

Channel Islands Neighborhood Council

Serving 1,900 homes on Channel Islands Harbor

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MAC

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MAC

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MAC: *Marine Advisory Committee*

VISIT:

www.cineighbors.com

January 23, 2020

TO: LARWQCB

Dr. LB Nye, Section Chief, Regional Programs

Re: Triennial Review of Water Quality Standards in the LA Region

Submitting Organization:

Channel Islands Neighborhood Council – CINC,

And the Marine Advisory Committee – MAC

Contact Person:

Audrey Keller, Chair, CINC

Representing 1,900 homes on Channel Islands Harbor

1237 S. Victoria Ave. #504, Oxnard, CA 93035

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CINC is a new organization submitting for the triennial review documentation request. We have fresh eyes that live and breathe in the beauty of the Channel Islands Harbor and the Edison Canal Estuary every day. We are passionate volunteers and have a sense of duty to the environment. As a volunteer organization, we have no way of knowing which project the Water Board may deem “appropriate and practical” for this 2020-2022 triennial review. We would welcome a meeting with the Water Board staff at any time to discuss these suggestions and observations in person and, most importantly, on the water by boat.

Affected Water Quality Objectives & Changing Our Thinking About “Everything” that has to do with the Channel Islands Harbor:

Simply put, our Channel Islands Harbor Rec-1 water quality objective is to have the entire harbor be clean and safe for people and marine life – e.g., swimmable, fishable waters. This basic objective follows the Basin Plan: “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal or aquatic life...”.

The NRG (now GenOn) Power Plant on the Oxnard shoreline operated for approximately 60 years, essentially supporting a balanced ecosystem which has now been degraded as an unintended consequence of the State mandate to stop the power plant’s once-through cooling system. The State of California has 18 other once-through cooling plants that have not yet been shuttered and Ventura County, Oxnard and their residents are observers in real-time of our harbor’s degradation. Channel Islands Harbor and Canal are the “canaries in the coal mine”.

CA Energy Commission *knew Mandalay Generating Station (currently known as NRG) was not studied sufficiently...Conclusions “The 316(a) studies are not complete enough to thoroughly determine thermal impacts.... In short, the study design was such that accuracy of the results are unknown.... None of the testing sites for thermal plume were at the discharge site... Entrainment sampling for Mandalay was not done at Mandalay Generating Station. Sampling results were presumed to be the same as Haynes Generating Station, Long Beach (1981). Energy Commission Plant-by-Plant Review February 2005, Moss Landing Marine Labs*

Environmental Justice has always played a role in Oxnard, the 19th largest city in the state with 73.5% Hispanic population. That’s why we have not one, but two power plants on our shores. That’s also why we have a toxic waste dump on the sand dunes adjacent to the Edison Canal. When NRG threatened the City to close the power plant if the city didn’t allow them to build another generating facility on the shores of Oxnard, no one analyzed the impacts or seemed to care. Looking back on the decision, one wonders why the California Energy Commission endorsed this site closure. NRG failed to act in the public’s best interest, considering they exist to serve the public. The Energy Commission and environmental groups that supported the closure, failed to properly study the long-term impacts of closing the Mandalay Generating Station. Accountability for these environmental impacts should be at the State level.

With everything we have learned since June 2018 about our water quality, there is no other alternative but to enforce with intensity and urgency, the Water Board’s pollution controls.

All dischargers and polluters into these waterbodies were historically ignored because no one was measuring or holding them accountable. Now, they must be brought to the table or face

immediate consequences. This is not to say that we don't believe in a fair process, but once the degradation of these waters goes below marine life sustainability, the impacts are severe and intolerable. Industry professionals that attended the MS4 hearings January 2020, quoted timelines in terms of 5, 7 or even 10-year horizons. In the public interest, if the Water Board does not accelerate that timeline our beautiful harbor and its marine life will not survive.

All Waterbodies Are Affected:

Since the last basin review, the NRG Power Plant in Oxnard was closed in March 2018. The once-through cooling pumps stopped siphoning waters of the Harbor through the Edison Canal into the cooling infrastructure and then out to sea. The canal siphoned millions of gallons of harbor (ocean) water NORTH into the power plant's cooling structure. Scientists failed to study what would happen to the marine environment in the CI Harbor when the pumping stopped and the only flow possible for agricultural and urban runoff was SOUTH, directly into our beautiful harbor. The affected waterbodies experienced "a massive microalgal bloom Summer 2018 followed by a strong and prolonged anoxic event." (per ABC Labs)

Every public agency that is responsible for water quality such as the State and LA Regional Water Board, the California Coastal Commission and the Energy Commission, the County of Ventura and the City of Oxnard have been slow to act. They fail to: a) acknowledge there is an environmental disaster unfolding and b) fund the study of both near and long-term solutions.

CEQA, or the California Environmental Quality Act, is a statute that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible.

CEQA 21061 *The environmental review required imposes both procedural and substantive requirements. At a minimum, an initial review of the project and its environmental effects must be conducted. Depending on the potential effects, a further, and more substantial, review may be conducted in the form of an environmental impact report (EIR). A project may not be approved as submitted if feasible alternatives or mitigation measures are able to substantially lessen the significant environmental effects of the project.*

CEQA 21064 Negative Declaration: *Reasons that a proposed project will not have a significant effect on the environment and does not require the preparation of an environmental impact report.*

Before the LARWQB authorized the NRG Power Plant to shut down the pumps, was an EIR, (Environmental Impact Report) and/or a Negative Declaration submitted?

LA Regional Water Board's Permit: NPDES No. CA0001180, CA No. 2093

As authorized by the Clean Water Act (CWA), the **NPDES Permit** Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches.

Before the LARWQB issued the NPDES Permit, was an EIR that studied the impact of CHANGING THE POINT SOURCES THAT CHANGED THE DIRECTION from North to South, of DISCHARGE POLLUTANTS into the Edison Canal Estuary and the Channel Islands harbor?



New Housing Developments on Affected Waterbody

Beyond the staggering ecological impact of the power plant closure, in 2019 a new potential source of toxic substances since the last basin review surfaced is the pending permitted development known as “North Shore at Mandalay Bay” which sits directly aside the Edison Canal. The developer has obtained a waiver to discharge into the Edison Canal from Center Point Energy, the canal’s landowner.

Other new housing developments in Oxnard is also planned for the sand dune areas adjacent to the Edison Canal Estuary and may be built before the next 2023 basin plan review. Left unchecked, they too would seek waivers to allow storm water runoff into the canal.

Agricultural Dischargers

The oldest and ongoing source of nutrients and pollutants: 2,400 acres of farm fields that drain directly into the Edison Canal. They have been doing so long before the canal was built by the Army Corps in the early 1950’s. Early maps of Oxnard show those farm fields draining into a wetland. Since the last basin review, the existing TMDLs no longer serve as Best Management Practice examples. The farmers (represented by VCAILG) have taken the stance that they are “complying”, but using the current TMDL and their timelines, the clean water goals are not achievable in our lifetimes.

We have been told by knowing government staff that the farmers are a powerful force. Can we have a future of clean swimmable fishable water in our Harbor if Water Board management at the State level does not raise the standards, redefine best practices and enforce compliance?

- 1) We recommend that the Water Board reclassify Channel Islands Harbor as a recognized impaired body, given the 2018 closure of the NRG Power Plant.

- The NRG Power Plant had the capacity to siphon 253.4 million gallons per day
- There has been some discussion by the City of Oxnard with CINC to change the Basin Plan's designation from Rec-1 to a lower classification. The public asks that the Water Board holds the City and County accountable for managing their pollutants and maintain Rec-1 standards. Failure is not an option.
- This is a swimmable, fishable harbor and residents and visitors do swim and kayak and paddleboard in this harbor. The public will not allow the City to settle for maintaining anything less than a Rec-1 harbor.

The Canal: Study It, Reclassify It, Defend It

When the NRG Power Plant was in operation, the Canal was an industrial necessity. The unintended, wonderful consequence was that the canal waters were constantly recirculating and became a part of the flyway and an ecosystem unto itself. We recommend redefining the Edison Canal Estuary's designated beneficial use as Estuarine Habitat (EST) and to recognize it as an impaired body after the 2018 closure of the NRG Power Plant. (Beneficial Use Table 2.1.5 and 2-3)

2.1.5 ESTUARINE HABITAT (EST)

Uses of water that support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds), and the propagation, sustenance, and migration of estuarine organisms. Estuarine habitat provides an essential and unique habitat that serves to acclimate anadromous fishes (salmon, striped bass) migrating into fresh or marine water conditions. The protection of estuarine habitat is contingent upon (1) the maintenance of adequate Delta outflow to provide mixing and salinity control; and (2) provisions to protect wildlife habitat associated with marshlands and the Bay periphery (i.e., prevention of fill activities). Estuarine habitat is generally associated with moderate seasonal fluctuations in dissolved oxygen, pH, and temperature and with a wide range in turbidity.

This canal is part of the Pacific Flyway, a nesting area and feeding location for local sea birds and migrating birds. Along a western portion of the canal sand dunes support a wide diversity of animal life. There is a public park and trail system in Westport (corner of Wooley and Chesapeake) that contains a wetland area of the canal. It has been so degraded recently by trash that the nature trail signage has been pulled down. This canal deserves to be maintained for public beneficial use.

Further classifications that could be applied upon further study:

- WET – waterbody with wetland habitat in a portion of the body
 - i. Can the canal be both an estuary and a wetland? It is sediment-based, filling over time due to the power plant shutdown with vegetation growing down along the canal. The canal would be under the protection

of the Clean Water Act and as so waters of the United States. Natural wetlands could be encouraged and become a filtration system for the agricultural runoff that is currently left unchecked.

- 'e' – species uses for foraging and/or nesting
- 'f' – aquatic species use for spawning or early development with freshwater inputs

The Canal: Trash Pollutants and the Fish Dam Blocks Aquatic Life

In addition, a TMDL issued such as Malibu Creek for trash pollution should be included as a contributing impairment to the Edison Canal Estuary. The public has written to, and called, the management of Center Point Energy (CPE), to clean floating debris out of the canal.

Homeless encampments along the canal contribute to the debris and human waste that is entering the Edison Canal Estuary.

The Army Corps of Engineers built a fish dam at the mouth of the Edison Canal Estuary to keep the larger marine life out of the canal and away from the pumps. Today, there is no longer any reason for this fish dam. It is a barrier to marine life to migrate into and out of the estuary. Large aquatic life such as sharks, stingrays and even sea turtles have been caught by fishermen at the fish dam. We recommend that CPE be asked to remove this fish dam, prior to selling the canal. (It currently is on the market, since it has no value to CPE and is a potential liability)

Heal the Bay 1/14/20

Regarding the canal...

"If we are unable to stop the discharge of polluted effluent, then the next best option would be to capture and treat the discharge using nature-based solutions such as remediation wetlands."

The Canal: Block & Recall any/all Waivers that Discharge into the Edison Canal:

We recommend including the North Shore at Mandalay Bay (a former toxic waste dump) as a newcomer and potential contributing polluter to the Edison Canal. We recommend rescinding all waivers allowing the discharge of waters into the Edison Canal and Channel Islands Harbor. City of Oxnard has permits in progress that approve such discharge. The current owners of the Edison Canal, Center Point Energy, gave a waiver to the North Shore developer to discharge storm water runoff directly into the canal. How can an entity that is a Texas based; publicly traded company be the decision maker on such pollutant discharge?

This waiver is not consistent with the water quality standards of the Rec-1 status of the harbor or the estuary. Construction of 100 homes on this former toxic waste dump building site should not contribute in any way to cause harm to the waterways. The Department of Toxic Substances is the agency that is tasked with oversight of the toxic substances that continue to be polluting the environment.

Require the storm water runoff for the North Shore development to join instead the western runoff storm water systems that go directly to the ocean. (Defend the canal by removing the waivers and redirect the storm systems across Harbor Blvd. not into the Edison Canal)

By the time the next triennial review of the Basin Plan in 2021/2023, we know of two other new communities that are “pending” at the planning department, located adjacent to and along the canal. These developments should also not receive waivers to discharge into Edison Canal Estuary.

The Canal: Address the ‘Ag’ Elephant in the Room

Agriculture is the heartbeat of California. Modern agricultural techniques that value fresh water and the reclamation of field runoff represent today’s Best Practice. The farm bureaus must be part of the solution and not part of the “old school.” look-the-other way practice.

Isn’t this body a watershed? Could the Water Board reclassify the 2,400 acres of agricultural fields that discharge directly into the Edison Canal Estuary via old waivers, be treated as a “watershed”. The freshwater runoff of all 2,400 acres discharges into the saltwater Edison Canal Estuary.

*“In simplest terms, a watershed is an area of land that drains all its water: rivers and streams, rainfall and snowmelt, and urban runoff, to one specific point.”
(LARWQCB)*

CINC requests that the Water Board adopt similar amendments to the Basin Plan that address these ag pollutants in the form of TMDLs, except that they accelerate the required timelines and reduce any/all dischargers. We have read that the Water Board has issued a TMDL for pesticides, PCBs and sediment toxicity in McGrath Lake primarily due to agricultural runoff.

Aquatic Bioassay & Consulting Labs

March 2019

- *Source reduction into the Edison Canal: fertilizer application reduction; crop rotation, relocation, and change; and reduction in the amount of agricultural land uses*
- *Engineered runoff reduction and treatment: bioswales, treatment wetlands, wetlands restoration and engineered treatment systems*

Major Storm Drains: Recycle/Reuse Ag & Urban Runoff

We recommend that the three (3) key storm water drains that traverse much of Oxnard and Port Hueneme, residential and commercial including the Oxnard Airport, be monitored and identified as separate polluting sources that discharge into the canal and harbor.

Designation: Potential Beneficial Use

- The **Doris Drain**, and the **5th Street Drain**: both discharge into the Edison Canal Estuary
 - i. Potential use: Capture and reclaim fresh water to (ARG) as agricultural reuse
 - ii. Nature Based engineered wetlands could be part of the plan
 - iii. Converting 2,400 acres of farm fields to ORGANIC, a common practice for farming of fruits such as strawberries.
 - 1. Ventura County in 2017 Organic farming represented 6,260 acres of fruits and nuts. *2019 State of the Region Report*
- The **Oxnard West Drain** discharges directly into Channel Islands Harbor with no filtration and no debris capture.
 - i. Potential use: Capture and reclaim storm water to recycled water
 - ii. Interim project: MS4 drain with required 360 storm filtration systems

The water shortage in Oxnard is critical. So critical and so expensive, that the City opted in 2019 to stop watering its public parks. It is the public's desire to stop allowing storm water runoff to be wasted and to pollute the Channel Islands Harbor. A key potential beneficial use is that we desire to recycle the storm water runoff to irrigate the adjacent farm fields and or the public parks in the City of Oxnard.

By converting these three major outflows to captured storm water the financial analysis of saved costs of future water and the costs to destroy public parks in Oxnard outweigh the infrastructure investment in modern storm water saving technology. It is critical that the City develops effective reuses of recycled water.

This beneficial use model directly benefits the human health and welfare of all that live on, swim in, visit, or making a living in the harbor.

Apply a Practical Vision Statement to Goal Setting

This recommendation advances the Practical Vision plans to achieve healthy waters through collaboration, reliance on the latest science, prioritization of issues and actions, and prudent use of authorities in service to the people of California. By evaluating the existing water quality objectives, USEPA guidance, scientific studies, and stakeholder interests, the San Diego Water Board will be able to protect the contact recreational beneficial uses in the most efficient manner practicable.

(excerpt from the San Diego 2014 Triennial Review):

Obviously, the City of Oxnard (or any city faced with such an ecological challenge) would need financial assistance from the State Water Board, the State Energy Commission, all Environmental Agencies (including Federal). The public must drive these agencies to achieve these positive environmental changes, since they are not doing it as their charters dictate. Our feeling is that Oxnard should receive priority funding from the state, as the first City to experience such devastating ecological consequences. Closing of the power plant was done by direction of the State Energy Commission. The unintended consequences to the resident's quality of life and the quiet harbor on the Central Coast should not be ignored. How could the Energy regulators feel that \$100,000 annual mitigation contribution by each power plant to an Ocean Protection Council (OPC), be anywhere near enough funding to repair the damage caused by the sudden plant shut down?

Again, the scientists and consultants of government agencies failed to study the unintended consequences of plant closures. Therefore, our government failed to anticipate, monitor or plan for funding the negative impact. We understand that due to the issues that we are facing, the state has delayed the 2020 mandate to close all once-through cooling plants until 2023. Long Beach has already funded a study to design a solution with Moffet and Nichols.

Affected Beneficial Use:

Currently the affected beneficial uses include but are not limited to: Bacteria, Bioaccumulation, Color, Dissolved Oxygen, Odors, Toxicity and Turbidity evidenced by the algal bloom and subsequent fish kill June 2018.

CINC's Clean Water Team started sampling water quality Dec. 4th, 2019, following guidelines specified by the LARWQCB. Lab results have already been shared in an open communication with the City and State Water Board team under Mr. Eric Burress' guidance.

Historical water testing has been ongoing since the NRG power plant has been in operation under the NPDES permit showing ag runoff. In addition, the City of Oxnard started water testing via a consulting contract with Aquatic Bioassay & Consulting (ABC Labs) June 2018. They found high levels of total nitrogen (TKN). TKN is found in ag runoff of fertilizers. Range of concern for TKN is less than 10-20. The tests indicated a range of 17.14-69.29. But there are no funds to continue ABC Labs testing.

The City of Oxnard, the County of Ventura and the residents of the northern harbor acquired four remote sensors principally to measure dissolved oxygen over 2019. To date our CINC residents have contributed more than \$500,000 to this water quality emergency. (see Appendix for supporting document) The sensor results are posted on the City's website. Results for all other testing at multiple sites throughout the northern harbor are also posted on the City's website.

<https://www.oxnard.org/city-department/publicworks/channel-islands-harbor-water-quality>

Emergency Fish Kill Preparedness Plan

In addition, the City of Oxnard along with our CINC community created an emergency fish kill preparedness plan as a direct response to the fish kill in June 2018. The Oxnard Fire Chief Darwin Base and his team led the way in creating this “first of its kind” document.

Two transient low oxygen events could easily have resulted in another major anoxic event. Large, rapid daily shifts in dissolved oxygen concentration were observed in King Harbor of the City of Redondo Beach in 2011 preceding a massive fish kill in that harbor.

ABC Labs, March 2019

Approve Funding Support of CINC/MAC and the Clean Water Team

CINC/MAC, in conjunction with the City and State Water Board, have initiated our own QAPP plan and have staffed Clean Water Team of citizen volunteers. We have reached out for help from Ventura Coast Keepers (their area of influence stops at the Santa Clara River) who are mentioned in the Water Board’s Annual Report 2019. We believe our organization is worthy of financial support from the Water Board. We have educated the community and governmental officials on a citizen volunteer basis. We have provided leadership, funding, physical work, boats, supplies, and outreach to the local university in Ventura County, CSUCI’s students, and in Santa Barbara County. UCSB intern projects and requests are in progress. This fight to have clean and healthy waters should not be our personal financial burden. It is enough to say that all our volunteers have been financially impacted by the degraded harbor and our quality of life has been impacted by brackish and smelly water.

As residents (mostly retirees), we should not have to fight for proper lab testing, materials or shipping of lab samples. We missed the first flush November 2019 because the City’s staff and lab didn’t acknowledge us or supply us in a timely way. We’ve quickly learned that we can’t manage what we can’t measure. So, we’d like to manage a wider array of lab testing including baseline for metals and toxins such as VOCs and PCBs. The City is understaffed to manage such a time-intensive project. Our initial water testing date occurred December 4th, 2019, and as of writing this document, WECK labs and the City of Oxnard have failed to supply us lab results. (12-4-19 Lab result provided 1-21-20). We can’t report, even if our volunteers do the work, if the City’s lab fails to supply timely results. In the terms of a game of tag, *we’re it*. We submitted a well-documented QAPP in October 2019 and we are still waiting approval by the

city and the LARWQCB. We ask that the Water Board includes CINC/MAC as recognized volunteers and establish a mechanism to fund us directly and approve our QAPP ASAP! Fund CINC/MAC and let us do the work with the Water Board's oversight and guidelines.

Other efforts in the county to monitor, cleanup, or otherwise improve stormwater quality by volunteer groups like Ventura Coastkeeper whose efforts can be considered to help implement some stormwater program elements are not included, however, Permittee efforts to support volunteer groups in their endeavors are included. 2019 Annual Report LAWB 2-3-2

Channel Islands Harbor Leads California

We believe the Channel Islands Harbor and the Edison Canal Estuary should be studied for beneficial use and new objectives. Further study and analysis of our environmental disaster could be utilized by other regional water boards in the state and the California Energy Commission. We feel no other power plants should be closed until our environmental issues are addressed.



If continued without further scientific study and environmental reflection, 18 other Power Plant closures will cause intentional consequences to the waters of California.

*“In 2010, the **State Water Resources Control Board (SWRCB)** began requiring a phase out of the process at 19 OTC power plants to address the diversion of 16 billion gallons of the state’s coastal and estuarine waters daily. “*

California Energy Commission Website

Channel Islands Neighborhood Council – CINC documented Environmental Impact

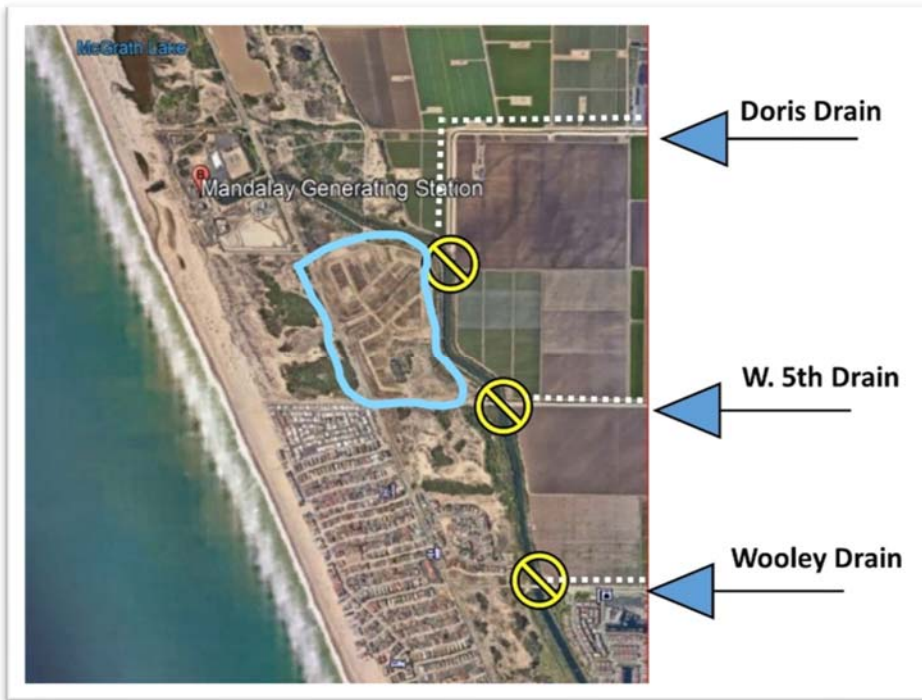
Supporting materials follow in the next several pages



Edison Canal Debris Field and Algal Bloom at the Fish Dam in Westport on the Canal



5th Street Drains @ Ag Fields Discharge Directly into the Canal



Highlighted blue area is the permitted development North Shore at Mandalay Bay, a former toxic waste dump. Edison Canal Estuary sits adjacent to the east where the developer intends to discharge storm water.



The Doris Drain. It should be reclassified as a “River” that discharges directly into Edison Canal Estuary



Old Iron Looming - Edison Canal and the NRG Power Plant, from the Doris Drain.



“The light in the tunnel” ... the Oxnard West Drain – Murky turbid water and debris flows freely into the C.I. Harbor, under Victoria Ave., at Channel Islands Blvd. At low tide a kayaker can move freely into the storm water drain from the harbor.

Unfiltered Storm Water Discharges without a Trash Gate from Storm Water Runoff. Originating from Port Hueneme and Oxnard, this drain is a direct pollutant of the harbor.



Marine life attached to our boat docks is no longer thriving.



2,400 Acres of Agriculture is big business in Ventura County, (VCAILG) farmers discharge unfiltered. Irrigation water could be captured and recycled.



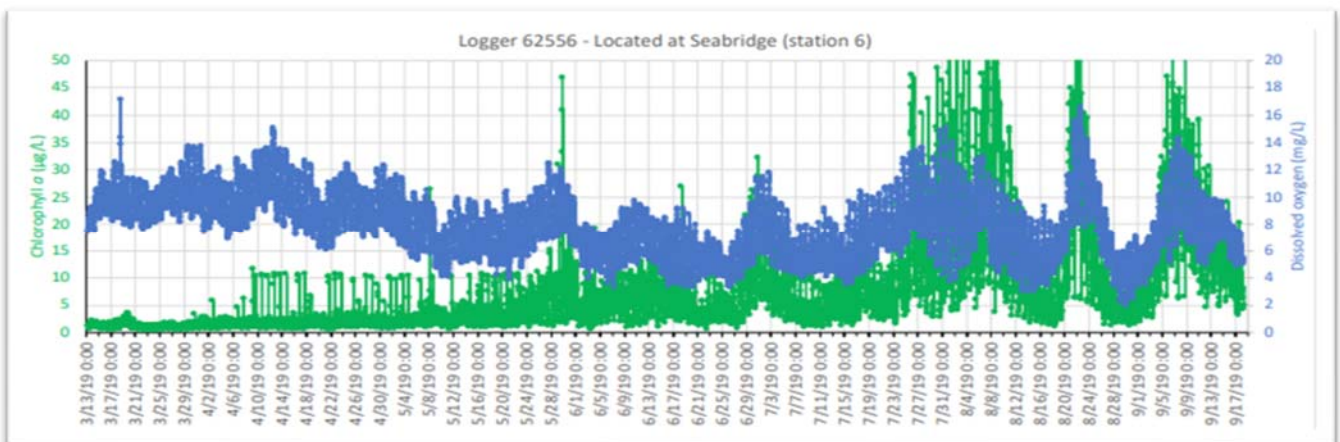
Summer/Fall of 2019 the harbor experienced blankets of moon jellies that appeared in our extremely low oxygenated harbor.



The polluted wetlands of the Edison Canal Estuary. The photo was taken near a nature walk sign, explaining “life” in the wetlands. Just an empty frame remains. (Westport Park @ Wooley)



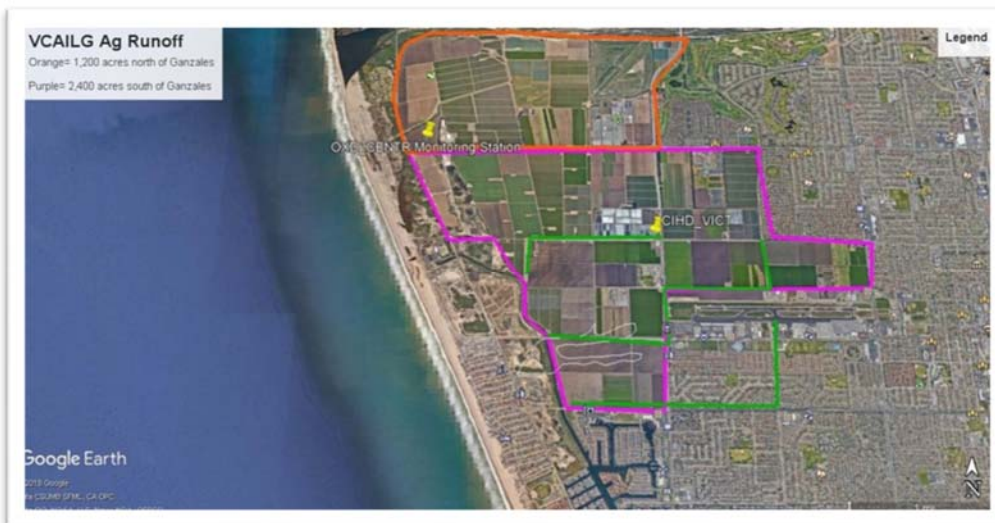
2019 CI Harbor “Sea Lettuce” Residents raked the large leafed algae out of the water around their dock homes.



4 Remote Testing Sensors Deployed in the Harbor Record Dissolved Oxygen (DO) levels 03/13/19 to 09/17/19 dropping far minimum acceptable levels.

Agricultural Runoff into McGrath Lake (VCAILG Data)							
Category	Constituent	Benchmark	Sampling Dates			Average	Benchmark Exceeded
			8/29/17	3/11/18	3/22/18		
Nutrients	Nitrate-N	10	30.50	62.20	11.10	31.60	3.5 x
Metals	Dis. Copper	3.10	3.99	6.04	6.85	5.63	1.8 x
Organo-	Chlordane	0.00059	ND	ND	0.00524	0.00524	8.9 x
Chloride	Toxaphene	0.00075	0.12200	0.15600	1.47000	0.58267	776.8 x
Pesticides	4,4' DDD	0.00084	DNQ	0.00664	0.19600	0.10132	120.6 x
	4,4' DDE	0.00059	DNQ	0.02780	0.36500	0.19640	332.9 x
	4,4' DDT	0.00059	ND	0.02480	0.17700	0.10090	171.0 x
Pyrethroid	Bifenthrin	0.00060	ND	ND	0.07790	0.07790	129.8 x
Pesticides							
Bacteria	E. coli	235	259	200	200	220	OK

McGrath Lake & VCAILG Farmers use old “Best Practice Measures” that destroy McGrath Lake habitat for our lifetime. This farm discharge only represents 1,200 acres to the north of the harbor. *Imagine the ongoing basin plan and TMDL process perpetuates “status quo” ... 2,400 acres of farmland that discharge directly into the Edison Canal Estuary.*



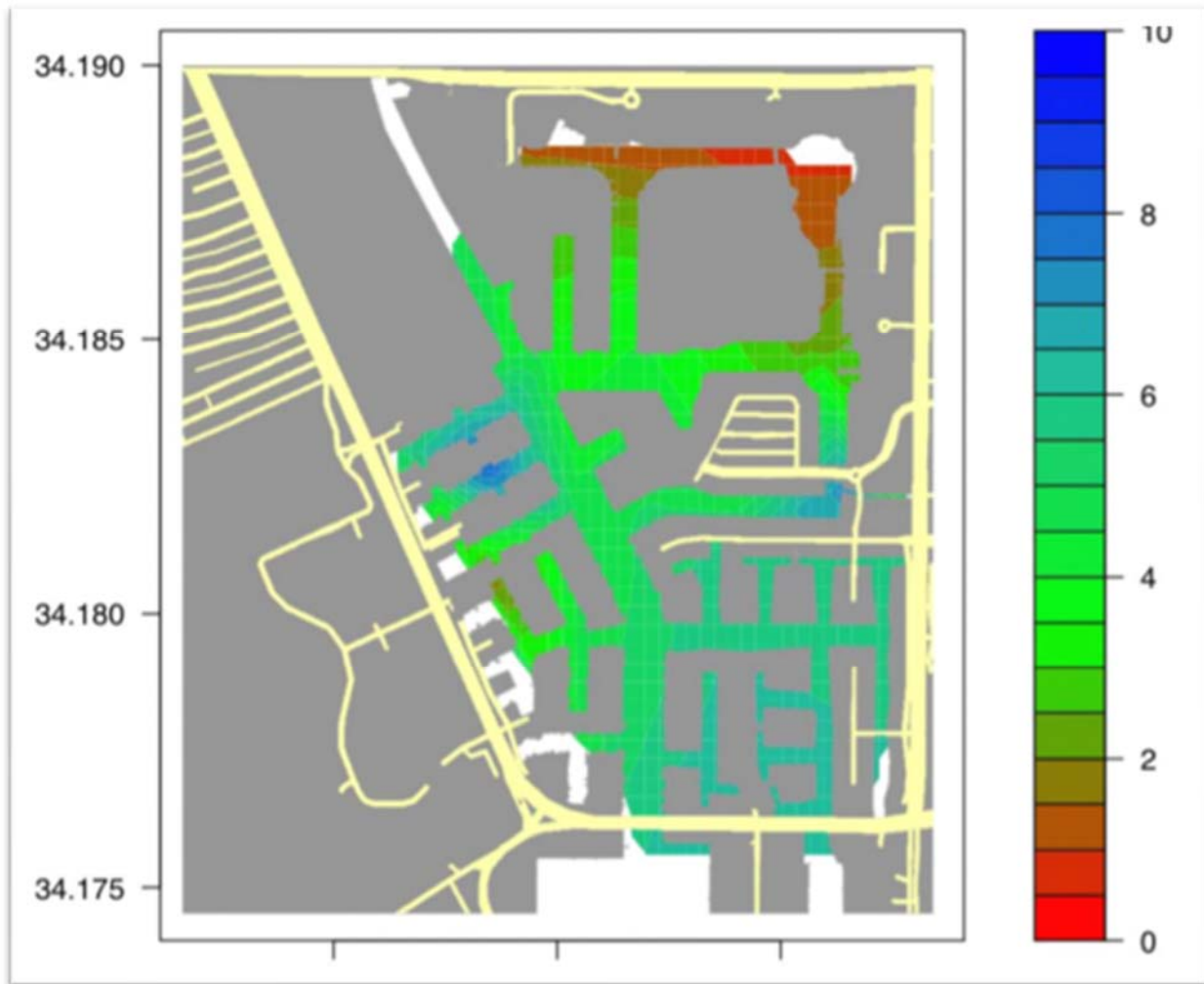
VCAILG Storm Water Runoff Comparison

1,200 Acres of Farmland discharge into McGrath Lake (in Orange)

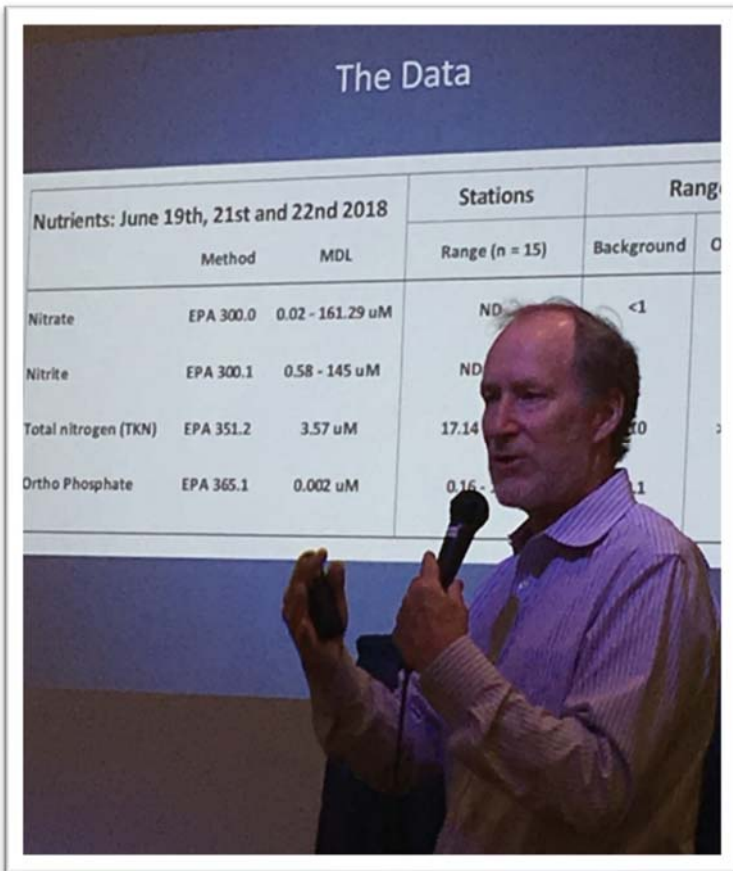
2,400 Acres of Farmland discharge into Edison Canal Estuary (in Magenta)



2019 / 2020 Sampling Stations of our CINC Clean Water Team in Channel Islands Harbor and Edison Canal Estuary.



Surface Dissolved Oxygen (DO) of CI Harbor June 2018. Red zone is in the communities of Westport and Seabridge.



Public Outcry City of Oxnard Meetings held July 11, 2018. Aquatic Bioassay Consulting (ABC), Dr. David Caron, reports on initial lab results

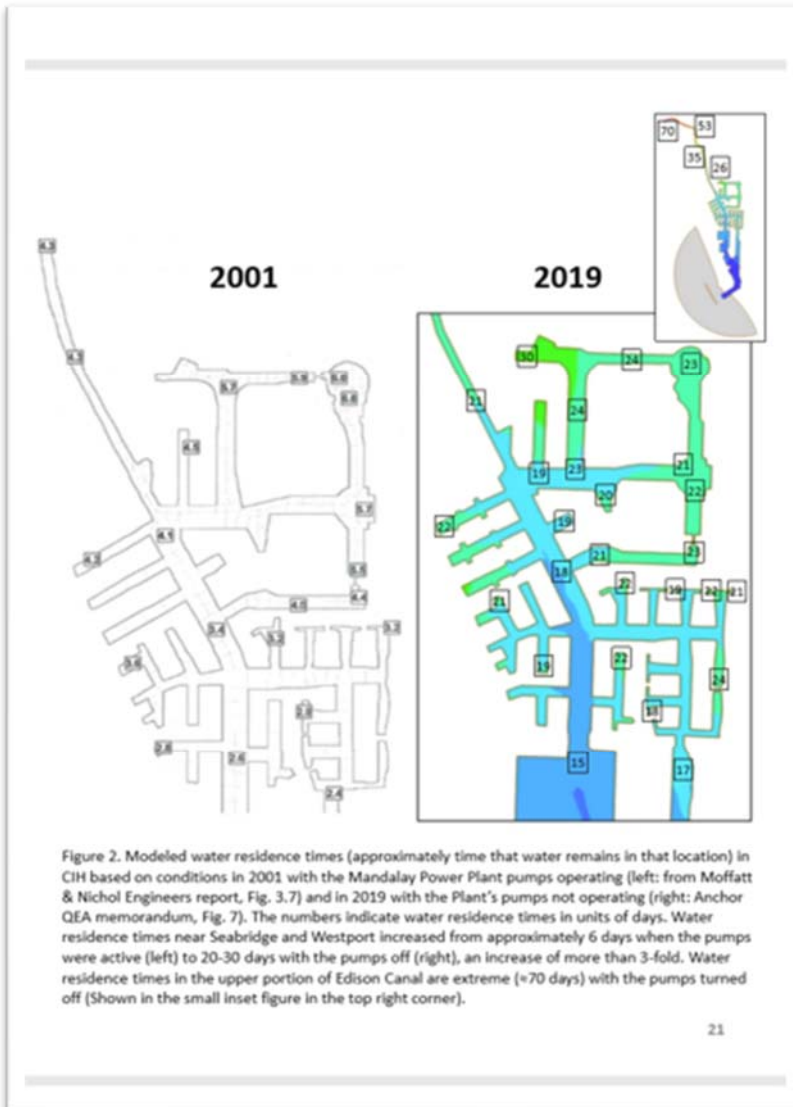


Record turnouts at all meetings having to do with Harbor Water Quality Degradation



NRG doesn't own Edison Canal and hasn't for years. It is the property of Center Point Energy (CPE). Both NRG and CPE, public companies are based in Texas. These companies must be accountable for their contribution (and as waiver grantors) to the old sedimentary pollutants in the canal and new pollutants they continue to allow to discharge in the canal.

This photo does illustrate that the banks of the canal are already densely filled with growth, naturally spilling into the water's edge.



Channel Islands Harbor, Post NRG Power Plant Pump Shut Down

Impactful Water Residence Time

“Water residence times near Seabridge and Westport increased from approximately 6 days when the pumps were active (left) to 20-30 days with the pumps off (right), an increase of more than 3-fold.”

“Water residence times in the upper portion of Edison Canal are extreme (≈ 70 days) with the pumps off.”

Appendix

Initial 6-Month Financial Investment \$483,000: Both the City of Oxnard via the General Fund and Measure "O" funding, along with the Channel Islands Neighborhood Council residents have paid the price in Harbor Water Quality June 2018 to Jan. 2019

Expense	Description	General Fund #101	Measure "O" funds #104	#121 WW Zone 1 Mandalay Bay	#173 Seabridge	#175 Westport	#177 WW Zone 2 Harbour Island	
\$72,650.00	Contract with Aquatic Bioassay Closed	\$ 72,650						
\$131,055.00	Contract with Aquatic Bioassay as of 1/31/19		\$131,055					
\$174,990.00	Remaining balance on A.B. contract		\$174,990					
	Consulting costs			\$1,068	\$447	\$253	\$175	
	Hach Water Meter			\$2,249	\$940	\$531	\$368	
	Photocopy Charges			\$113	\$47	\$27	\$19	
	Bacteria Testing			\$264	\$110	\$62	\$43	
	FedEx Shipping for sensor			\$87	\$87	\$87	\$0	
	Remote Sensor #1			\$24,530	\$24,530	\$24,530	\$0	
	Direct City Staff Charges as of 1/4/2019			\$11,691	\$4,889	\$2,763	\$1,913	
	Boat Slip Charges			\$1,580	\$661	\$373	\$259	
WHO	Total charges: City vs District/HOA	\$ 72,650	\$ 306,045	\$ 41,582	\$ 31,712	\$ 28,627	\$ 2,776	\$ 104,697
PAID	Percentage of total District/HOA share			40%	30%	27%	3%	
WHAT?	Who Paid What?	City	Measure 'O'	Mandalay	Seabridge	Westport	Harbor Isl	District Total
WHO	Adjusted charges to each District, if reallocated to match surface area map **			\$ 57,583	\$ 24,080	\$ 13,611	\$ 9,423	\$ 104,697
PAID MORE	Cost Allocations by Percentage of Surface Area **			55%	23%	13%	9%	
& PAID LESS	ALLOCATION DIFFERENTIAL			\$ 16,001	\$ (7,631)	\$ (15,016)	\$ 6,647	
Document Notes:								
Document data source is Sandra Burkhart S.B. for the City. Original document does not illustrate summary of charges per 'District / HOA'.								
** Per S.B. cost allocations were calculated by Harbor Surface Area by District Map.								
Seabridge @ 23%, WW 1-Mandalay = 55%, WW 2-Harbour Isl = 9%, Westport 13%								
Staffing time charges are for every single person on the boat that performed water testing								
Sensors will be placed in the districts that paid for them. They have not been placed as of 2/15/19.								
City did not pay for extended warranty on sensors.								
Funds charged to each 'District' aka HOA WILL NOT BE refunded if the grant money funds.								
We have unknowingly participated in the grant check list of "matching funding" points								
Notes - Fund #173 Seabridge was charged for \$14,298.47 for Aerators installed in their turn-around basin.								
This amount is not split/shared among districts								

Channel Islands Neighborhood Council

"CI Harbor Water Quality"
Project 116191

2/26/2019

Channel Islands Neighborhood Council: Financial Investment 2019:

Chart Pending City Calculations

Channel Islands Neighborhood Council 2019 Outreach to Governmental Agencies.

CINC was formed in May 2018. Today we are the most active of over 40 councils in Oxnard. We hold public meetings six times annually with over 100 in attendance since formation. Our residents are passionate about the harbor and marine environment.

Our governmental leaders and agencies on this list have had personal meetings and been shown extensive evidence of harbor degradation.

• Ventura County Harbor Director – Mark Sandoval	May 16, 2019
• ABC - Scott Johnson & AET - Dr. Dave Caron Hydrogen Peroxide Proposal	May 21, 2019
• ABC - Scott Johnson Remote Sensor and water sampling procedures	May 30, 2019
• Heal the Bay – Analisa Moe	June 17, 2019
• MAC & SWAMP Program Mgr. Erick Burres establish Clean Water Team	July 22, 2019
• LARWQCB staff to request procedures required for TMDL	July 30, 2019
• Calif. Senator Hannah Beth Jackson	Aug 14, 2019
• MAC delivers Quality Assurance Project Plan (QAPP) to SWAMP and ABC for review	Aug 15, 2019
• All 7 Oxnard City Council members, City Manager and Public Works Director	Aug 2019
• US Congress member Julia Brownley's staff	Sept. 11, 2019
• LARWQCB meeting LB Nye presentation: CI Harbor Water Quality Update	Sept. 12, 2019
• CenterPoint Energy – Scott Duhon and Doug Darrow	Sept. 19, 2019
• Channel Islands Beaches Comm. Svc. District – North Shore at Mandalay Bay	Sept. 19, 2019
• City of Oxnard Planning Meeting – North Shore at Mandalay Bay	Sept. 24, 2019
• Ventura County Agricultural Irrigated Lands Group (VCAILG) John Krist	Sept. 30, 2019
• Ventura County Supervisor – John Zaragoza	Oct. 1, 2019
• Calif Assembly Member Monique Limon	Oct. 21, 2019
• NRG (GenOn) plant manager – Tom DiCirolli Pump option	Oct. 25, 2019
• Calif. State University – Channel Islands (CSUCI) Volunteer Orientation	Oct. 25, 2019
• Clean Water Team (CWT) Water Quality Sampling Pilot with Erick Burres	Oct. 30, 2019
• California Coastal Commission- District Mgr. Barbara Carey	Nov. 13, 2019
• MAC waiting on revised QAPP from City of Oxnard	Nov. 14, 2019

CINC/MAC Clean Water Team Reporting for Duty

The following documents are from one week's worth of testing documentation that our volunteers performed from January 7, 2020. CSUCI students working under Dr. Mary Woo.

CINC Clean Water Team

Event Summary Report

To: **Project Manager:** Tom McNally (CINC)____ **QA Officer:** Karin Wisenbaker (ABC)____

Sampling Date: 01/07/20____ **Frequency:** __Dry__ **Report Date:** _01/09/20____

Table 1. Sampling frequencies for groups of parameters by CIH station. Greyed boxes = no sample.

Station	Continuous RBR Sensor	Weekly			Monthly			Five Times/Year (wet & dry)		
		Conventional	Algae	Bacteria	Nutrients	Algae	Toxins	Metals	Organics	Toxicity
CIH04		✓		✓	✓	✓	✓	✓	✓	✓
CIH05		✓		✓	✓	✓	✓	✓	✓	✓
CIH06	✓	✓	✓		✓		✓	✓	✓	✓
CIH07	✓	✓	✓		✓		✓	✓	✓	✓
CIH08		✓		✓	✓					
CIH13		✓		✓	✓					
CIH16		✓		✓	✓					
CIH17		✓			✓			✓	✓	✓
CIH20	✓	✓	✓		✓		✓			
CIH22		✓		✓	✓					
CIH23	✓	✓	✓		✓		✓	✓	✓	✓
CIH24		✓		✓	✓					
CIH26		✓		✓	✓					
CIH28		✓		✓	✓			✓	✓	✓
CIH29		✓		✓	✓	✓	✓	✓	✓	✓
CIH30		✓		✓	✓			✓	✓	✓

Station	Frequency	Comp'd	Team Lead	Time	Comments: CSUCI students took samples at CIH04, 5C, 5D and 06.
CIH04	Week/Month	Yes	Carter	10:00	Field measurements only. Walk-in
CIH05	Week/Month	Yes	Carter	10:30	CIH5D: Walk-in. CIH05: Bucket
CIH06	Week/Month	Yes	Carter	11:30	No Remote Sensor maintenance. Walk-in.
CIH07	Week/Month	No			
CIH08	Week/Month	No			
CIH13	Week/Month	No			
CIH16	Week/Month	No			
CIH17	Week/Month	No			
CIH20	Week/Month	No			
CIH22	Week/Month	No			
CIH23	Week/Month	No			
CIH24	Week/Month	No			
CIH26	Week/Month	No			
CIH28	Week/Month	No			
CIH29	Week/Month	No			
CIH30	Week/Month	No			

Summary of deviations from the QAPP: Water sampling limited to Field Measurements only at 4 stations. **No laboratory samples.** **CWT Crew:** C. Carter. **CSUCI Crew:** E. Worden, L. Davidson, S.Abara

Copies of the **Field Log Sheets**, **Water Sample Results** and **Chain of Custody** documents are attached.

Submitted by: _Chuck Carter_  Date: _01/09/20____

C:\Users\chuck\Dropbox\C.I. Harbor Water Group\CWT\FieldLogs\010720\EventSummaryReport10720.docx

Channel Islands Harbor
Water Sampling Results

Site	Location	Date	Time	DO Top	DO Bot	pH	Temp	Conduc	Salinity	Turbidity	Enterococcus	5 day rain	YTD rain
4	Wooley Gate	11/27/19		8.60		7.73	68.4		21.0	83		1.41"	1.83"
4		12/04/19	12:05 PM							225	15,531	1.46"	3.49"
4		12/10/19	11:05 AM	4.90	5.20	7.58	61.0			9	160	0.28"	3.78"
4		12/17/19	11:20 AM	10.89		8.03	56.3	39.8	33.3	2	10	0.01"	3.79"
4		12/26/19	1:30 PM	8.19		7.16	66.1	12.2	8.0	81		4.13"	7.92"
4		01/07/20	10:00 AM	10.02		7.74	59.9	48.2	33.7	3		0.00"	7.92"
5	Fifth St Bridge	01/07/20	10:30 AM	11.18		7.77	59.7	44.0	31.2	6		0.00"	7.92"
5D	Fifth St Drain	11/27/19	12:30 PM							674		1.41"	1.83"
5D		12/04/19	1:10 PM							176	15,531	1.46"	3.49"
5D		12/10/19	12:30 PM	8.26		7.60	64.2		4.0	50	1,317	0.28"	3.78"
5D		12/17/19	10:00 AM	11.07		7.79	55.0	3.6	2.5	28	432	0.01"	3.79"
5D		12/26/19	1:45 PM	9.57		7.29	61.1	31.1	2.0	42		4.13"	7.92"
5D		01/07/20	10:45 AM							2		0.00"	7.92"
6	Seabridge shallow bay	11/27/19											
6		12/04/19	12:30 PM							2		1.41"	1.83"
6		12/10/19	10:30 AM	6.68	6.16	7.78	61.4		31.4	9	2,723	1.46"	3.49"
6		12/17/19	11:40 AM	9.34	9.42	7.79	56.9	39.9	33.5	1	10	0.28"	3.78"
6		12/26/19	2:00 PM	9.04	8.41	7.71	55.7	34.0	28.4	3		4.13"	7.92"
6		01/07/20	11:30 AM	10.36	10.64	7.76	58.7	40.4	32.2	1		0.00"	7.92"
8	Hemlock MS4	12/04/19	11:45 AM										
8	Incorrectly ID'd as CIH26	12/10/19	11:40 AM	6.62	5.41	7.82	61.4		31.6	23	24,192	1.46"	3.49"
8	Corrected ID= CIH08	12/17/19	12:15 PM	8.70		7.86	66.1	47.2	35.3	2	41	0.01"	3.79"

C:\Users\chuck\Documents\CIHarbor\SWAMP\CIWaterSample\CWT Water Samples010720\Site

Channel Islands Harbor
Water Sampling Results

Site	Location	Date	Time	DO Top	DO Bot	pH	Temp	Conduc	Salinity	Turbidity	Enterococcus	5 day rain	YTD rain
13	Oxnard West MS4	12/04/19	11:20 AM	10.10	7.45	7.41	56.4				56	24,192	1.46" 3.49"
13		12/10/19	12:00 PM	6.42		7.82	61.1	41.0	32.3		2	120	0.28" 3.78"
13		12/17/19	12:40 PM	8.45		7.93	57.2	41.1	34.1		2	30	0.01" 3.79"
13		12/26/19	2:30 PM	9.97		7.24	60.0	23.6	16.4		13		4.13" 7.92"

Legend:

DO Top Dissolved Oxygen at 1' under surface. Low: < 5 ppm is hazardous to aquatic life.

DO Bot Dissolved Oxygen 1' above bottom.

pH pH is a measure of how acidic or basic (alkaline) the water is. Normal range 7 - 8. Swimming pool= 7.2 - 7.8.

Conductivity Conductivity: ability of water to conduct an electrical current. Ocean 55 mS; fresh 50- 800 µS (micro Siemen)

Salinity Salinity is a measure of the amount of salts in the water. Ocean 32 g/L

Turbidity Turbidity is a measure of the amount of suspended particles. Normal 1 - 10 NTU. High nutrients >10 NTU

Enterococcus Enterococcus bacteria are one type of indicator of fecal contamination. Single Sample limit over 104 MPN

5 day rain Amount of rain in the last 5 days, per <https://www.vcwatershed.net/fws/AutoMedia.htm>

YTD rain Amount of rain since Oct 1, 2019. Water Year: Oct 1 through Sept 30th

CWT Field Log Sheet

Waterbody Name: Channel Islands Harbor_WBD NO_18070103201

GPS Reference GPS Reading

Latitude 34.186739

v

Longitude -119.232246

v

Project Name and/or ID: CI Harbor

Station ID: CIH04

Date: Jan 07, 2020

Arrival time 9:40

Agency/Organization name and/or ID: CINC CWT

Station Name: Wooley Fish Gate

Access from: Bank; Boat; Bridge; Dock; Walk-in (Wading)

Waterbody type: Bay, MS4 Storm Drain; Ag Drain

Team Name:

Location ID

Station Visit ID

Leader (name & phone #): C. Carter (949) 677-7284

Date of last rain: 12/26/2019

Members: CINC CWT + B. Carter

Oxnard- Port Hueneme:

(list additional names on back) CSUCI Team: E. Worder, L. Davidson, S. Abara

vcwatershed.net/fws/Autimedia

Rain in the last 5 days: 0.0"

Observations: Circle one underlined option:

Season: Wet/Dry

Observations Time: 9:45

Cloud cover	<u>no clouds</u> ; partly cloudy; cloudy sky (overcast);	Wind Direction (From)	
Precipitation	<u>none</u> ; misty; foggy; drizzle; rain; snow;	Wind Intensity (Beaufort)	
Wind	<u>calm</u> ; breezy; windy;		
Water Murkiness	<u>clear water</u> ; cloudy water (>4" visibility); murky (<4" visibility). [this pertains to the water itself, not to scum]		
Tide Level	Recent High Tide: 8:15 Sea Level: <u>+5.6'</u>	Next Low Tide: 1:51 pm PST Sea Level: <u>-0.3'</u>	Current Tide Level:
Estimated Flow Category	<0.1 cfs; 0.1 - 1 cfs; 1 - 5 cfs; 5 - 20 cfs; 20 - 50 cfs; 50 - 200 cfs; >200 cfs. If no flow at drains, record a field sheet with comment. <u>Ebb tide</u>		
Sample color	<u>none</u> ; amber; yellow; green; brown; gray; other: Note: Use Bacteria bottle to determine color.		
Sample odor	<u>none</u> ; fresh algae smell; chlorine; sulfide (rotten eggs); sewage; other		
Other (presence):	<u>algae or water plants (percent coverage); oily sheen; foam or suds; leaf litter; trash; encampments; other</u> <u>See photo: Wooley Gate 010720.jpg</u>		

Water Quality Measurements

Note: Must have 3 readings with increase/ decrease less than 1%

Instrument ID	Parameter (Characteristic)	Unit	Result	Repeated Measurement Result	Bracket/Resolution	Measure Time	Measure Depth*	Comments
Hach HQ40d	TOP Dissolved oxygen (DO)	mg/l (ppm)	10.05	10.01	10.00	10:00	1 foot	
	Bottom Dissolved oxygen (DO)	mg/l (ppm)	/	/	/	/	7 feet	If bottom depth is less than 7 feet, sample at 1 foot above bottom
	pH	pH	7.72	7.74	7.77	/	1 foot	
	Temperature, water	°F	59.7	59.9	/	/	1 foot	
	Specific conductivity	µS/cm (mS/cm)	48.2	48.2	48.2	/	1 foot	
	Salinity	mg/l (ppt)	33.6	33.7	33.7	/	1 foot	
	Turbidity Secchi	Feet	/	/	/	/	/	Record Extinction depth (Result) and bottom depth.
Hach 2100P	Turbidity	NTU	3.13	3.07	3.07	/	1 foot	Use 500 mL Nalgene bottle if meter is not available

*Measurement Depth: (Select) surface; mid-column; near-bottom; (or provide measured number and unit)water sampling device (circle) none; bucket; pole & beaker; LaMotte samplerContainers pre-cleaned by: vendor; laboratory; Project Team; otherSheet completeness review by C. Carter

Departure Time 10:15

1. Take pictures when water is observed flowing from agriculture or storm drain.

Office use only	
Season	
Entered dBase by	Date
checked by	Date

CWT Field Log Sheet

Date: Jan 07, 2020

Page 2

Water Samples		Station ID: CIH04		Collection time 10 ⁰⁰					
Sample ID	Date Time	Count	Type	Size	Analytes	W,M,5x	Samp	Depth	Comment
CIH04BAC		1	Sterile Plastic IDEXX	4 oz.	Enterococcus	Weekly	G	0.1	SM 9230 D City Lab
CIH04PAH		2	Amber Glass	1 Liter	PAHs RL 0.1 µg/L	Wet			EPA 8270C
CIH04PCB		2	Amber Glass	1 Liter	PCBs RL ng/L	Wet			EPA 8082 GC/MS/GC
CIH04VOA		3	Clear glass vial	40 mL	VOAs with Boric Acid .05 mL	Wet			EPA 8260 B
CIH04AMM		1	Amber Glass HDPE?	250 mL	Total Ammonia-N (H ₂ SO ₄)	Monthly			SM 4500 NH ₃ F
CIH04PHO	*PO4 2.49 mg/L	1	Amber Glass	250 mL	Total Phosphorus Phosphorous-P	Monthly			SM 4500 PE 4500-P B SM
CIH04TOC		1	Glass		Total Organic Carbon (HCL or H ₂ SO ₄)	Monthly			EPA 415.1
CIH04NIT	*NO3 6.37 mg/L	1	HDPE Plastic	250 mL	Nitrate-N, Nitrite-N, Total Nitrogen, TKN	Monthly			EPA 300.0 EPA 353.2? EPA 351.2??
CIH04ORT		1	HDPE Plastic	250 mL	Total Orthophosphate-P	Monthly			SM 4500 PE
CIH04CHL		1	Amber Glass		Algae/ Chlorophyll a, Phytoplankton (Log/s)	Monthly			SM10200H??? AquaticEcoTech
CIH04TOX		1			Toxins: Microcystin, Cylindrospermopsin	Monthly			LCMS ELISA
CIH04MET		1	HDPE Plastic		Metals: As, Cd, Cr, Cu, Fe, PB, Ni, Se, Zn	5x/yr			EPA 200.8 EPA 200.7 EPA
CIH04PES		2	Amber Glass	250 mL	OC Pest, PCBs, OP Pest, Pyrethroids, Toxaphene	5x/yr			EPA 625 EPA 625 NCI EPA 608 EPA 8141B
					TPH				

SAMP: Enter the SampleTypeCode: (C= Combined; G= Grab; I= Integrated; S= Sediment) in the **SAMP** box. Depth: GRAB: use 0.1 for subsurface samples; if too shallow to submerge bottle; depth = 0. INTEGRATED Depth = -88. Sample are taken at MULTIPLE depths water sampling device (circle) none; basket; pole&clamp; pump; bucket; pole& beaker; LaMotte Sampler; Kemmerer

Containers pre-cleaned by: vendor; laboratory; Project crews; other _____

Photo Log Picture number (use # generated by digital camera):

Looking Direction (upstream or downstream) *Trash @ Woolly Gate 010720.jpg*

Forms and Files

Sonde or PDA File name(s): LDO101 S/N 18201259703; PHC101 S/N 182072569776; CDC401 S/N 18211258925

*D900 Collected from CSUCC.

Chain of Custody Log updated by:

No samples for City

Sheet completeness review by

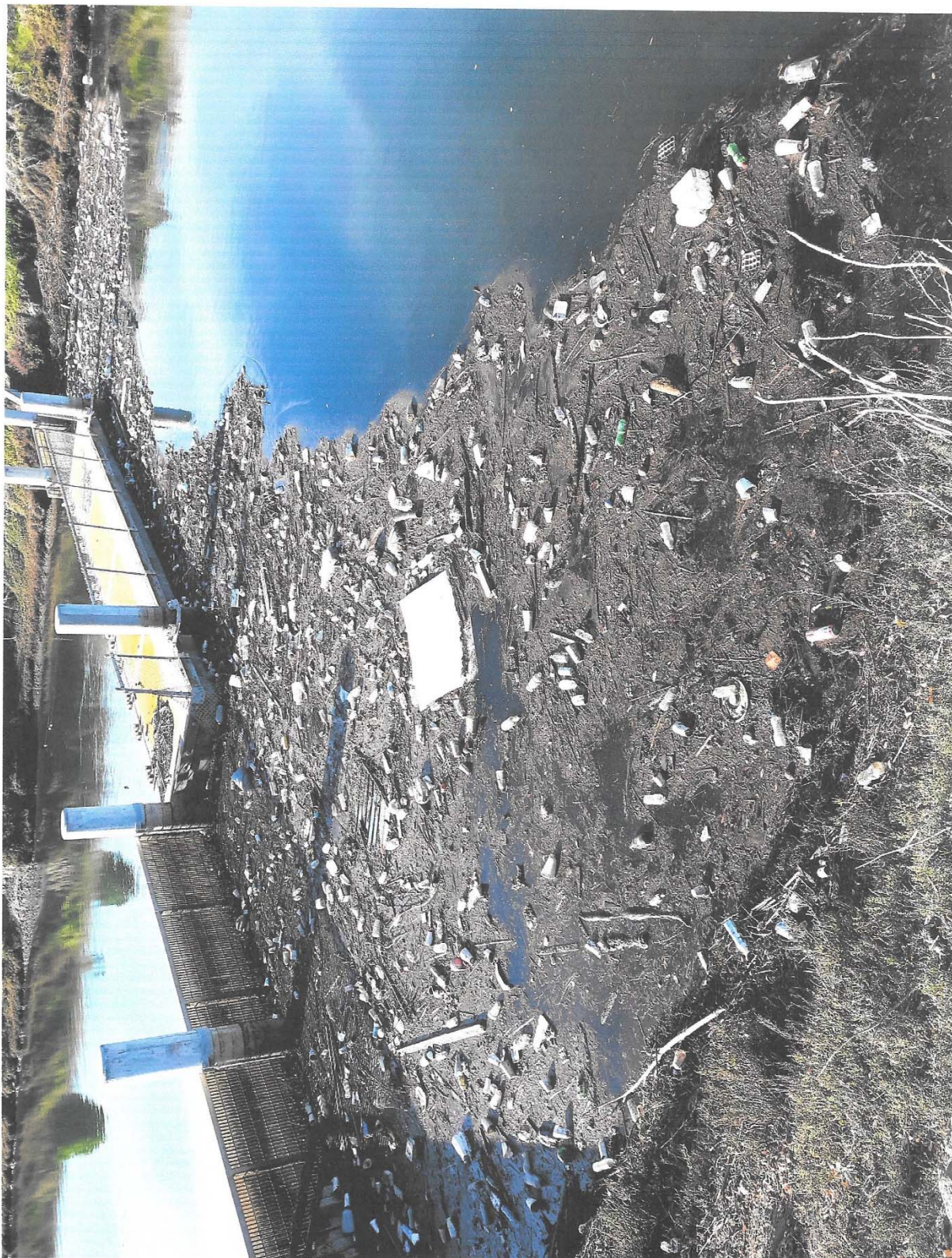
CC

Departure Time 10:15 PST

Office use only

Entered dBase by _____ Date _____

checked by _____ Date _____



Trash Debris in Edison Canal Estuary 1/7/2020

CWT Field Log Sheet

Waterbody Name: Channel Islands Harbor_WBD NO_ 18070103201

GPS Reference GPS Reading

Latitude 34.197246

v 34.197246

Longitude -119.235644

v 119.235644

Project Name and/or ID: CI Harbor

Station ID: CIH05 SC Date: Jan 07, 2020

Arrival time 10:30 Center of bridge
South side

Agency/Organization name and/or ID: CINC CWT

Station Name: Fifth St Bridge -Center of Canal

Access from: Bank; Boat; Bridge; Dock; Walk-in (Wading)

Waterbody type: Bay, MS4 Storm Drain; Ag Drain

Team Name:

Location ID

Station Visit ID

Leader (name & phone #): C. Carter (949) 677-7284

Date of last rain: 12/26/2019

Members: CINC CWT: B. Carter

Oxnard- Port Hueneme:

(list additional names on back) CSUCI Team: E. Worden, L. Davidson, S. Abara

vcwatershed.net/fws/Automedia

Season: Wet/Dry

Rain in the last 5 days: 0.00"

Observations: Circle one underlined option:

Photos¹

Yes/No

Observations Time: 10:30

Cloud cover	<u>no clouds</u> ; partly cloudy; cloudy sky (overcast);	Wind Direction (From)	
Precipitation	<u>none</u> ; misty; foggy; drizzle; rain; snow;	Wind Intensity (Beaufort)	
Wind	<u>calm</u> ; breezy; windy;		
Water Murkiness	<u>clear water</u> ; cloudy water (>4" visibility); murky (<4" visibility). [this pertains to the water itself, not to scum]		
Tide Level	Recent High Tide: 8:15 Sea Level: <u>+5.6'</u> am PST	Next Low Tide: 1:51 pm PST Sea Level: <u>-0.3'</u>	Current Tide Level: <u>2.5'</u>
Estimated Flow Category	<0.1 cfs; 0.1 - 1 cfs; 1 - 5 cfs; 5 - 20 cfs; 20 - 50 cfs; 50 - 200 cfs; >200 cfs. If no flow at drains, record a field sheet with comment.		
Sample color	<u>none</u> ; amber; yellow; <u>green</u> ; brown; gray; other: Note: Use Bacteria bottle to determine color.		
Sample odor	<u>none</u> ; fresh algae smell; chlorine; sulfide (rotten eggs); sewage; other		
Other (presence):	algae or water plants (percent coverage); <u>oily sheen</u> ; foam or suds; leaf litter; trash; <u>encampments</u> ; other		

Water Quality Measurements

Note: Must have 3 readings with increase/ decrease less than 1%

Instrument ID	Parameter (Characteristic)	Unit	Result	Repeated Measurement Result	Bracket/Resolution	Measure Time	Measure Depth*	Comments
Hach HQ40d	TOP Dissolved oxygen (DO)	mg/l (ppm)	11.15	11.20	11.19	10:30	1 foot	
	Bottom Dissolved oxygen (DO)	mg/l (ppm)	/	/	/		7 feet	If bottom depth is less than 7 feet, sample at 1 foot above bottom
	pH	pH	7.77	7.77	7.77		1 foot	
	Temperature, water	°F	59.7				1 foot	
	Specific conductivity	µS/cm mS/cm	44.0	44.0	44.0		1 foot	
	Salinity	mg/l (ppt)	31.3	31.3	31.2		1 foot	
	Turbidity Secchi	Feet						Record Extinction depth (Result) and bottom depth.
Hach 2100P	Turbidity	NTU	5.50	5.91	6.06		1 foot	Use 500 mL Nalgene bottle if meter is not available

*Measurement Depth: (Select) surface; mid-column; near-bottom; (or provide measured number and unit)

water sampling device (circle) none; bucket; pole & beaker; LaMotte sampler

Containers pre-cleaned by: vendor; laboratory; Project Team; other

Sheet completeness review by

Departure Time 11:15

1. Take pictures when water is observed flowing from agriculture or storm drain.

Office use only

Season

Entered dBase by Date

checked by Date

CSUCI - 5B

CWT Field Log Sheet

Date: Jan 7, 2020

Page 2

Water Samples									
Station ID: <u>CIH50</u> <u>CIH05</u> Collection time <u>10:30</u>									
Sample ID	Date Time	Count	Type	Size	Analytes	W,M,5x	Sam	Depth	Comment
CIH5DBAC		1	Sterile Plastic IDEXX	4 oz.	Enterococcus	Weekly	G	0	SM 9230 D City Lab
CIH5DPAH		2	Amber Glass	1 Liter	PAHs RL 0.1 µg/L	Wet			EPA 8270C
CIH5DPCB		2	Amber Glass	1 Liter	PCBs RL ng/L	Wet			EPA 8082 GC/MS/GC
CIH5DVOA		3	Clear glass vial	40 mL	VOAs with Boric Acid .05 mL	Wet			EPA 8260 B
CIH5DAMM		1	Amber Glass	250 mL	Total Ammonia-N (H ₂ SO ₄)	Monthly			SM 4500 NH ₃ F
CIH5DPHO		1	HDPE?	250 mL	Total Phosphorus Phosphorous-P	Monthly	G	0	SM 4500 PE 4500-P B SM
CIH5DTCO		1	Glass		Total Organic Carbon (HCL or H ₂ SO ₄)	Monthly			EPA 415.1
CIH5DNIT		1	HDPE Plastic	250 mL	Nitrate-N, Nitrite-N, Total Nitrogen, TKN	Monthly			EPA 300.0 EPA 353.2? EPA 351.2??
CIH5DORT		1	HDPE Plastic	250 mL	Total Orthophosphate-P	Monthly	G	0	SM 4500 PE
CIH5DCHL		1	Amber Glass		Algae/ Chlorophyll a, Phytoplankton (Logan's)	Monthly			SM10200H??? AquaticEcoTech
CIH5DTOX		1			Toxins: Microcystin, Cylindrospermopsin	Monthly			LCMS ELISA
CIH5DMET		1	HDPE Plastic		Metals: As, Cd, Cr, Cu, Fe, PB, Ni, Se, Zn	5x/yr			EPA 200.8 EPA 200.7 EPA
CIH5DPES		2	Amber Glass	250 mL	OC Pest, PCBs, OP Pest, Pyrethroids, Toxaphene	5x/yr			EPA 625 EPA 625 NCI EPA 608 EPA 8141B
<p>SAMP: Enter the SampleTypeCode: (C= Combined; G= Grab; I= Integrated; S= Sediment) in the SAMP box. Depth: GRAB: use 0.1 for subsurface samples; if too shallow to submerge bottle; depth =0. INTEGRATED Depth = -88. Sample are taken at MULTIPLE depths water sampling device (circle) <u>none</u>; basket; pole&clamp; pump; bucket; pole& beaker; LaMotte Sampler; Kemmerer</p> <p>Containers pre-cleaned by: <u>vendor</u>; <u>laboratory</u>; Project crews; other _____</p>									
<p>Photo Log Picture number (use # generated by digital camera):</p> <p>Looking Direction (upstream or downstream) <u>DR 900 Color meter for Nitrate & Phosphate</u></p> <p>Forms and Files</p> <p>* <u>DR 9005 CSUCI C</u></p> <p>Sonde or PDA File name(s) <u>2x0:30 second interval for 2 minutes</u></p> <p><u>Sonde</u></p>									

Chain of Custody Log updated by:

Sheet completeness review by CCDeparture Time 11:15 PST

Office use only

Entered dBase by _____ Date _____

checked by _____ Date _____

CWT Field Log Sheet CIH05_010720

Printed 1/7/2020



Fifth SE 010720

CSUCI Students collecting water samples.

CWT Field Log Sheet

Waterbody Name: Channel Islands Harbor_WBD NO_18070103201

GPS Reference GPS Reading

Latitude 34.197246

v 34.197246

Longitude -119.235644

v 119.235644

Project Name and/or ID: CI Harbor

Station ID: CIH5D

Date: Jan 07, 2020

Arrival time 10:20

Agency/Organization name and/or ID: CINC CWT

Station Name: Fifth St Bridge -Ag. Drain Pipe

Access from: Bank; Boat; Bridge; Dock; Walk-in (Wading)

Waterbody type: Bay, MS4 Storm Drain, Ag Drain

Team Name:

Location ID

Station Visit ID

Leader (name & phone #): C. Carter (949) 677-7284

Date of last rain: 12/26/2019

Members: CINC CWT: B. Carter

Oxnard- Port Hueneme:

(list additional names on back) CSUCI Team: E. Worden, L. Davidson, S. Abara

vcwatershed.net/fws/Automedia

Rain in the last 5 days: 0.00"

Observations: Circle one underlined option:

Photos¹

Season: Wet/Dry

Observations Time: 10:30

Cloud cover	<u>no clouds</u> ; partly cloudy; cloudy sky (overcast);	Wind Direction (From)	
Precipitation	<u>none</u> ; misty; foggy; drizzle; rain; snow;	Wind Intensity (Beaufort)	
Wind	<u>calm</u> ; breezy; windy;		
Water Murkiness	<u>clear water</u> ; cloudy water (>4" visibility); murky (<4" visibility). [this pertains to the water itself, not to scum]		
Tide Level	Recent High Tide: 8:15 Sea Level: +5.6'	Next Low Tide: 1:51 pm PST	Sea Level: -0.3'
Estimated Flow Category	<0.1 cfs; 0.1 - 1 cfs; 1 - 5 cfs; 5 - 20 cfs; 20 - 50 cfs; 50 - 200 cfs; >200 cfs. If no flow at drains, record a field sheet with comment.		
Sample color	<u>none</u> ; amber; yellow; green; brown; gray; other: Note: Use Bacteria bottle to determine color.		
Sample odor	<u>none</u> ; fresh algae smell; chlorine; sulfide (rotten eggs); sewage; other		
Other (presence):	algae or water plants (percent coverage); <u>oily sheen</u> ; foam or suds; leaf litter; trash; <u>encampments</u> ; other		

Water Quality Measurements

Note: Must have 3 readings with increase/ decrease less than 1%

Instrument ID	Parameter (Characteristic)	Unit	Result	Repeated Measurement Result	Bracket/Resolution	Measure Time	Measure Depth*	Comments
Hach HQ40d	TOP Dissolved oxygen (DO)	mg/l (ppm)					1 foot	
	Bottom Dissolved oxygen (DO)	mg/l (ppm)					7 feet	If bottom depth is less than 7 feet, sample at 1 foot above bottom
	pH	pH					1 foot	
	Temperature, water	°F					1 foot	
	Specific conductivity	µS/cm mS/cm					1 foot	
	Salinity	mg/l (ppt)					1 foot	
	Turbidity Secchi	Feet						Record Extinction depth (Result) and bottom depth.
Hach 2100P	Turbidity	NTU	2.02	1.90	1.87	10:30	1 foot	Use 500 mL Nalgene bottle if meter is not available

*Measurement Depth: (Select) surface; mid-column; near-bottom; (or provide measured number and unit)

water sampling device (circle) none; bucket; pole & beaker; LaMotte sampler

Containers pre-cleaned by: vendor; laboratory; Project Team; other

Sheet completeness review by CC

Departure Time 11:15

1. Take pictures when water is observed flowing from agriculture or storm drain.

Office use only

Season

Entered dBase by Date

checked by Date

CWT Field Log Sheet

CSUCI = 5A

Date: Jan 7, 2020

Page 2

Water Samples		Station ID: CIH5D		Collection time 10:45					
Sample ID	Date Time	Count	Type	Size	Analytes	W,M,5x	Samp	Depth	Comment
CIH5DBAC		1	Sterile Plastic IDEXX	4 oz.	Enterococcus	Weekly	G	0	SM 9230 D City Lab
CIH5DPAH		2	Amber Glass	1 Liter	PAHs RL 0.1 µg/L	Wet			EPA 8270C
CIH5DPCB		2	Amber Glass	1 Liter	PCBs RL ng/L	Wet			EPA 8082 GC/MS/GC
CIH5DVOA		3	Clear glass vial	40 mL	VOAs with Boric Acid .05 mL	Wet			EPA 8260 B
CIH5DAMM		1	Amber Glass	250 mL	Total Ammonia-N (H ₂ SO ₄)	Monthly			SM 4500 NH ₃ F
CIH5DPHO	1/7/20 10:45 Shake 20 sec Cook 2 min 0.65 mg/L	1	Amber Glass	250 mL	Total Phosphorus Phosphorous-P	Monthly	G	0.1	SM 4500 PE 4500-P B SM
CIH5DTCO		1	Glass		Total Organic Carbon (HCL or H ₂ SO ₄)	Monthly			EPA 415.1
CIH5DNIT	1/7/20 10:45 74.03 mg/L		HDPE Plastic	250 mL	Nitrate-N, Nitrite-N, Total Nitrogen, TKN	Monthly	G	0.1	EPA 300.0 EPA 353.2? EPA 351.2??
CIH5DORT		1	HDPE Plastic	250 mL	Total Orthophosphate-P	Monthly			SM 4500 PE
CIH5DCHL		1	Amber Glass		Algae/ Chlorophyll a, Phytoplankton (Lago's)	Monthly			SM10200H??? AquaticEcoTech
CIH5DTOX		1			Toxins: Microcystin, Cylindrospermopsin	Monthly			LCMS ELISA
CIH5DMET		1	HDPE Plastic		Metals: As, Cd, Cr, Cu, Fe, PB, Ni, Se, Zn	5x/yr			EPA 200.8 200.7 EPA
CIH5DPES		2	Amber Glass	250 mL	OC Pest, PCBs, OP Pest, Pyrethroids, Toxaphene	5x/yr			EPA 625 EPA 625 NCI EPA 608 EPA 8141B
<p>SAMP: Enter the SampleTypeCode: (C= Combined; G= Grab; I= Integrated ; S= Sediment) in the SAMP box. Depth:GRAB: use 0.1 for subsurface samples; if too shallow to submerge bottle; depth =0. INTEGRATED Depth = -88. Sample are taken at MULTIPLE depths water sampling device (circle) <u>none</u>; <u>basket</u>; <u>pole&clamp</u>; <u>pump</u>; <u>bucket</u>; <u>pole& beaker</u>; <u>LaMotte Sampler</u>; <u>Kemmerer</u></p> <p>Containers pre-cleaned by: <u>vendor</u>; <u>laboratory</u>; <u>Project crews</u>; <u>other</u></p>									
<p>Photo Log Picture number (use # generated by digital camera):</p> <p>Looking Direction (upstream or downstream)</p>									
<p>Forms and Files DR900 Colorimeter CSUCI for Phosphorus & Nitrate</p> <p>Sonde or PDA File name(s) exo 30 second intervals for 2 minutes</p>									

Chain of Custody Log updated by:

Sheet completeness review by

Departure Time 11:15 PST

Office use only

Entered dBase by Date

checked by Date

CWT Field Log Sheet CIH5D_122619

Printed 1/7/2020

CWT Field Log Sheet

Waterbody Name: Channel Islands Harbor_WBD NO_18070103201

GPS Reference GPS Reading

Latitude 34.18844

Longitude -119.223076

✓	34.18803
✓	119.22333

Project Name and/or ID: CI Harbor

Station ID: CIH06

Date: Jan 07, 2020

Arrival time 11:30

Agency/Organization name and/or ID: CINC CWT

Access from: Bank; Boat; Bridge; Dock; Walk-in (Wading)

Station Name: Seabridge Marina - Remote sensor

Waterbody type: Bay, MS4 Storm Drain; Ag Drain

Team Name:

Location ID Guest Dock

Station Visit ID

Leader (name & phone #): C. Carter (949) 677-7284

Date of last rain: 12/26/2019

Members: CINC CWT: B. Carter

Oxnard- Port Hueneme:

(list additional names on back) CSUCI Team: E. Worden, L. Davidson, S. Abara

vcwatershed.net/fws/Automedica

Season: Wet/Dry

Rain in the last 5 days: 0.00"

Observations: Circle one underlined option:

Photos¹ Yes/ No

Observations Time: 11:30

Cloud cover	<u>no clouds</u> ; partly cloudy; cloudy sky (overcast);	Wind Direction (From)	
Precipitation	<u>none</u> ; misty; foggy; drizzle; rain; snow;	Wind Intensity (Beaufort)	
Wind	<u>calm</u> ; breezy; windy;	Wind Intensity (Beaufort)	
Water Murkiness	<u>clear water</u> ; cloudy water (>4" visibility); murky (<4" visibility). [this pertains to the water itself, not to scum]		
Tide Level	Recent High Tide: 8:15 Sea Level: +5.6' am PST	Next Low Tide: 1:51 pm PST Sea Level: -0.3'	Current Tide Level: 1.3
Estimated Flow Category	<0.1cfs; 0.1 - 1 cfs; 1 - 5 cfs; 5 - 20 cfs; 20 - 50 cfs; 50 - 200 cfs; >200 cfs. If no flow at drains, record a field sheet with comment.		
Sample color	<u>none</u> ; amber; yellow; green; brown; gray; other: Note: Use Bacteria bottle to determine color.		
Sample odor	<u>none</u> ; fresh algae smell; chlorine; sulfide (rotten eggs); sewage; other		
Other (presence:)	algae or water plants (percent coverage); oily sheen; foam or suds; leaf litter; trash; encampments; other		

Water Quality Measurements

Note: Must have 3 readings with increase/ decrease less than 1%

Instrument ID	Parameter (Characteristic)	Unit	Result	Repeated Measurement Result	Bracket/ Resolution	Measure Time	Measure Depth*	Comments
Hach HQ40d	TOP Dissolved oxygen (DO)	mg/l (ppm)	10.27	10.39	10.43	11:30	1 foot	
	Bottom Dissolved oxygen (DO)	mg/l (ppm)	10.61	10.65	10.66		7 feet	If bottom depth is less than 7 feet, sample at 1 foot above bottom
	pH	pH	7.74	7.76	7.78		1 foot	
	Temperature, water	°F	59.7		58.7		1 foot	
	Specific conductivity	µS/cm mS/cm	40.4	40.3	40.4		1 foot	
	Salinity	mg/l (ppt)	32.2	32.2	32.3		1 foot	
	Turbidity Secchi	Feet						Record Extinction depth (Result) and bottom depth.
Hach 2100P	Turbidity	NTU	0.63	0.62	0.63		1 foot	Use 500 mL Nalgene bottle if meter is not available

*Measurement Depth: (Select) surface; mid-column; near-bottom; (or provide measured number and unit)

water sampling device (circle) none bucket; pole & beaker; LaMotte sampler

Containers pre-cleaned by: vendor; laboratory; Project Team; other

Sheet completeness review by CC

Departure Time 11:45

1. Take pictures when water is observed flowing from agriculture or storm drain.

Office use only

Season

Entered dBase by Date

checked by Date

CWT Field Log Sheet

Date: Jan 07, 2020

Page 2

Water Samples		Station ID: CIH06			Collection time: 11:30			
Sample ID	Date Time	Count	Type	Size	Analytes	W,M,5x	SampDepth	Comment
CIH06BAC		1	Sterile Plastic IDEXX	4 oz.	Enterococcus	Weekly	G 0.1	SM 9230 D City Lab
CIH06PAH		2	Amber Glass	1 Liter	PAHs RL 0.1 µg/L	Wet		EPA 8270C
CIH06PCB		2	Amber Glass	1 Liter	PCBs RL ng/L	Wet		EPA 8082 GC/MS/GC
CIH06VOA		3	Clear glass vial	40 mL	VOAs with Boric Acid .05 mL	Wet		EPA 8260 B
CIH06M		1	Amber Glass	250 mL	Total Ammonia-N (H ₂ SO ₄)	Monthly		SM 4500 NH ₃ F
CIH06PHO	1/7/20 11:30 0.26 mg/L	1	Amber Glass	250 mL	Total Phosphorus Phosphorous-P	Monthly	G 0.1	SM 4500 PE 4500-P B SM
CIH06TOC		1	Glass		Total Organic Carbon (HCL or H ₂ SO ₄)	Monthly		EPA 415.1
CIH06NIT	1/7/20 11:30 3.74 mg/L	1	HDPE Plastic	250 mL	Nitrate-N, Nitrite-N, Total Nitrogen, TKN	Monthly	G 0.1	EPA 300.0 EPA 353.2? EPA 351.2??
CIH06ORT		1	HDPE Plastic	250 mL	Total Orthophosphate-P	Monthly		SM 4500 PE
CIH06CHL		1	Amber Glass		Algae/ Chlorophyll a, Phytoplankton (Logot's)	Monthly		SM10200H??? AquaticEcoTech
CIH06TOX		1			Toxins: Microcystin, Cylindrospermopsin	Monthly		LCMS ELISA
CIH06MET		1	HDPE Plastic		Metals: As, Cd, Cr, Cu, Fe, PB, Ni, Se, Zn	5x/yr		EPA 200.8 EPA 200.7 EPA
CIH06PES		2	Amber Glass	250 mL	OC Pest, PCBs, OP Pest, Pyrethroids, Toxaphene	5x/yr		EPA 625 EPA 625 NCI EPA 608 EPA 8141B
<p>SAMP: Enter the SampleTypeCode: (C= Combined; G= Grab; I= Integrated ; S= Sediment) in the SAMP box. Depth:GRAB: use 0.1 for subsurface samples; if too shallow to submerge bottle; depth =0. INTEGRATED Depth = -88. Sample are taken at MULTIPLE depths water sampling device (circle) <u>none</u>; <u>basket</u>; <u>pole&clamp</u>; <u>pump</u>; <u>bucket</u>; <u>pole& beaker</u>; <u>LaMotte Sampler</u>; <u>Kemmerer</u></p> <p>Containers pre-cleaned by: <u>vendor</u>; <u>laboratory</u>; <u>Project crews</u>; <u>other</u></p>								
<p>Photo Log Picture number (use # generated by digital camera):</p> <p>Looking Direction (upstream or downstream)</p>								
<p>Forms and Files</p> <p>Sonde or PDA File name(s): LDO101 S/N 18201259703; PHC101 S/N 182072569776; CDC401 S/N 18211258925</p> <p><u>CSUCT DR900 Colorimeter for Phosphorus & Nitrate</u></p>								

Chain of Custody Log updated by: No Bacteria samples today

Sheet completeness review by

Departure Time 11:45 PST

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CWT Field Log Sheet CIH06_010720

Printed 1/7/2020