Plan to Expand Containership CAECS and Test XCap Connector" (Test Plan, Version 1, dated October 31, 2023) to CARB while Executive Order (EO) approval for the STAXbox.A-1 system was still pending. The STAXbox.A-1 was granted EO G-23-294 on December 4, 2023.

CARB staff reviewed the Test Plan (Version 1) and provided comments to STAX on December 15, 2023. At CARB staff's suggestion, STAX subdivided the testing identified in Test Plan (Version 1) and submitted Test Plan A (Version 2) on December 17, 2023, to include only testing for the purposes of 1) expanding the operating conditions for the STAXbox.A-1 system, and 2) evaluating the XCAP connector which is an added component that may be attached to the original flexible ducting connector to improve exhaust capture design. CARB staff met with STAX on December 19, 2023, and STAX revised and resubmitted Test Plan A (Version 3) later that same day. CARB staff reviewed Test Plan A (Version 3) and provided comments to STAX on December 20, 2023. STAX revised and resubmitted Test Plan A (Version 4) on December 21, 2023, though the title page of the document was not updated and still lists the December 19, 2023, date from the previous version. STAX submitted additional information on January 2, 2024, regarding the XCAP connector dimensions and the minimum and maximum exhaust pipe diameter that can be serviced using this XCAP. CARB staff reviewed Test Plan A (Version 4) and provided comments to STAX on January 10, 2024. STAX revised and resubmitted Test Plan A (Version 5, attached) on January 11, 2024.

Based on CARB staff's review, and pursuant to Health and Safety Code section 93130.5(f) of the 2020 At Berth Regulation, STAX's Test Plan A (Version 5, submitted January 11, 2024) is hereby approved in accordance with testing requirements under the 2020 At Berth Regulation and the CARB Recommended Emissions Testing Guidelines for Ocean-Going Vessels.

CARB approval is based on the system description, design, and operational procedures outlined in STAX's Test Plan A (Version 5). No changes or modifications are permitted to the STAXBox.A-1 system, including the capture system design and operation, without prior CARB approval. In order to modify EO G-23-294 to reflect the requested changes outlined in the Test Plan, STAX will need to complete all testing outlined in their Test Plan A (Version 5) and provide all reports generated from these tests.

The application requirements that STAX must meet to submit test results are outlined in section 93130.5 of the 2020 At Berth Regulation. Per section 93130.5(i) of the 2020 At Berth Regulation, if testing deviates from the approved Test Plan without prior CARB approval, the Executive Officer may deem the application incomplete or disapprove the application. An example of deviating from the Test Plan includes conducting testing on additional vessel visits beyond those approved in the Test Plan and claiming such visits qualify for the research exception set forth in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation. CARB reserves the right to request the results of any testing conducted beyond the testing described in the approved Test Plan.

Vessel visits that coincide with the tests specified in the approved test plan may count as a compliant visit under the research exceptions in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation; however, these sections only apply for testing identified in Test Plan A (Version 5) and conducted after the date of this letter when Test Plan A (Version 5) was approved. All testing must adhere to the system description, design, and operational procedures outlined in the approved Test Plan. To complete the testing outlined in Test Plan A (Version 5), a total of 12 vessel visits are approved to utilize the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e).

STAX is responsible for tracking the usage of the 12 approved vessel visits that may utilize the research exception, and STAX must provide a copy of the approved Test Plan to each vessel participating in the research. STAX is also responsible for communicating with the vessel operator to ensure the operator knows what tests are being performed during the visit, and which number out of the 12 approved visits the vessel is participating in. As noted above, any tests completed in excess of those approved in the Test Plan would not be eligible for the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e). If more than 12 vessel visits are needed to complete all the testing outlined in the approved Test Plan, STAX must seek additional approval from CARB.

Testing for a new purification train to be added to the XCRAFT-1 barge (XBOX-1S) and a new system (XCRAFT-2 + XBOX-2P) will be addressed in future Test Plan(s).

If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at *angela.csondes@arb.ca.gov*.

Sincerely,

Bonnie Soriano, Chief, Freight Activity Branch, Transportation and Toxics Division

Enclosure: STAX CARB Expanded EO XCAP research test plan.005

cc: Angela Csondes, Section Manager, Marine Strategies Section

March 7, 2022

Michael Walker, CEO
STAX Engineering, Inc.
65 Pine Avenue, Suite 943
Long Beach, California 90802
m.walker@staxengineering.com

Dear Michael Walker:

The California Air Resources Board (CARB) staff reviewed STAX Engineering's (STAX) Test Plan (Test Plan) for the mobile water-based Xcap™ and STAXbox™ capture and control system to treat emissions from tanker auxiliary engines and boilers for use as a CARB Approved Emissions Control Systems (CAECS).

On November 23, 2021, STAX submitted a Test Plan to obtain approval for the barge-based Xcap and STAXbox to be used as a CAECS for compliance with the 2020 Control Measure for Ocean-Going Vessels At Berth (2020 At Berth Regulation). CARB staff reviewed the Test Plan and submitted comments to STAX staff on December 3, 2021, December 31, 2021, January 24, 2022, and February 18, 2022. To address staff's comments, STAX staff revised the Test Plan on December 22, 2021, January 8, 2022, January 30, 2022, and again on February 21, 2022.

Based on CARB staff's review, and pursuant to section 93130.5(f) of the 2020 At Berth Regulation, STAX's Test Plan (Dated February 21, 2022, attached) is hereby approved in accordance with testing requirements under 2020 At Berth Regulation and CARB's Recommended Emissions Testing Guidelines for Ocean-Going Vessels. In order to obtain CARB's Executive Officer's approval of STAX's emissions control strategy application, STAX will need to complete all testing outlined in their Test Plan submitted on February 21, 2022, and provide all reports generated from these tests along with an application for an Executive Order. The application requirements that STAX must meet to submit test results are outlined in section 93130.5 of CARB's 2020 At Berth Regulation.

Vessel visits that coincide with these tests may count as a compliant visit under the 2017 Advisory Scenario 5 or the research exceptions in section 93130.8 (d) or 93130.10 (e) of the 2020 At Berth Regulation; however, these sections only apply for testing identified in the Test Plan and conducted after March 7, 2022, when the Test Plan was approved.

If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at *angela.csondes@arb.ca.gov*.

Sincerely,

Heather Arias, Chief, Transportation and Toxics Division

Enclosure: STAX CARB Test Plan.tanker.005 with appendices.pdf

cc: Angela Csondes, Section Manager, Marine Strategies Section

February 16, 2024

Michael Walker, CEO
STAX Engineering, Inc.
65 Pine Avenue, Suite 943
Long Beach, California 90802
m.walker@staxengineering.com

Dear Michael Walker:

California Air Resources Board (CARB) staff have reviewed the amended Test Plan B for the two barge-based STAXbox.A-1 systems (XCRAFT-1 + XBOX1-2; XCRAFT-2 + XBOX2-1) to treat emissions from container vessel auxiliary engines.

STAX Test Plan Submission History

On October 31, 2023, STAX Engineering, Inc. (STAX) submitted "Research Test Plan to Expand Containership CAECS and Test XCap Connector" (Expanded Test Plan) to CARB while Executive Order (EO) approval for the STAXbox.A-1 system, under STAX's original test plan for container vessels, was still pending. The STAXbox.A-1 was granted EO G-23-294 on December 4, 2023.

CARB staff reviewed the Expanded Test Plan and provided comments to STAX on December 15, 2023. At CARB staff's suggestion, STAX subdivided the testing identified in the Expanded Test Plan into Test Plans A and B.

- Test Plan A was approved separately in a letter to STAX dated January 12, 2024, and includes testing for the purposes of expanding the operating conditions for the STAXbox.A-1 system and evaluating the XCAP connector. Upon successful completion of the testing and performance demonstration described in Test Plan A, EO G-23-294 will be amended to include the expanded operating conditions and the XCAP connector.
- STAX submitted Test Plan B on December 23, 2023, which includes testing for the purposes of demonstrating equivalency of two additional STAXbox.A-1 purification trains (XBOX1-2 and XBOX2-1) to the train approved under Test Plan A so the two additional trains can be used for compliance with the 2020 At Berth Regulation.

CARB staff reviewed Test Plan B and provided comments to STAX on January 19, 2024. To address CARB staff's comments, STAX revised and resubmitted Test Plan B on January 21, 2024 (though this document is dated January 22, 2024). CARB staff met with STAX on February 8, 2024 to discuss Test Plan B and the process for approving duplicate systems, and provided comments following the meeting. To address CARB staff's comments, STAX revised and resubmitted Test Plan B on February 8, 2024 (though this document is dated February 9, 2024).

Stipulations for CARB Approval of Test Plan B

Based on CARB staff's review, and pursuant to Health and Safety Code section 93130.5(f) of the 2020 At Berth Regulation, STAX's Test Plan B (submitted February 8, 2024, attached) is hereby approved in accordance with testing requirements under the 2020 At Berth Regulation and the CARB Recommended Emissions Testing Guidelines for Ocean-Going Vessels. To complete the testing outlined in Test Plan B (submitted February 8, 2024), a total of 20 vessel visits (10 visits per train) are approved to utilize the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e).

The two additional trains (XBOX1-2 and XBOX2-1) are duplicates of the modified XBOX1-1 train approved under Test Plan A. Since there are modifications to the XBOX1-1 train that are pending approval under Test Plan A, the testing described in Test Plan A must be completed by STAX and reviewed and approved by CARB before STAX's two additional trains (XBOX1-2 and XBOX2-1) can be granted Executive Order approval for compliance with the 2020 At Berth Regulation.

CARB approval is based on the system description, design, and operational procedures outlined in STAX's Test Plan B (submitted February 8, 2024). No changes or modifications are permitted to the STAXBox.A-1 system, including the capture system design and operation, without prior CARB approval. CARB approval for the STAXBox.A-1 system remains limited to containership auxiliary engines and one engine/exhaust stream only. Although the XCRAFT-1 barge is equipped with XBOX1-1 and XBOX1-2, STAX is only approved to operate one XBOX at a time. No simultaneous control of two auxiliary engines shall be performed. STAX will need to complete all testing outlined in their Test Plan B (submitted February 8, 2024) and provide all reports generated from these tests.

The application requirements that STAX must meet to submit test results are outlined in section 93130.5 of the 2020 At Berth Regulation. Per section 93130.5(i) of the 2020 At Berth Regulation, if testing deviates from the approved Test Plan without prior CARB approval, the Executive Officer may deem the application incomplete or disapprove the application. An example of deviating from the Test Plan includes conducting testing on additional vessel visits beyond those approved in the Test Plan and claiming such visits qualify for the research exception set forth in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation. CARB reserves the right to request the results of any testing conducted beyond the testing described in the approved Test Plan.

Vessel visits that coincide with the tests specified in the approved test plan may count as a compliant visit under the research exceptions in section 93130.8(d) or 93130.10(e) of the 2020 At Berth Regulation; however, these sections only apply for testing identified in Test Plan B (submitted February 8, 2024) and conducted after the date of this letter when Test Plan B was approved. All testing must adhere to the system description, design, and operational procedures outlined in the approved Test Plan B.

STAX is responsible for tracking the usage of the 20 approved vessel visits that may utilize the research exception, and STAX must provide a copy of the approved Test Plan B to each vessel participating in the research. STAX is also responsible for communicating with the vessel operator to ensure the operator knows what tests are being performed during the visit, and which number out of the 20 approved visits the vessel is participating in. As noted above, any tests completed in excess of those approved in the Test Plan B would not be eligible for the research exception to compliance with the 2020 At Berth Regulation set forth in section 93130.8(d) or 93130.10(e). If more than 20 vessel visits are needed to complete all the testing outlined in the approved Test Plan, STAX must seek additional approval from CARB.

If you have any questions, please contact Angela Csondes, Manager, Marine Strategies Section, at *angela.csondes@arb.ca.gov*.

Sincerely,

Bonnie Soriano, Chief, Freight Activity Branch, Transportation and Toxics Division

Attachment: [STAX CARB Expanded EO XCAP research test plan new systems .003.docx]

cc: Angela Csondes, Section Manager, Marine Strategies Section

RESUMES

For the Future

Michael D. Walker

President | Chief Executive Officer

Market Growth Specialist | Transformational Executive Leader

Dynamic **C-Level Executive offering 20+ years of P&L oversight, leading the** acquisition of **$30M in projects** and generated **$15M in annual revenue** across domestic and global operations. Agile CEO with keen understanding of business operations and cultivating strategic relationships. Recognized as a thought leader for wastewater treatment industry. Demonstrated leadership in spearheading operational start-up, raising venture capital, building lean and productive teams, generating excellent ROI, and developing strategic partnership that propeled growth from ZERO to **$15M in peak revenue**.

EXECUTIVE CAREER HIGHLIGHTS

PROJECT MANAGEMENT | Effectively secured $29.5M in commercial contracts.
RAISING CAPITAL | Raised $35M in venture capital and private equity firms.
TEAM DEVELOPMENT |Built a team of 50 cross-functional employees from the ground up.
PRODUCT DEVELOPMENT | Led successful commercialization of Baswood Technology from beta installation to thriving industrial marketplace.

LEADERSHIP EXPERIENCE

Chief Executive Officer | Board of Directors, BASWOOD CORPORATION | Santa Barbara, CA *01/2008-12/2018*
Global leader in commercial waste treatment and environmental services industry leader. Overcame high barriers and implemented new technology model despite risk aversion to multiple industries--food and beverage; municipal; and oil and gas industries. Awarded the 2017 Technology Innovation Award by Frost & Sullivan for ground-breaking approach with a significantly smaller energy footprint. Recognized as a "market disruptor" for pioneering wastewater solutions that provide customers with significant cost-reduction and high return on investment (ROI).

Managed operational model and business strategy from pre commercialization start up phase to successful market penetration and integration. Led execution of business development strategies and partnerships, developed recurring revenue model, and established global supply chain. Created financial proformas and budget models and led all aspects of fundraising. Focused on increasing shareholder value and established Baswood as the preeminent technology provider in the marketplace.

Board of Directors, CURVATURE (Formerly NETWORK HARDWARE) | Santa Barbara, CA *01/2010-01/2013*
IT company focused on managing, maintaining and upgrading equipment and support for multivendor and multinational networks and data centers. Currently a strategic partner for 15,000+ organizations globally, specialized in delivering 24/7 global technical support, advanced hardware replacement, and completed lifecycle management of networking and data center equipment under one global contract from locations in the Americas, Europe, and Asia.

Vice President of Sales & Business Development, GIVELINE, INC.| Austin, TX *12/2005-11/2007*
Revolutionary e-commerce platform for the community-minded shopper where every transaction generated a charitable contribution to a favorite non-profit organization. Maintained direct supplier relationships to ensure 10% of all purchases are contributed to a preferred charity.

Vice President of Sales & Business Development, DEMARC SECURITY| Carpinteria, CA 06/*2004-09/2005*
Provided threat management solutions for commercial, civilian government, military installations, and internationally. Offered threat management system in hardware and software editions for networks, servers, desktops, and wireless devices. Used in small businesses, enterprises, financial institutions, healthcare and education organizations.

EDUCATION

Bachelor of Science in Finance | UNIVERSITY OF SOUTHERN CALIFORNIA

Bob Sharp

Bob Sharp's mission is to help people worldwide, in a meaningful way, through new technologies that promotes health, sustainability, reduced environmental toxins and reduced global warming. STAX™, TRUX™, and TRAX™ are the first of these technologies that can have an immediate impact on the well-being of millions of people residing near port cities while also significantly reducing global warming.

Founder and President, STAX Engineering, 2016 - Present

Mr. Sharp is the world-expert in the very specialized field of mobile remote emissions controls. His latest design, the STAX™, is a vessel that attaches directly to the exhaust pipes of oceangoing vessels at port to capture and purify ~100% of harmful air emissions while also reducing global warming. Mr. Sharp has identified over 20 patentable concepts, eight of which are currently pending, giving STAX™ a major advantage compared to incumbent technology.

Independent Contractor, ACTI / AEG, 2004 – 2016
Concept, design, development, project-management, certification, and operation of mobile emissions control systems.

Co-Owner, Fitness franchise, 2004 – 2011

Founder and President, DAC Systems, 1998 – 2004
Manufacturer of environmental and space simulation equipment, an electronic instrument product line, and software. Customers include Raytheon, Northrop-Grumman, Toyota, and NASA JPL.

Project Manager, Ransco, 1988 – 1998
Large-scale environmental simulation equipment, such as climatic wind tunnels for automobiles. Customers include Toyota, General Motors, Ford, & Chrysler.

Founder and President, Bob Sharp Engineering, 1995 – 1997
Printed circuit board (PCB) design, aerospace power supplies, handwriting robot

Reliability Laboratory Manager, Northrop, 1985 – 1988
Systems engineering for cruise missile target drones.

EDUCATION

Dual Engineering Degrees: Mechanical Engineering + Electrical Engineering

California Polytechnic State University-San Luis Obispo, 1981 - 1985

PATENTS

- *Sectioned Exhaust Filter System* (#US 10,550,748)
- *Water Conservation Device for an Exhaust Treatment* (#US 10,513,957)
- *Exhaust Gas Capture System for Ocean Going Vessels* (#US 8,402,746)
- *Exhaust Gas. Diverter and Collection System for Ocean Going* Vessels (#US 9,089,806).
- Additional nine (9) patents pending, with another 14 patents in process.

J. M. HOLMES, CAPT, USCG (RET.)

Captain Holmes is an Independent Marine Consultant and a maritime specialist with 40 years of experience in positions that include Chief Operating Officer, Fortune 500 executive, and senior level Coast Guard Officer. His clients have included The Port of Oakland, The Port of Long Beach, the Defense Threat Reduction Agency and the International Atomic Energy Agency.

From 2014 to 2017 Captain Holmes was a consultant for the Advanced Environmental Group, a Long Beach Company that developed and placed into service one of the first barge-based emission reduction systems. In this capacity he was responsible for the safety and operations of the barge. This included installing the emission control system, meeting regulatory requirements, developing operating procedures, interface and coordination with shipping lines, and planning and overseeing barge operations.

Prior to his current position Captain Holmes served as Deputy Executive Director for the Port of Los Angeles, where he was responsible for managing the day-to-day operations at the nation's largest port. Before joining the port, Captain Holmes was Chief Operating Officer of the Marsec Group, a consulting firm specializing in maritime operations and security. Prior to this, Captain. Holmes was a Vice President at Science Applications International Corporation, where he implemented technological solutions to homeland security challenges.

Captain. Holmes retired from the U.S. Coast Guard in 2003 following 27 years of service. His posts included Captain of the Port for the Los Angeles-Long Beach port complex. Captain Holmes was at the helm on September 11, 2001, and has been credited with actions that led to the creation of number of national maritime security initiatives. During his Coast Guard Career, Captain Holmes specialized in vessel operations and regulatory compliance, serving as Captain of the Port of both Saint Louis and Los Angeles/Long Beach, and Supervisor of the Coast Guard Marine Safety Detachments in American Samoa and Singapore.

Captain. Holmes was a member of the Marine Board of the Transportation Research Board of the National Academy of Sciences from 2008 until 2016. Captain Holmes holds bachelor's degrees in English and Education from Boston College, a master's degree in business administration from Washington University, and a Doctorate in Policy, Planning and Development from the University of Southern California.

Randall Pasek, Ph.D.

GOVERNMENT RELATIONS AND GREEN TECHNOLOGY DEVELOPMENT LEADER

Accomplished government liaison and technology development executive with proven experience in developing and bringing to market innovative air pollution control technologies and solutions in the challenging California regulatory environment. Leverage over 30 years of regulatory and private industry experience to navigate regulatory and business challenges to improve services and technologies to meet the most demanding customer needs.

STAX ENGINEERING, INC., Long Beach, CA **2018 – present**

A start-up privately owned green technology company serving the ocean shipping industry

Consultant

Assist with regulatory compliance for STAX technology design, development, and implementation.

- Liaise with local (South Coast AQMD), and state (California Air Resources Board) regulatory agencies to speed development and acceptance of compliance plans and strategies.
- Develop strategies in concert with other Executive staff to raise funds, develop markets, meet regulatory requirements, and establish partnerships to commercialize technology.

AIR QUALITY CONSULTING, Long Beach, CA **2015 – present**

Independent Contractor for international air quality consulting firm

President

- Provide expert services for navigating the complex air quality regulatory environment, air quality planning, pollution inventory development, and compliance strategies.
- Expertise on advanced technology research development and deployment with expertise on emission reduction programs and strategies for large diesel engines.

ADVANCED ENVIRONMENTAL GROUP, LLC, Long Beach, CA **2015 – 2017**

A start-up privately owned air pollution control technology company serving the ocean shipping industry

Vice President, Technology and Government Relations

- Directed operations for developing, improving, and building advanced technology for large diesel engine emission control systems for use on ocean going vessels.
- Lead regulatory strategy development and implementation for both company and customers.
- Managed operations, maintenance, and design of emissions capture and control system.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Diamond Bar, CA **2006-2015**

Los Angeles area regulatory agency for air pollution control with over 500 employees

Manager, Mobile Source Division

- Managed multi-million-dollar research development and deployment programs covering advanced air pollution control aftertreatment and advanced engine development and deployment for heavy-duty diesel equipment.

CALIFORNIA AIR RESOURCES BOARD, Sacramento, CA **1985 – 2003**

California regulatory agency for air pollution control with over 1,300 employees

Program Manager

- Directed 40+ staff in the day-to-day operations of the emissions inventory, and inventory related planning and policy, regulation development, and research and development programs for stationary and mobile sources.

EDUCATION AND CERTIFICATIONS

- MBA, Ecole des Ponts International School of Business, Paris France
- PH.D., Mechanical Engineering, University of California, Davis
- M.S., Chemical Engineering, University of California, Santa Barbara
- B.S., Chemical Engineering, University of California, Davis
- State of California Certified Professional Chemical Engineer

Xavier Valenzuela

Gardena, CA
(310) 502 – 7405
XValenzuela52@csum.edu

EXPERIENCE

Cal Maritime **Jun 2021 – May 2024**
Engineering Internships *San Diego, CA*

- Senior Engineer for overseeing repairs and upgrades to various ship systems, including Ship Service Diesel Generator, Distiller, Reverse Osmosis, and oily waste purifier.
- Supervised and trained freshman engineers in ship practices including: adherence to safety protocols, following operational standards, and maintenance procedures.
- Monitored and analyzed engine room components for potential services or repairs, demonstrating proficiency in equipment monitoring, maintenance, and troubleshooting.
- Supported licensed officers in conducting oily waste transfer operations, showcasing teamwork and operational support skills.
- Collaborated with ship personnel and officers aboard the United States Navy Ship Grasp, facilitating effective communication and teamwork.

Projects **Sep 2022 – May 2024**
Technical Applications *Vallejo, CA*

- 2023-2024 Micro Hydro Power Regenerative Energy Plant
- 2023 Arduino Controlled Robot Remote Controlled Car
- 2023 Arduino Controlled Motion Detection
- 2022 Axial Flux 3D Printed Motor

EDUCATION

California State University Maritime Academy **May 2024**
Bachelor of Science in Mechanical Engineering *Vallejo, CA*

- **Concentration**: Coast Guard Certifications
- **Relevant Coursework**: Engineering Mechanics, Control Systems, Plant Operations, Diesel Engineering, Manufacturing Processes, Instrumentation and Measure Systems, Steam Plant Watch Team Management, Advanced Fluid Mech and Thermodynamics, Electrical Circuit and Electronics, Naval Architecture, Mechatronics System Design, Shipboard Medical, Fluid Mechanics, Mechanics of Materials, Mechanical Design, Electromechanical Machinery, Energy System Design, Heating Ventilation A/C, Arduino Control Systems

SKILLS & CERTIFICATIONS

- **Languages:** Native in English; Fluent in Spanish (speaking, reading, writing)
- **Programs:** MATLAB and C++
- **Skills:** CAD software, SolidWorks, AutoCAD, and Finite Element Analysis software
- **Certifications**: Coast Guard License, Merchant Mariner Credential, Transportation Worker Identification Credential, Firefighting, CPR, Welding, Refrigeration

LUIS A. CALDEVILLA

24072 LANDISVIEW AVE.
LAKE FOREST, CA 92630
LACALDEVILLA@GMAIL.COM
+1(949)463-7019

OBJECTIVES

Marine Engineer with extensive troubleshooting, maintenance, commissioning and testing experience in the Marine and Oil & Gas (offshore) industry as Engineer Officer and Service Engineer.

EXPERIENCE

Currently, **SYSTEMS MANAGER** at STAX Engineering.

From August 2022 to February 2023, **FIELD SERVICE TECHNICIAN** at Johnson Matthey.

From December 2020 to August 2022, **INTERNATIONAL SERVICE ENGINEER** at Alfa Laval

From November 2014 to December 2020, **INTERNATIONAL SERVICE ENGINEER** at Compass Water Solutions.

As **ENGINEER OFFICER** I have worked on different types of ships: LNGs, Container ships, Ro-Pax and different types of propulsion such as 2 and 4-stroke engines and steam turbines.

Below is a list of my Engineer Officer jobs grouped by rank:

As 2nd Assistant Engineer	Ro-Pax ship Ciudad de Malaga from July to September 2013, owned by Acciona Trasmediterranea.
	Ro-Pax ship Daniya from November 2012 to March 2013, owned by Balearia.
As 3rd Assistant Engineer	Ro-Pax Ciudad de Malaga from August to November 2011 and June to August 2014. Ship owned by Acciona Trasmediterranea.
	Ro-Ro ship Superfast Levante from January to May 2012, ship owned by Acciona Trasmediterranea.
As Cadet Engineer	Ro-Ro ship Superfast Levante from August to October 2010, ship owned by Acciona Trasmediterranea.
	Ro-Pax ship Zurbaran owned by Acciona Trasmediterranea, from August 2008 to October 2008.
	Container ship Fernando M. Pereda owned by Naviera del Odiel, from October to December 2007.
	LNG ship Laieta owned by Maritima del Norte Inc. from December 2005 to April 2006.

SKILLS

MULTIDISCIPLINARY EXPERIENCE AND EDUCATION. Familiar with many of the systems and equipment used in regular industrial facilities such as boilers, generators, engines, pneumatic and hydraulic systems, PLCs and medium and low voltage electrical systems.

TROUBLESHOOTING. Good knowledge of electrical, thermodynamic, pneumatic and hydraulic principles. Several years of experience in troubleshooting and repair of a wide variety of industrial equipment.

MAINTENANCE. Extensive hands-on experience in preventive, predictive and corrective maintenance and mechanical skills. Education in Industrial Maintenance including maintenance planning and basic project management skills.

PLCS. Proficient in Allen-Bradley (RSLogix 500 and RSLogix 5000/Studio 5000) Siemens (Logo! Soft Comfort) and Idec (Automation Organizer) at programming, maintenance and troubleshooting level.

TESTING AND QUALITY ASSURANCE. Experience in factory acceptance tests in particularly complex projects or during heavy workload periods.

2D AND 3D CAD/CAM. Proficient in 2D CAD programs as Draftshight and AutoCad and familiar with 3D modeling software as Fusion 360 and Solidworks.

ADMINISTRATIVE DUTIES. Elaboration of service reports and training documentation. Continuous improvement of manuals, guides, maintenance and troubleshooting procedures and part lists.

CUSTOMER RELATIONSHIP. Extended experience as a Service Engineer in commissioning of new systems, operators training and third-party inspections for certification or quality issues. Phone and email assistance to customers.

COMPUTER SKILLS. Proficient in Microsoft Office Excel and Word, in training for the Microsoft Office Specialist exams. Familiar with Outlook and Power Point.

OFFSHORE TRAINING. In possession of the BOSIET with CA-EBS certification (Basic Offshore Safety Induction Emergency Training with Compressed Air Emergency Breathing System), MIST (Minimum Industry Safety Training), OG UK (Medical Certificate of Fitness for Offshore Work), Shoulder Measurement Certification and Vantage number.

LANGUAGES. Fluent in English. Spanish native.

EDUCATION

Master's degree in Industrial Maintenance in the Catholic University of Avila (Spain) in 2010.

Master's degree in Marine Engineering in the University of Oviedo (Spain) with the highest honors of the class of 2011.

Bachelor's degree in Marine Engineering in the University of Oviedo (Spain), with the highest honors of the class of 2008.

ADDITIONAL INFORMATION

- US Permanent Resident authorized to work in the United States, and the European Union (Spanish Citizen).
- In possession of a TWIC card which allows access to secure areas of the USA maritime facilities and vessels.
- Certificate of Competency as Chief Engineer (up to 10,000 kW) and First Assistant Engineer Officer (unlimited).
- Basic Offshore Safety Induction and Emergency (BOSIET) Training with Compressed Air Emergency Breathing System, which allows me to travel to offshore facilities all over the world.

INSURANCE

For the Future

UNCOMMONLY INDEPENDENT

June 11, 2024

RE: Request For Proposals for On-Call Ocean-Going Vessel At Berth Emissions Control Services

Lockton Insurance Brokers, LLC has reviewed section 4.4 Indemnity and Insurance Requirements of the Request for Proposals and can confirm that STAX Engineering, Inc. will be able to meet the insurance requirements should they be selected for contract award.

Sincerely,

DocuSigned by:
Greg Hodges
C7BF5DC4BE1348F...

Greg Hodges
Account Executive, Assistant Vice President
CA License 0H78698
Lockton Insurance Brokers, LLC - CA License 0F15767

BRASHEARS & NEWENDORP
A Synchronized Approach To Insurance

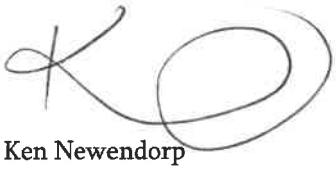
6/5/24

Insurance Verification Letter

To whom it may concern,

STAX Engineering has a commercial auto policy that meets the requirements set forth in your contract. They are insured by California Automobile Insurance Company (A, XIV) with a $1,000,000 limit of liability.

Thank you,



Ken Newendorp

Broker

FORMS

For the Future

EXHIBIT B

SMALL/VERY SMALL BUSINESS ENTERPRISE PROGRAM

The Harbor Department is committed to creating an environment that provides all individuals and businesses open access to the business opportunities available at the Harbor Department in a manner that reflects the diversity of the City of Los Angeles. The Harbor Department's Small Business Enterprise (SBE) Program was created to provide additional opportunities for small businesses to participate in professional service and construction contracts. An overall Department goal of 25% SBE participation, including 5% Very Small Business Enterprise (VSBE) participation, has been established for the Program. The specific goal or requirement for each contract opportunity may be higher or lower based on the scope of work.

It is the policy of the Harbor Department to solicit participation in the performance of all service contracts by all individuals and businesses, including, but not limited to, SBEs, VSBEs, women-owned business enterprises (WBEs), minority-owned business enterprises (MBEs), and disabled veteran business enterprises (DVBEs). The SBE Program allows the Harbor Department to target small business participation, including MBEs, WBEs, and DVBEs, more effectively. It is the intent of the Harbor Department to make it easier for small businesses to participate in contracts by providing education and assistance on how to do business with the City, and ensuring that payments to small businesses are processed in a timely manner. **In order to ensure the highest participation of SBE/VSBE/MBE/WBE/DVBEs, all proposers shall utilize the City's contracts management and opportunities database, the Regional Alliance Marketplace for Procurement (RAMP), at http://www.RAMPLA.org, to outreach to potential subconsultants.**

The Harbor Department defines a SBE as an independently owned and operated business that is not dominant in its field and meets criteria set forth by the Small Business Administration in Title 13, Code of Federal Regulations, Part 121. Go to www.sba.gov for more information. The Harbor Department defines a VSBE based on the State of California's Micro-business definition which is (1) a small business that has average annual gross receipts of $5,000,000 or less within the previous three years, or (2) a small business manufacturer with 25 or fewer employees.

The SBE Program is a results-oriented program, requiring consultants who receive contracts from the Harbor Department to perform outreach and utilize certified small businesses. **Based on the work to be performed, it has been determined that the percentage of small business participation will be 0%..** The North American Industry Classification System (NAICS) Code for the scope of services is **488390** This NAICS Code is the industry code that corresponds to at least 51% of the scope of services and will be used to determine the size standard for SBE participation of the Prime Consultant. The maximum SBE size standard for this NAICS Code is $47 million.

Consultant shall be responsible for determining the SBE status of its subconsultants for purposes of meeting the small business requirement. Subconsultants must qualify as an SBE based on the type of services that they will be performing under the Agreement. All business participation will be determined by the percentage of the total amount of compensation under the agreement paid to SBEs. The Consultant shall not substitute an SBE firm without obtaining prior approval of the City. A request for substitution must be based upon demonstrated good cause. If substitution is permitted, Consultant shall endeavor to make an in-kind substitution for the substituted SBE.

Consultant shall complete, sign and submit as part of the executed agreement the attached Affidavit and Consultant Description Form. The Affidavit and Consultant Description Form, when signed, will signify the Consultant's intent to comply with the SBE requirement. All SBE/VSBE firms must be certified by the time proposals are due to receive credit. In addition all consultants and subconsultants must be registered on the RAMP by the time proposals are due.

AFFIDAVIT OF COMPANY STATUS

"The undersigned declares under penalty of perjury pursuant to the laws of the State of California that the following information and information contained on **the attached Consultant Description Form** is true and correct and includes all material information necessary to identify and explain the operations of

STAX Engineering, Inc.

Name of Firm

as well as the ownership and location thereof. Further, the undersigned agrees to provide complete and accurate information regarding ownership in the named firm, and all of its domestic and foreign affiliates, any proposed changes of the ownership and to permit the audit and examination of firm ownership documents, and the ownership documents of all of its domestic and foreign affiliates, in association with this agreement."

(1) **Small/Very Small Business Enterprise Program:** Please indicate the ownership of your company. Please check all that apply. At least one box must be checked:

☐ SBE ☐ VSBE ☐ MBE ☐ WBE ☐ DVBE ☑ OBE

- A Small Business Enterprise (SBE) is an independently owned and operated business that is not dominant in its field and meets criteria set forth by the Small Business Administration in Title 13, Code of Federal Regulations, Part 121.
- A Very Small Business Enterprise (VSBE) is 1) a small business that has average annual gross receipts of $5,000,000 or less within the previous three years, or (2) a small business manufacturer with 25 or fewer employees.
- A Minority Business Enterprise (MBE) is defined as a business in which a minority owns and controls at least 51% of the business. A Woman Business (WBE) is defined as a business in which a woman owns and controls at least 51% of the business. For the purpose of this project, a minority includes:
  (1) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
  (2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
  (3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, The Indian Subcontinent, or the Pacific Islands); and
  (4) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).
- A Disabled Veteran Business Enterprise (DVBE) is defined as a business in which a disabled veteran owns at least 51% of the business, and the daily business operations are managed and controlled by one or more disabled veterans.
- An OBE (Other Business Enterprise) is any enterprise that is neither an SBE, VSBE, MBE, WBE, or DVBE.

(2) **Local Business Preference Program:** Please indicate the Local Business Enterprise status of your company. Only one box must be checked:

☐ LBE ☒ Non-LBE

- A Local Business Enterprise (LBE) is: (a) a business headquartered within Los Angeles, Orange, Riverside, San Bernardino, or Ventura Counties; or (b) a business that has at least 50 full-time employees, or 25 full-time employees for specialty marine contracting firms, working in Los Angeles, Orange, Riverside, San Bernardino, or Ventura Counties. "Headquartered" shall mean that the business physically conducts and manages all of its operations from a location in the above-named counties.
- A Non-LBE is any business that does not meet the definition of a LBE.

Signature: DocuSigned by: Michael Walker FC5D160C586D415... Title: CEO

Printed Name: Michael Walker Date Signed: 6-13-2024

FORM 50

EXHIBIT G

Bidder Certification

Los Angeles City ETHICS COMMISSION

This form must be submitted with your bid or proposal to the City department that is awarding the contract noted below. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

☑ Original Filing ☐ Amendment: Date of Signed Original_____. Date of Last Amendment_____.

Reference Number (Bid, Contract, or BAVN)	Awarding Authority (Department awarding the contract)
RAMP ID #214218	City of Los Angeles Harbor Department
Bidder Name: STAX Engineering, Inc.	
Address: 215 W Figueroa St, Santa Barbara, CA 93101	
Email Address: info@staxengineering.com	Phone Number: 833-997-7829

Certification

I certify the following on my own behalf or on behalf of the entity named above, which I am authorized to represent:

A. I am applying for one of the following types of contracts with the City of Los Angeles:

1. A goods or services contract with a value of more than $25,000 and a term of at least three months;
2. A construction contract with any value and duration;
3. A financial assistance contract, as defined in Los Angeles Administrative Code § 10.40.1(h), with a value of at least $100,000 and a term of any duration; or
4. A public lease or license, as defined in Los Angeles Administrative Code § 10.40.1(i), with any value and duration.

B. I acknowledge and agree to comply with the disclosure requirements and prohibitions established in the Los Angeles Municipal Lobbying Ordinance if I qualify as a lobbying entity under Los Angeles Municipal Code § 48.02.

I certify under penalty of perjury under the laws of the City of Los Angeles and the state of California that the information in this form is true and complete.

Michael Walker
Name

DocuSigned by: Michael Walker FC5D160C586D415...
Signature

CEO
Title

6-13-2024
Date

Los Angeles Administrative Code § 10.40.1

(h) '"**City Financial Assistance Recipient**" means any person who receives from the City discrete financial assistance in the amount of One Hundred Thousand Dollars ($100,000.00) or more for economic development or job growth expressly articulated and identified by the City, as contrasted with generalized financial assistance such as through tax legislation.

Categories of such assistance shall include, but are not limited to, bond financing, planning assistance, tax increment financing exclusively by the City, and tax credits, and shall not include assistance provided by the Community Development Bank. City staff assistance shall not be regarded as financial assistance for purposes of this article. A loan shall not be regarded as financial assistance. The forgiveness of a loan shall be regarded as financial assistance. A loan shall be regarded as financial assistance to the extent of any differential between the amount of the loan and the present value of the payments thereunder, discounted over the life of the loan by the applicable federal rate as used in 26 U.S.C. Sections 1274(d), 7872(f). A recipient shall not be deemed to include lessees and sublessees.

Los Angeles Administrative Code § 10.37.1

(l) **"Public lease or license".**

(a) Except as provided in (l)(b), "Public lease or license" means a lease or license of City property on which services are rendered by employees of the public lessee or licensee or sublessee or sublicensee, or of a contractor or subcontractor, but only where any of the following applies:
  (1) The services are rendered on premises at least a portion of which is visited by substantial numbers of the public on a frequent basis (including, but not limited to, airport passenger terminals, parking lots, golf courses, recreational facilities); or
  (2) Any of the services could feasibly be performed by City employees if the awarding authority had the requisite financial and staffing resources; or
  (3) The DAA has determined in writing that coverage would further the proprietary interests of the City.

(b) A public lessee or licensee will be exempt from the requirements of this article subject to the following limitations:
  (1) The lessee or licensee has annual gross revenues of less than the annual gross revenue threshold, three hundred fifty thousand dollars ($350,000), from business conducted on City property;
  (2) The lessee or licensee employs no more than seven (7) people total in the company on and off City property;
  (3) To qualify for this exemption, the lessee or licensee must provide proof of its gross revenues and number of people it employs in the company's entire workforce to the awarding authority as required by regulation;
  (4) Whether annual gross revenues are less than three hundred fifty thousand dollars ($350,000) shall be determined based on the gross revenues for the last tax year prior to application or such other period as may be established by regulation;
  (5) The annual gross revenue threshold shall be adjusted annually at the same rate and at the same time as the living wage is adjusted under section 10.37.2 (a);
  (6) A lessee or licensee shall be deemed to employ no more than seven (7) people if the company's entire workforce worked an average of no more than one thousand two-hundred fourteen (1,214) hours per month for at least three-fourths (3/4) of the time period that the revenue limitation is measured;
  (7) Public leases and licenses shall be deemed to include public subleases and sublicenses;
  (8) If a public lease or license has a term of more than two (2) years, the exemption granted pursuant to this section shall expire after two (2) years but shall be renewable in two-year increments upon meeting the requirements therefor at the time of the renewal application or such period established by regulation.

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

This form must be completed in its entirety and submitted with your bid or proposal to the City department that is awarding the contract. Failure to submit a completed form may affect your bid or proposal. If you have questions about this form, please contact the Ethics Commission at (213) 978-1960.

☑ **Original Filing** ☐ **Amendment:** Date of Signed Original _____. Date of Last Amendment _____.

Reference Number (Bid, Contract, or BAVN): RAMP ID #214218 Date Bid Submitted: 6-17-2024

Contract Description (Title of the RFP or City contract solicitation and description of the services to be provided):

On-Call Ocean-Going Vessel At Berth Emissions Control Services

Awarding Authority (Department awarding the contract): City of Los Angeles Harbor Department

Bidder Name: STAX Engineering, Inc.

Bidder Address: 215 W Figueroa St, Santa Barbara, CA 93101

Bidder Email Address: info@staxengineering.com Bidder Phone Number: 833-997-7829

Schedule Summary

Please complete all three of the following:

1. **SCHEDULE A — Bidder's Principals** *(check one)*
   The bidder has one or more **PRINCIPALS,** as defined in LAMC § 49.7.35(A)(6).
   At least one principal is required for entities. *(If you check "Yes", Schedule A is required.)*
   Yes ☑ No ☐

2. **SCHEDULE B — Subcontractors and Their Principals** *(check one)*
   The bidder has one or more **SUBCONTRACTORS** on this bid or proposal with subcontracts worth $100,000 or more. *(If you check "Yes", Schedule B is required.)*
   Yes ☐ No ☑

3. **TOTAL NUMBER OF PAGES SUBMITTED** (including this cover page): _____

Certification

I certify the following under penalty of perjury under the laws of the City of Los Angeles and the state of California: A) I understand, will comply with, and have notified my principals and subcontractors of the requirements and restrictions in Los Angeles City Charter § 470(c)(12) and any related ordinances; B) I understand that I must amend this form within ten business days if any information changes; C) I am the bidder named above or I am authorized to represent the bidder named above, and my name appears below; and D) The information provided in this form is true and complete to the best of my knowledge and belief.

Michael Walker
Name

DocuSigned by: Michael Walker FC5D160C586D415...
Signature

CEO
Title

6-13-2024
Date

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule A - Bidder's Principals

Please identify the names and titles of all the bidder's principals (attach additional sheets if necessary). Principals include a bidder's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the bidder of at least 20 percent and employees of the bidder who are authorized by the bid or proposal to represent the bidder before the City.

Name: Michael Walker Title: CEO
Address: 490 Pimiento Lane, Santa Barbara, CA 93108

Name: Robert Sharp Title: Founder, CTO
Address: 1895 Old Ranch Road, Camarillo, CA 93012

Name: John Holmes Title: COO
Address: 9601 NE 100th Way, Vancouver, WA 98662

Name: Randall Pasek Title: CRO
Address: 3940 Broad Street, Unit 7228, San Luis Obispo, CA 93401

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

Name: Title:
Address:

☐ Check this box if additional Schedule A pages are attached.

FORM 55

Prohibited Contributors
(Bidders)

Los Angeles City ETHICS COMMISSION

Schedule B - Subcontractors and Their Principals

Please identify all subcontractors whose subcontracts are worth $100,000 or more. Separate Schedule B pages are required for each subcontractor who meets the threshold.

Subcontractor's Name
Subcontractor's Address

Please check one of the following options:

This subcontractor has one or more principals. ☐ **Yes*** ☐ **No**

** Each principal's name and title must be identified below. Attach additional sheets if necessary. Principals include a subcontractor's board chair, president, chief executive officer, chief operating officer, and individuals who serve in the functional equivalent of one or more of those positions. Principals also include individuals who hold an ownership interest in the subcontractor of at least 20 percent and employees of the subcontractor who are authorized by the bid or proposal to represent the subcontractor before the City.*

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

Name: _____ Title: _____

Address: _____

☐ **Check this box if additional Schedule B pages are attached.**

EXHIBIT H

POLA IRAN CONTRACTING ACT OF 2010 COMPLIANCE AFFIDAVIT

(California Public Contract Code Sections 2200-2208)

The California Legislature adopted the Iran Contracting Act of 2010 to respond to policies of Iran in a uniform fashion (PCC § 2201(q)). The Iran Contracting Act prohibits bidders engaged in investment activities in Iran from bidding on, submitting proposals for, or entering into or renewing contracts with public entities for goods and services of one million dollars ($1,000,000) or more (PCC § 2203(a)). A bidder who "engages in investment activities in Iran" is defined as either:

1. A bidder providing goods or services of twenty million dollars ($20,000,000) or more in the energy sector of Iran, including provision of oil or liquefied natural gas tankers, or products used to construct or maintain pipelines used to transport oil or liquefied natural gas, for the energy sector of Iran; **or**
2. A bidder that is a financial institution (as that term is defined in 50 U.S.C. § 1701) that extends twenty million dollars ($20,000,000) or more in credit to another person, for 45 days or more, if that person will use the credit to provide goods or services in the energy sector in Iran and is identified on a list created by the California Department of General Services (DGS) pursuant to PCC § 2203(b) as a person engaging in the investment activities in Iran.

The bidder shall certify that at the time of submitting a bid for new contract or renewal of an existing contract, the bidder is **not** identified on the DGS list of ineligible businesses or persons and that the bidder is **not** engaged in investment activities in Iran in violation of the Iran Contracting Act of 2010.

California law establishes penalties for providing false certifications, including civil penalties equal to the greater of $250,000 or twice the amount of the contract for which the false certification was made; contract termination; and three-year ineligibility to bid on contracts (PCC § 2205).

To comply with the Iran Contracting Act of 2010, the bidder shall provide its vendor or financial institution name, and City Business Tax Registration Certificate (BTRC) if available, in completing **ONE** of the options shown below.

OPTION #1: CERTIFICATION

I, the official named below, certify that I am duly authorized to execute this certification on behalf of the bidder or financial institution identified below, and that the bidder or financial institution identified below is **not** on the current DGS list of persons engaged in investment activities in Iran and is **not** a financial institution extending twenty million dollars ($20,000,000) or more in credit to another person or vendor, for 45 days or more, if that other person or vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current DSG list of persons engaged in investment activities in Iran.

Vendor Name/Financial Institution (printed) STAX Engineering, Inc.		***BTRC (or n/a)***
By (Authorized Signature) DocuSigned by: Michael Walker		
Print Name and Title of Person Signing Michael Walker, CEO		
Date Executed 6-13-2024	***City Approval (Signature)***	***(Print Name)***

OPTION #2: EXEMPTION

Pursuant to PCC § 2203(c) and (d), a public entity may permit a bidder or financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enter into, or renew, a contract for goods and services. If the bidder or financial institution identified below has obtained an exemption from the certification requirement under the Iran Contracting Act of 2010, the bidder or financial institution shall complete and sign below and attach documentation demonstrating the exemption approval.

Vendor Name/Financial Institution (printed)		***BTRC (or n/a)***
By (Authorized Signature)		
Print Name and Title of Person Signing		
Date Executed	***City Approval (Signature)***	***(Print Name)***

Consultant Description Form

PRIME CONSULTANT:

Contract Title: On Call OGV At-Berth Emission Control Services

Business Name: STAX Engineering Inc. RAMP ID#: 94809

Award Total: $ NA

Owner's Ethnicity: White Gender M Group: SBE VSBE MBE WBE DVBE OBE (Circle all that apply)

Local Business Enterprise: YES_____ NO X (Check only one)

Primary NAICS Code: 488390

Address: 215 W Figueroa Street

City/State/Zip: Santa Barbara CA 93101

County: Santa Barbara

Telephone: (833) 997-7829 FAX: ( ) _____

Contact Person/Title: Randall Pasek

Email Address: info@staxengineering.com

SUBCONSULTANT:

Business Name: _____ RAMP ID#: _____

Award Total: (% or $): _____

Services to be provided: _____

Owner's Ethnicity: _____ Gender _____ Group: SBE VSBE MBE WBE DVBE OBE (Circle all that apply)

Local Business Enterprise: YES_____ NO_____ (Check only one)

Primary NAICS Code: _____

Address: _____

City/State/Zip: _____

County: _____

Telephone: ( ) _____ FAX: ( ) _____

Contact Person/Title: _____

Email Address: _____

SUBCONSULTANT:

Business Name: _____ RAMP ID#: _____

Award Total: (% or $): _____

Services to be provided: _____

Owner's Ethnicity: _____ Gender _____ Group: SBE VSBE MBE WBE DVBE OBE (Circle all that apply)

Local Business Enterprise: YES_____ NO_____ (Check only one)

Primary NAICS Code: _____

Address: _____

City/State/Zip: _____

County: _____

Telephone: ( ) _____ FAX: ( ) _____

Contact Person/Title: _____

Email address: _____

STAX Engineering, Inc.
215 W Figueroa Street
Santa Barbara, CA 93101

June 17, 2024

The City of Los Angeles Harbor Department
425 S. Palos Verdes Street
San Pedro, CA 90731

Re: Letter of Acceptance of Standard Contract Provisions and Executive Directive 35, RFP "On-Call Ocean-Going Vessel At Berth Emissions Control Services"
RAMP ID #214218

Dear City of Los Angeles Harbor Department:

STAX Engineering, Inc. confirms its intention to comply with the RAMP demographic reporting requirements of the Mayor's Executive Directive 35 and accepts all of the Standard Contract Provisions exactly as set forth in Section 4 of the RFP "On-Call Ocean-Going Vessel At Berth Emissions Control Services."

Sincerely,

Michael Walker
CEO
STAX Engineering, Inc.

STAX ENGINEERING

STAX ENGINEERING, INC.

MICHAEL WALKER
+1 (805) 708-2275
M.WALKER@STAXENGINEERING.COM

RANDALL PASEK
+1 (949) 201-5778
R.PASEK@STAXENGINEERING.COM

For the Future