

Industrial Divers Corporation

2901 SW 3rd Ave, Suite #5
Fort Lauderdale, FL 33315

(954) 523-2906 Office
(954) 525-6521 Fax

October 31, 2019

To: Michell Smith, Environmental Manager, Florida DEP
From: Rocco Galletta, Vice President, IDC

Re: Osborne Reef Tire Mitigation SW238-12: Progress Report Task 12 A

Industrial Divers Corporation (IDC) began Task Order No. SW238-12 part A on September 6, 2019 with up to two, five diver teams using Air with surface supplied dive gear and SCUBA diving equipment. From September 6, 2019 to October 31, 2019, four or five diver teams were deployed with the Reef Ranger, Reef Tender, and/or Reef Keeper Dive Support Vessels (DSV). The combination of one or two DSV's working together, each with a four or five-diver team, collected a total of 7,500 tires. The Reef Tender and Reef Keeper teams pre-rigged tires from the low-density hard bottom reef edge in Priority area 1 along the west edge of the Osborne site, as per instructions from Pat Quinn PhD. Broward County ERM. These two teams used an unmoored vessel technique that uses SCUBA equipped dive teams pre-rigging tires into 30 tire bundles. Reef Tender and Reef Keeper teams can pre-rig up to 1,500 tires to be recovered by the Reef Ranger when weather conditions are good enough for SCUBA diving operations but unfavorable for crane operations due to high wind or swells. IDC has also added a full-time coordinator to manage the higher volume of trailers (up to six per week) generated by the additional boats and crews, a full-time mechanic for outboard engine and crane maintenance and repair, and a shop worker dedicated to filling pressurized cylinders needed for both surface supplied and SCUBA diving. In addition, IDC purchased fifty 1 ¼" shackles and has made 200 extra tire slings which are dedicated for pre-rigging up to 1,500 tires for pick up by the Reef Ranger crane and 4 new cargo nets used to transport tires from the deck of the barge to the hauling container.

The 7,500 tires were recovered and emptied into nine 100 cubic yard trailers located at Berth 28F in Port Everglades. All diving was performed using surface supplied air diving practices with Kirby Morgan diving helmets using hard wired communications or a two-diver team using SCUBA gear and air breathing gas. All the tires collected by the Reef Ranger DSV were lifted in 30 tire clusters with the on-board crane. The tire bundles were placed in cargo nets lined with

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filter fabric which were deployed in the self-bailing hold of the Reef Ranger. The Reef Tender and Reef Keeper teams used an innovative pre-rigging method, the two teams used the 200 slings to pre-rig bundles of 30 tires, up to 1,500 tires for later collection by the Reef Ranger when the weather permits. The pre-rigged bundles have 30 tires each with a large 1 ¼” shackle connecting each bundle to the crane hook. Slings the tires together facilitates efficient picking of the load off the bottom by the Reef Ranger and allowed for efficient unloading into the 100 cubic yard trailers using a dedicated PEV certified land crane set up and operated by IDC at Berth 28F.

Trailer No. 305 had 934 tires, Trailer No. 306 had 900 tires, Trailer No. 307 had 900 tires, Trailer No. 308 had 840 tires, Trailer No. 309 had 840 tires, Trailer No. 310 had 840 tires, Trailer No. 311 had 840 tires, Trailer No. 312 had 840 tires, Trailer 313 the remaining 566 tires and will be taken once it is full. The weight of the trucks with tires was more than 74,000 lbs. for each trailer load listed. The number of tires in each trailer varies based on the sand and crushed shell material found in the recovered tires. We make these adjustments to maintain a legal FDOT highway weight limit of 80,000 lbs.

There was no significant or persistent turbidity observed during the collection, transport and unloading of the tires. IDC has continued to adhere to all the permit requirements for this project while finding innovative ways to improve our safety while increasing our efficiency. The pre-rigging of tires by SCUBA diving teams working from our smaller DSVs the Reef Tender and the Reef Keeper is the way we are significantly increasing overall productivity and efficiency. This technique allows us to continue working in weather conditions that are unsuitable for crane operations offshore. In these less than favorable conditions we are unable to use mechanical lifting capabilities because of the rapid and unpredictable movement caused by wave turbulence and high wind, but we can safely deploy divers to collect and bundle tires on bottom where turbulent surface conditions will not affect them. These bundles are then picked up by the Reef Ranger when seas are more favorable for crane operations.

Task Order #12 A was invoiced on October 31, 2019. The total number of tires collected for SW238 through October 31, 2019 was 163,230. The total tires collected for SW232 and SW238 combined is 257,934 tires.

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May 29, 2019

To: Michell Smith, Environmental Manager, Florida DEP
From: Rocco Galletta, Vice President, IDC

Re: Osborne Reef Tire Mitigation SW238-11: Progress Report Task 11 A

Industrial Divers Corporation (IDC) began on Task Order No. SW238-11 part A on April 20, 2019 with up to three, five diver teams using Nitrox with surface supplied dive gear and SCUBA diving equipment. From April 20, 2019 to May 28, 2019, five diver teams were deployed with the *Reef Ranger*, *Reef Tender*, and/or *Reef Keeper* Dive Support Vessels (DSV). The combination of one, two, or three DSV's working together, each with a five-diver team, collected a total of 7,500 tires. The *Reef Tender* and *Reef Keeper* teams pre-rigged tires from the low density hard bottom reef edge in Priority area 1 along the west edge of the Osborne site, as per instructions from Pat Quinn PhD. Broward County ERM. These two teams used an unmoored vessel technique that uses Nitrox SCUBA equipped dive teams pre-rigging tires into 30 tire bundles. *Reef Tender* and *Reef Keeper* teams can pre-rig up to 1,500 tires to be recovered by the *Reef Ranger* when weather conditions are good enough for diving operations but unfavorable for surface supplied diving and crane operations due to high wind or swells. IDC has also added a full-time coordinator to manage the higher volume of trailers (up to six per week) generated by the additional boats and crews, a full-time mechanic for outboard engine and crane maintenance and repair, and a shop worker dedicated to mixing Nitrox and filling pressurized cylinders needed for both surface supplied and SCUBA diving. Two of the three vessels have been equipped with twelve commercial lift bags and tire rigging slings for the unmoored lift bagging technique. In addition, IDC purchased fifty 1 ¼" shackles and has made 200 extra tire slings which are dedicated for pre-rigging up to 1,500 tires for pick up by the *Reef Ranger* crane.

The 7,500 tires were recovered and emptied into nine 100 cubic yard trailers located at Berth 28F in Port Everglades. All diving was performed using surface supplied Nitrox diving practices with Kirby Morgan diving helmets using hard wired communications or a two-diver team using SCUBA gear and Nitrox breathing gas. All the tires collected by the *Reef Ranger* DSV were

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lifted in 30 tire clusters with the on-board crane. The tire bundles were placed in cargo nets lined with filter fabric which were deployed in the self-bailing hold of the Reef Ranger. The *Reef Tender* and *Reef Keeper* teams used an innovative “live-boat” method with Nitrox SCUBA diving teams sending up clusters of 7 tires with 12 lift bags which are then lifted on deck using a hydraulic A-frame and winch. This method was ideal for collecting tires from the most sensitive areas because it allowed for flexibility in the movement of both the divers and the vessel to efficiently clean up tires in a low density hard bottom edge area. If the sea conditions were not appropriate for using mechanical lifting equipment like the hydraulic a-frame and winch the *Reef Tender* and *Reef Keeper* teams used the 200 slings to pre-rig bundles of 30 tires, up to 1,500 tires for later collection by the *Reef Ranger* when the weather permits. The pre-rigged bundles were 30 tires each with a large 1 ¼” shackle holding 4 tire slings together to facilitate efficient picking of the load off the bottom by the *Reef Ranger* and allowed for efficient unloading into the 100 cubic yard trailers using a dedicated PEV certified land crane set up and operated by IDC at Berth 28F.

Trailer No. 292 was loaded with 900 tires (835 from SW238-10B and 65 from SW238-11A), Trailer No. 293 had 960 tires, Trailer No. 294 had 960 tires, Trailer No. 295 had 990 tires, Trailer No. 296 had 960 tires, Trailer No. 297 had 960 tires, Trailer No. 298 had 960 tires, Trailer No. 299 had 900 tires, Trailer No. 300 had the remaining 745 tires and will be taken once it is full. The weight of the trucks with tires was more than 74,000 lbs. for each trailer load listed. The number of tires in each trailer varies based on the sand and crushed shell material found in the recovered tires. We make these adjustments to maintain a legal FDOT highway weight limit of 80,000 lbs.

There was no significant or persistent turbidity observed during the collection, transport and unloading of the tires. IDC has continued to adhere to all the permit requirements for this project while finding innovative ways to improve our safety while increasing our efficiency. The pre-rigging of tires by Nitrox equipped SCUBA diving teams working from our smaller DSVs the *Reef Tender* and the *Reef Keeper* is one way we are significantly increasing overall productivity and efficiency. This technique allows us to continue working in weather conditions that are unsuitable for crane operations offshore. In these less than favorable conditions we are unable to use mechanical lifting capabilities because of the rapid and unpredictable movement caused by wave turbulence and high wind, but we can safely deploy divers to collect and bundle tires on bottom where turbulent surface conditions will not affect them. These bundles are then picked up by the *Reef Ranger* when seas are more favorable for crane operations.

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Task Order #11 A was invoiced on May 29, 2019. The total number of tires collected for SW238 through May 28, 2019 was 152,609. The total tires collected for SW232 and SW238 combined is 247,013 tires.

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January 15, 2019

To: Michell Smith, Environmental Manager, Florida DEP
From: Rocco Galletta, Vice President, IDC

Re: Osborne Reef Tire Mitigation SW238-10: Progress Report Task 10 A

Industrial Divers Corporation (IDC) began on Task Order No. SW238-10 part A on November 29, 2018 with up to three, five diver teams using Nitrox with surface supplied dive gear and SCUBA diving equipment. From November 29, 2018 to January 14, 2019, five diver teams were deployed with the *Reef Ranger*, *Reef Tender*, and/or *Reef Keeper* Dive Support Vessels (DSV). The combination of one, two, or three DSV's working together, each with a five-diver team, collected a total of 7,500 tires. The *Reef Tender* and *Reef Keeper* teams pre-rigged tires from the low density hard bottom reef edge in Priority area 1 along the west edge of the Osborne site, as per instructions from Pat Quinn PhD. Broward County ERM. These two teams used an unmoored vessel technique that uses Nitrox SCUBA equipped dive teams pre-rigging tires into 30 tire bundles. *Reef Tender* and *Reef Keeper* teams can pre-rig up to 1,500 tires to be recovered by the *Reef Ranger* when weather conditions are good enough for diving operations but unfavorable for surface supplied diving and crane operations due to high wind or swells. IDC has also added a full-time coordinator to manage the higher volume of trailers (up to six per week) generated by the additional boats and crews, a full-time mechanic for outboard engine and crane maintenance and repair, and a shop worker dedicated to mixing Nitrox and filling pressurized cylinders needed for both surface supplied and SCUBA diving. Two of the three vessels have been equipped with twelve commercial lift bags and tire rigging slings for the unmoored lift bagging technique. In addition, IDC purchased fifty 1 ¼" shackles and has made 200 extra tire slings which are dedicated for pre-rigging up to 1,500 tires for pick up by the *Reef Ranger* crane.

The 7,500 tires were recovered and emptied into eight 100 cubic yard trailers located at Berth 28F in Port Everglades. All diving was performed using surface supplied Nitrox diving practices with Kirby Morgan diving helmets using hard wired communications or a two-diver team using SCUBA gear and Nitrox breathing gas. All the tires collected by the *Reef Ranger* DSV were

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lifted in 30 tire clusters with the on-board crane. The tire bundles were placed in cargo nets lined with filter fabric which were deployed in the self-bailing hold of the Reef Ranger. The *Reef Tender* and *Reef Keeper* teams used an innovative “live-boat” method with Nitrox SCUBA diving teams sending up clusters of 7 tires with 12 lift bags which are then lifted on deck using a hydraulic A-frame and winch. This method was ideal for collecting tires from the most sensitive areas because it allowed for flexibility in the movement of both the divers and the vessel to efficiently clean up tires in a low density hard bottom edge area. If the sea conditions were not appropriate for using mechanical lifting equipment like the hydraulic a-frame and winch the *Reef Tender* and *Reef Keeper* teams used the 200 slings to pre-rig bundles of 30 tires, up to 1,500 tires for later collection by the *Reef Ranger* when the weather permits. The pre-rigged bundles were 30 tires each with a large 1 ¼” shackle holding 4 tire slings together to facilitate efficient picking of the load off the bottom by the *Reef Ranger* and allowed for efficient unloading into the 100 cubic yard trailers using a dedicated PEV certified land crane set up and operated by IDC at Berth 28F.

Trailer No. 276 was loaded with 960 tires (355 from SW238-9B and 605 from SW238-10A), Trailer No. 277 had 900 tires, Trailer No. 278 had 960 tires, Trailer No. 279 had 960 tires, Trailer No. 280 had 930 tires, Trailer No. 281 had 1,020 tires, Trailer No. 282 had 960 tires, Trailer No. 283 had the remaining 205 tires and will be taken once it is full. The weight of the trucks with tires was more than 60,000 lbs. for each trailer load listed whenever possible. The number of tires in each trailer varies based on the sand and crushed shell material found in the recovered tires. We make these adjustments to maintain a legal FDOT highway weight limit of 80,000 lbs.

There was no significant or persistent turbidity observed during the collection, transport and unloading of the tires. IDC has continued to adhere to all the permit requirements for this project while finding innovative ways to improve our safety while increasing our efficiency. The pre-rigging of tires by Nitrox equipped SCUBA diving teams working from our smaller DSVs the *Reef Tender* and the *Reef Keeper* is one way we are significantly increasing overall productivity and efficiency. This technique allows us to continue working in weather conditions that are unsuitable for crane operations offshore. In these less than favorable conditions we are unable to use mechanical lifting capabilities because of the rapid and unpredictable movement caused by wave turbulence and high wind, but we can safely deploy divers to collect and bundle tires on bottom where turbulent surface conditions will not affect them. These bundles are then picked up by the *Reef Ranger* when seas are more favorable for crane operations.

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Task Order #10 A was invoiced on January 15, 2019. The total number of tires collected for SW238 through January 14, 2019 was 137,609. The total tires collected for SW232 and SW238 combined is 232,313 tires.