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ANCHOR QEA

Memorandum

October 6, 2017

To: Gary Miller and Anne Foster, U.S. Environmental Protection Agency

From John Laplante, John Verduin, Wendell Mears, and David Keith

cc Phil Slowiak, International Paper Company
David Moreira, McGinnes Industrial Maintenance Corporation

Re: Post-Harvey TCRA Inspection and Maintenance Report – October 2017

Introduction

This memorandum describes the results of post-Hurricane Harvey inspection and maintenance conducted for the armored cap (Armored Cap), fencing, signage, buoys, and security cameras installed for the Time Critical Removal Action (TCRA) at the San Jacinto River Waste Pits Superfund Site (TCRA Site). It is submitted on behalf of International Paper Company and McGinnes Industrial Maintenance Corporation (Respondents) under an Administrative Settlement Agreement and Order on Consent with the U.S. Environmental Protection Agency (USEPA) – Docket No 06-12-10, effective May 17, 2010 (AOC, USEPA 2010)

The inspections and maintenance took place between September 1 and September 22, 2017. Inspection activities began as soon as flooding in the San Jacinto River associated with Hurricane Harvey subsided to a level that permitted access by boat to the Site, and at a time when the access road into the TCRA Site and most other locations at the Site were still submerged under several feet of water These activities were performed in accordance with the Operations, Monitoring, and Maintenance (OMM) Plan (Appendix N of the Removal Action Completion Report [RACR], Anchor QEA 2012) and a subsequent USEPA-approved amendment to the OMM Plan [1] USEPA staff were present during portions of the inspections, sampling, and maintenance

The survey and probing of the Armored Cap that occurred as part of the inspection, together with related sediment and surface water sampling (the results of which are described below), demonstrate that the Armored Cap, although designed for a 100-year storm, remained intact with only minor and expected movement of rock in localized areas during Hurricane Harvey's 500- to 1,000-year storm event All of the post-storm assessments demonstrate that there was not a release of material to the

[1] The OMM Plan was attached to the Draft Final RACR, submitted to USEPA on November 22, 2011, and authorization to implement the OMM Plan was contained in an email from USEPA dated January 18, 2012 The OMM Plan was also attached as an appendix to the Revised Draft Final RACR submitted to USEPA on March 9, 2012 An addendum to the OMM Plan, dated February 29, 2016, was developed to describe the addition of security cameras, their monitoring, and notifications, and approved by USEPA on March 31, 2016

environment, and the Armored Cap performed well.[2] The recommendations for cap enhancements for the entire northwestern shoreline, as envisioned under Alternative 3aN (the enhanced cap) in USEPA's Feasibility Study for the Site, address the need for enhancements to further stabilize this area to prevent the potential for any future issues.

We note that the conclusions of this report are further supported by Anchor QEA's assessment of United States Army Corps of Engineers (USACE) modeling of the TCRA Armored Cap (Anchor QEA 2017) and letter reports by Michael Palermo, Ph.D (Mike Palermo Consulting 2017), and Doug Shields, Jr, Ph.D. (Shields Engineering 2017), both formerly with USACE, documenting the performance of the TCRA Armored Cap during Hurricane Harvey, all of which were submitted to USEPA on September 28, 2017. The modeling report was submitted under cover of a letter to you dated September 28, 2017, from counsel for Respondent McGinnes Industrial Maintenance Corporation

It is vitally important that information about the post-Hurricane Harvey results and related sampling results be considered by USEPA with respect to USEPA's selection of a final remedy for the Site and be made part of the administrative record for the final remedy. The information described in the following sections and in the related submissions provides real-world evidence regarding the performance of the TCRA Armored Cap during a 500- to 1,000-year storm event and should put to rest any concerns that might exist as to the long-term performance of the enhanced cap that USEPA in its Proposed Remedial Action Plan rejected as a final remedy for the Site.

Background

The TCRA was implemented by Respondents under the AOC A full description of the TCRA implementation is provided in the following associated project documentation.

- Removal Action Work Plan (Anchor QEA 2010, 2011)
- Revised Draft Final RACR[3] (Anchor QEA 2012)

The OMM Plan (Anchor QEA 2012) specifies the timing, pertinent items, tolerances, and procedures for inspection, maintenance, and repair of the Armored Cap, fencing, and signage installed for the TCRA Site (Figure 1).

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[2] Additional sampling that Respondents were asked to and have agreed to perform is, as noted in your email dated September 28, 2017, intended to confirm that no releases occurred

[3] David Keith, Ph D, R G, C H G, Respondents' Project Coordinator, received a RACR (in the form issued by USEPA) from Valmichael Leos via email on August 15, 2012, however, the appendices to the RACR, including the OMM Plan, were not provided to Dr Keith as part of the document The OMM Plan had been previously approved by USEPA (in an email from Mr Leos dated January 18, 2012) and is assumed to remain unchanged Respondents reserve all rights related to the changes made by USEPA to the Revised Draft Final RACR submitted by Respondents to USEPA on March 9, 2012

Inspection Activities

An initial visual inspection took place immediately after the storm on September 1, 2017, and included observation of those portions of the Armored Cap that were above the water line along the south and central berms As the water level continued to drop during the week following the storm, additional visual inspections were completed Post-storm visual inspections included the following:

- Inspection of the condition of the Armored Cap visible above the water line
- Visual confirmation that the Armored Cap was intact and no waste materials were exposed
- Inspection of the condition of the security fence and signage surrounding the TCRA Site
- Inspection of the conditions of the perimeter buoys and security camera system

The visual inspections were performed by staff from Benchmark Ecological Services and Anchor QEA. Photographs of conditions observed during visual inspections were provided to USEPA via email on September 1, 2017. A summary of each facet of the visual inspection is provided in the following sections

Visual Inspection of Armored Cap

Visual inspection of the Armored Cap showed that the Armored Cap was intact. The visual inspections and subsequent probing and sampling demonstrated that there was no indication of any release of material to the environment and that the Armored Cap performed well

The visual inspections identified several small locations requiring maintenance. Those locations, most of them located in areas outside the footprint of the waste within the impoundments, were as follows:

- Portions of the south berm crest in an area outside the footprint of the waste within the impoundments. There was displacement of the recycled concrete armor rock B/C in this location On the west portion of the south berm crest, the underlying fabric was displaced, but the immediately adjacent three-layer geomembrane/geotextile cap in the Western Cell was intact and undisturbed, and there was no evidence that any waste had been exposed This entire area is located outside of the footprint of the waste within the impoundments.
- Portions of the central berm crest, located outside the footprint of the waste within the impoundments There were discrete locations in which recycled concrete armor rock B/C had been displaced. The underlying fabric was present and intact along the central berm crest, and there was no evidence that any waste had been exposed. This entire area was outside of the footprint of the waste within the impoundments
- Portions of the northern edge of the Western Cell In inspections conducted after the water had receded, there was visible geotextile at the water line in these locations

The estimated area identified as requiring maintenance during the visual inspection was approximately 0 15 acre, or less than 1 percent of the overall cap surface area, with most of the locations being in areas located outside the footprint of the waste within the impoundments

Photographs of the Armored Cap from the visual inspection events were provided to USEPA on September 1, 2017. The majority of the Eastern Cell Armored Cap was underwater at the time of the visual inspection events; however, as described below, these areas were surveyed and probed in accordance with the OMM Plan (Anchor QEA 2012).

Visual Inspection of Perimeter Fencing

The perimeter fencing (Figure 2) on the west and east banks of the San Jacinto River was visually inspected for damage during the week of September 4, 2017 The entire fence line on the western side of the river was observed to have been damaged by high flows from Hurricane Harvey. There was no visible damage evident during a drive-by viewing of the fencing on the eastern side of the river

The portion of the fence installed along the south boundary of the San Jacinto River Fleet (SJRF) property was not included in the formal fencing inspection because the SJRF property is currently occupied by an active facility that conducts daily security checks, as required by the U.S Coast Guard and Transportation Security Administration for an active maritime fleeting area The fencing around this facility appeared to be intact during drive-by viewing.

Visual Inspection of Signage

The "Danger" and "No Trespassing" signs posted at regular intervals on the perimeter fencing surrounding the TCRA Site were damaged by the storm and will require replacement.

Three USEPA Public Notice signs in locations around the TCRA Site were observed to be damaged by the storm and will require replacement The three signs are located as follows: 1) near the gate entry point for the perimeter fence north of Interstate 10 (I-10); 2) near a gate entry point south of I-10; and 3) at the end of the Texas Department of Transportation (TXDOT) right-of-way north of I-10 near the San Jacinto River

As part of the TCRA, a total of 15 signs were installed around the perimeter of the land portion of the TCRA Site, the signs were mounted on steel posts and set in concrete pads These signs are intended to face the San Jacinto River to deter water-based entry to the TCRA Site All 15 signs were damaged or displaced by Hurricane Harvey and will require replacement.

Signage on the two vehicle access gates remind entrants to "daisy chain" the lock properly prior to leaving the TCRA Site. These signs were observed to be in place, however, they will need to be reinstalled after fence maintenance has been completed.

Visual Inspection of Perimeter Buoys

Permanent warning buoys were installed around the perimeter of the Armored Cap, as outlined in the letter from the Respondents' Project Coordinator dated February 16, 2016 (Anchor QEA 2016a). The buoy system was inspected during the week of September 4, 2017 The perimeter buoy system was displaced as a result of Hurricane Harvey and will require replacement

Visual Inspection of Security Cameras

Security cameras, installed as outlined in an addendum to the OMM Plan (Anchor QEA 2016b), were also inspected during the week of September 4, 2017. The security camera system was damaged and rendered inoperable as a result of Hurricane Harvey and requires replacement.

Survey of Armored Cap

The survey began on September 6, 2017, and was completed on September 7, 2017. Results of the survey, when compared with the prior survey completed in July 2017, did not identify any significant changes to the surface of the Armored Cap beyond those previously identified during the visual inspections

The surveyor followed the track line spacing measurement intervals and accuracy requirements detailed in the OMM Plan (Anchor QEA 2012) for all survey work. Portions of the Armored Cap above the water surface or at a water depth too shallow to access by boat were surveyed using land-based topographic survey techniques

Survey Results

The survey data from the July 2017 inspection survey and the post-Hurricane Harvey inspection survey were compared to evaluate whether there had been changes in the elevation of the top of the Armored Cap. Locations in which there were differences are shaded and shown in Figure 2. The survey comparison indicates deposition and erosion of alluvial river sediment on the surface of the cap as a result of Hurricane Harvey The survey also showed that erosion occurred within the San Jacinto River Channel adjacent to the Armored Cap

Supplemental probing was conducted in conjunction with the survey to further investigate the condition of the Armored Cap, as described below

Probing Inspection of Armored Cap

The OMM Plan (Anchor QEA 2012) calls for manual probing of Armored Cap thickness following a significant flooding event At the request of USEPA, probing was completed over the entire surface of the Armored Cap in more than 900 locations between September 7 and September 14, 2017

Probing was conducted on the same grid that was used to confirm cap thickness during construction of the Armored Cap Grid points were loaded into a GPS, and each location was probed by the team, either from a boat or while walking depending on water depth and access. In the northwest area, a tighter probe grid spacing was used at the request of USEPA staff, who were present for the inspection activities.

The probing observations included evaluating both the presence and thickness of aggregate cap material. The steel probe was advanced below the aggregate cap material surface until the base of aggregate cap material was reached, or "refusal" occurred on dense aggregate or geotextile If the required armor cap aggregate thickness could not be confirmed at a particular location, the probe was redeployed around that location until the required thickness could be confirmed, and the location and limits were recorded as an Area of Interest (AOI). Figure 2 presents the results of the probing.

On September 11 and September 13, 2017, a USEPA dive team also conducted supplemental probing in the underwater portion of the northwestern area. Probing was conducted from a boat in the locations assessed by the USEPA dive team The Respondents' field crew conducted additional probing to confirm the USEPA dive team probing results

Probing Results

Several potential AOIs were identified (Figure 2) during the probing Descriptions of each of these areas are provided in Table 1. The combined surface area of the AOIs listed in Table 1 is approximately 195 square feet, or less than 0.03 percent of the surface area of the Armored Cap There was no evidence of a release from any of these areas.

Sampling

At the request of USEPA, initial sampling was conducted of the Armored Cap surface over three different events during the inspection and maintenance work. Additional sampling was conducted during the week of October 2 at the request of USEPA This section summarizes the initial three sampling events and the results of that sampling. Detailed results of sampling conducted during the week of October 2 will be presented separately. All sampling events and final results will be detailed in a separate sampling and analysis report.

September 7 Sampling

At the request of USEPA, one five-point sediment surface composite and 2 surface water samples were collected at locations that were determined by USEPA Samples were collected on September 7 and submitted to the laboratory on September 8, 2017. Preliminary results of this sampling, which indicated sediment concentrations below background levels and surface water concentrations in the

range that has been observed previously, were submitted via email to USEPA on September 15, 2017 Final validated results were submitted to USEPA on September 27, 2017 (Appendix A).

September 11 Sampling

At the request of USEPA, the Respondents' representatives collected one discreet and one 5-part composite sample from the surface of the Western Cell on September 11, 2017 The results of this sampling, which indicated concentrations at background levels, were submitted via email to USEPA on September 18, 2017. Final validated results were submitted to USEPA on September 27, 2017 (Appendix A).

September 15 Sampling

A USEPA dive team conducted sediment sampling in submerged areas of the Armored Cap on September 15, 2018. Divers for the Respondents collected duplicate samples from the same locations at the same time. Samples were collected from 14 distinct locations. Preliminary results were submitted via email to USEPA on September 28, 2017, and final validated results were submitted on October 3, 2017 (Appendix A).

Of the 28 samples collected during the September 15 event, 26 are in the normal range of dioxin and furan toxic equivalent quotient observed in river sediments surrounding the Armored Cap, and two are higher than the normal range These two samples are duplicates from the same location The area where the higher concentration samples were taken was identified as an AOI during the probing inspection. The specific sample location is described as 2 to 4 inches of aggregate cap material, and two 1-foot by 1-foot areas of river sediment on the surface representing 0.00016 percent of the total Armored Cap surface.

Per USEPA approval, additional cap materials were placed at this location as part of the cap maintenance activities the week of September 17, 2017.

At USEPA request, additional sediment sampling around this location is being conducted

Inspection Summary

The inspections and sampling conducted following Hurricane Harvey demonstrate that there was not a release of material to the environment, and the Armored Cap performed well, with minor movement of cap aggregate. The Armored Cap required maintenance in only a few locations, most located in portions of the cap outside the footprint of the waste, with a combined surface area of approximately 0.15 acre, or less than 1 percent of the total surface area of the Armored Cap

For the AOIs (Table 1), a proposed maintenance plan was submitted to USEPA on September 15, 2017, and approved on the same date.

Maintenance Activities

This section describes post-Hurricane Harvey maintenance activities. These maintenance activities began as soon as river levels subsided to allow access into the Site through the TXDOT right-of-way on September 4, 2017, and continued through the completion of Armored Cap maintenance on September 21, 2017 Maintenance was conducted on the Armored Cap, the perimeter fence, signs, perimeter buoys, and security cameras Some maintenance will be completed after replacement signs, fencing, and buoys are available. Future maintenance, including completion of perimeter fence repairs and reinstallation of signs, perimeter buoys, and security cameras, will be documented in a separate memorandum to USEPA after those activities are completed. Maintenance activities were documented in daily reports that were transmitted to USEPA. These reports are provided as Appendix B to this memorandum.

Maintenance of Armored Cap

Maintenance of the berms began on September 4 and was completed on September 8, 2017 Maintenance in the area of the shoreline along the northern edge of the Western Cell was completed on September 9 and 10, 2017 Maintenance in these areas consisted of installing new geotextile in areas where the presence of geotextile was not confirmed, and overlaying visible and newly placed geotextile with armor rock size D, which was shipped to the TCRA Site from the Marble Falls quarry and from the stockpile at the Bluebonnet Landfill Rock was placed using a skid steer and a hydraulic excavator. When working along the northern edge of the Western Cell, equipment was staged on crane mats to distribute the load and minimize any disturbance of the cap surface

Maintenance of submerged areas of the Armored Cap (the AOIs) began on September 16, 2017, immediately following approval of the work plan (Appendix C) on September 15, 2017. Maintenance of the AOIs was completed on September 21, 2017. Armor rock size C and D from the temporary on-site stockpiles was loaded onto a small pontoon barge by a hydraulic excavator. A pontoon barge was mobilized to provide access to each AOI, shown in Figure 2, after which rock was placed until the placement of the specified thickness was confirmed through probing, using the methods identified in the approved work plan (Appendix C).

Maintenance of Perimeter Fence

Maintenance to repair the damaged perimeter fencing began during the week of September 4, 2017. Temporary fence panels were installed along the TXDOT right-of-way between the access road and the I-10 bridge on the north side of I-10. Temporary repairs were also made to the access gate. Permanent repairs to the access gate and to the fence line along the south side of the I-10 bridge are planned for October 2017 once crews are available.

Maintenance of Signage

All damaged signs were ordered on September 12, 2017; they will be reinstalled as the signs become available and the fencing is replaced The sign mounts located on top of the Armored Cap are ready for new signs as soon as the replacement signs become available

Maintenance of Perimeter Buoys

The maintenance activities to replace the buoy system were initiated during the week of September 4, 2017. Approximately 105 of the barrier buoys were recovered, all of which were reusable. Temporary barrier buoys were installed on September 9, 2017. Three of the regulatory buoys were recovered but were not reusable due to damage

Seventy-five barrier buoys and six regulatory buoys were ordered and are scheduled to be delivered to the contractor in early October, after which they will be reinstalled at the Site.

Maintenance of Security Cameras

The security camera contractor visited the Site several times during the week of September 4, 2017, to document the condition of the camera system and to remove damaged equipment Orders to replace the security cameras were placed during the week of September 4, 2017 The system will be replaced as soon as the new equipment becomes available.

Maintenance Summary

Maintenance of the south and central berms began on September 4, 2017, and was completed on September 8, 2017. Additional maintenance was completed along the northern edge of the Western Cell on September 9 and 10, 2017, to address areas of visible geotextile that were identified during the week of September 4, 2017. All maintenance was approved by USEPA and was completed by the Respondents under the observation of USEPA, simultaneous to the survey and probing activities

Maintenance of the AOIs listed in Table 1 commenced on September 16, 2017, and was completed on September 21, 2017. This maintenance was completed in accordance with the work plan submitted to USEPA on September 15, 2017, and approved on the same date (Appendix C).

Future maintenance will include replacing fencing, signs, buoys, and security cameras as replacement items are delivered. All future maintenance activities will be documented in a subsequent maintenance completion report

Table 1
Potential Maintenance Areas and Descriptions

AOI No.	Size	Description	NAD83 TXSP 4204	
			Y	X
1	1x1	4-5 in of aggregate cap material present	13857836 42	3216858.53
2	2x2	4 in of aggregate cap material present	13857816.87	3216893 38
3	1x2	1 ft river sediment with aggregate cap material present	13857829 55	3216921 19
4	1x2	1 ft river sediment with aggregate cap material present	13857826 81	3216927 32
5	2x3	8-10 in of aggregate cap material present	13857770 30	3216931 72
6	3x3	Geotextile present	13857797.54	3217005 56
7	1x1	4-5 in of aggregate cap material over rock refusal	13857738 13	3216986 96
8	2x2	Geotextile present	13857658 68	3217301 31
9	2x4	Aggregate cap material present	13857629 21	3217221.64
10	2x2	Aggregate cap material present	13857629 25	3217228 93
11	2x3	Aggregate cap material present, geotextile visible on surface	13857592 85	3217293.47
12	1x1	3-4 ft of river sediment with aggregate cap material present - geotextile refusal	13857593 25	3217296 19
13	d2x2	Geotextile present	13857613 50	3217401 89
14	1x1	Geotextile present	13857543 07	3217334 02
15	2x2	2x2 ft area of interest	13857551 41	3217530 31
16	5x10	Geotextile present; underlying aggregate cap material	13857376 40	3217165 49
17	1x1	6 in of aggregate cap material	13857361 91	3217181 71
18	2x3	Geotextile present	13857375 40	3217373 20
19	2x4	Aggregate cap material on surface	13857355 42	3217387.55
20	1x1	3-4 in of aggregate cap material	13857288 63	3217273.26
21	1x1	Geotextile present, aggregate cap material underneath	13857171.23	3217321 04
22	1x1	Geotextile present	13857168 11	3217325.56
23	1x2	8-10 in of aggregate cap material	13857814 10	3216836.60
24	1x1	4-6 in of aggregate cap material	13857872 36	3216854 70
25	1x3	Thin layer of aggregate cap material on surface	13857865.67	3216856 56
26	2x3	4-6 in of aggregate cap material	13857836.75	3216856 67
27	1x2	6-8 in of aggregate cap material	13857827 11	3216844.25
28	3x4	2-6 in of aggregate cap material	13857885 40	3216894 73
29	3x3	4-6 in of aggregate cap material	13857868 30	3216865 89
30	1x1	Thin layer of aggregate cap material on surface	13857864 18	3216856.87
31	1x2	6-8 in of aggregate cap material and 1x1 ft area of thin aggregate cap material layer on surface	13857865 00	3216867 53
32	1x2	4-6 in of aggregate cap material	13857868 22	3216874 87
33	3x3	River sediment on surface and 2-4 in aggregate cap material	13857878 34	3216903 57

AOI No.	Size	Description	NAD83 TXSP 4204	
			Y	X
34	1x2	4-6 in of aggregate cap material	13857849 21	3216862 83
35	2x3	4-6 in of aggregate cap material	13857840 59	3216858 74
36	3x3	2-4 in of aggregate cap material and two 1x1 ft. areas of river sediment on surface	13857826 24	3216922 01
37	N/A	N/A	13857866.40	3216913 37
38	N/A	N/A	13857863 84	3216918 20

Notes
AOI area of interest
ft feet
in inch
N/A not available

Figures

Figure 1 Vicinity Map
Figure 2 Post-Harvey Bathymetric Survey and Probing Inspection Results

List of Appendices

Appendix A Email Record of Data Submittals to USEPA
Appendix B Maintenance Daily Reports
Appendix C Work Plan for Maintenance

References

Anchor QEA (Anchor QEA, LLC), 2010 *Removal Action Work Plan, San Jacinto River Waste Pits Superfund Site* Prepared for U S. Environmental Protection Agency (USEPA) Region 6 on behalf of McGinnes Industrial Maintenance Corporation (MIMC) and International Paper Company (IPC) November 2010.

Anchor QEA, 2011 *Removal Action Work Plan, San Jacinto River Waste Pits Superfund Site* Prepared for U S Environmental Protection Agency (USEPA) Region 6 on behalf of MIMC and IPC Revised February 2011.

Anchor QEA, 2012. *Revised Draft Final Removal Action Completion Report, San Jacinto River Waste Pits Superfund Site* Prepared for MIMC, IPC, and USEPA Region 6 Revised March 2012

Anchor QEA, 2015 Draft Amendment 1, Operations, Monitoring and Maintenance Plan, San Jacinto River Waste Pits Time Critical Removal Action Memorandum to Gary Miller, USEPA, from David Keith, Anchor QEA, LLC December 3, 2015

Anchor QEA, 2016a Letter from D Keith to G. Miller, USEPA, regarding Site Buoy Enhancement for San Jacinto River Waste Pits Superfund Site. February 16, 2016.

Anchor QEA, 2016b. Addendum 2, Operations, Monitoring, and Maintenance Plan, San Jacinto River Waste Pits Time Critical Removal Action (Proposed Camera Security System Memorandum). February 29, 2016

Anchor QEA, 2017. Memorandum to: Gary Miller, U S. Environmental Protection Agency. Regarding San Jacinto Superfund Site – Hypothetical Synoptic Event Simulation for the Existing Cap and the Enhanced Cap Alternative San Jacinto River Waste Pits Superfund Site. September 28, 2017.

Mike Palermo Consulting (Mike Palermo Consulting, Inc), 2017 *Supplemental Comments on U.S. Environmental Protection Agency Region 6 Proposed Remedial Action Plan for the San Jacinto Waste Pits Superfund Site* Prepared by Michael R Palermo, Ph.D Cary, NC. October 2017

Shields Engineering (Shields Engineering, LLC), 2017 *A Supplemental Report Issued Following Hurricane Harvey Examination of Selected Assertions by U S. EPA in the Proposed Remedial Action Plan for the San Jacinto River Waste Pits Superfund Site.* Prepared by Doug Shields, Jr., Ph D. University, MS October 2017

USEPA (U.S. Environmental Protection Agency), 2010. *Administrative Settlement Agreement and Order on Consent for Removal Action.* U S Environmental Protection Agency Region 6 CERCLA Docket No. 06-03-10. In the matter of: San Jacinto River Waste Pits Superfund Site Pasadena, Harris County, Texas IPC & MIMC, Respondents.

Figures

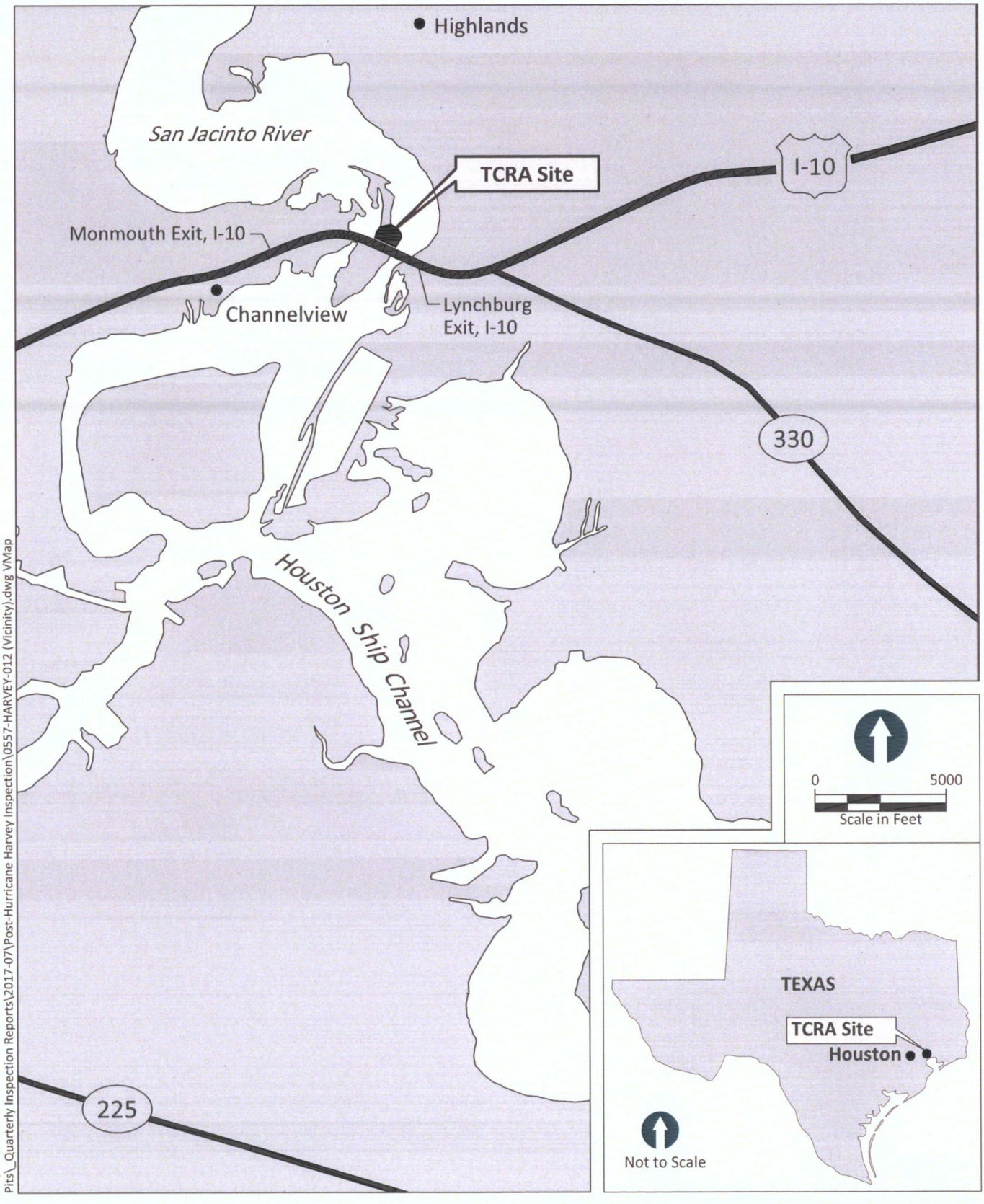

Figure 1
Vicinity Map
Post-Harvey Inspection (September 2017)
San Jacinto River Waste Pits Superfund Site

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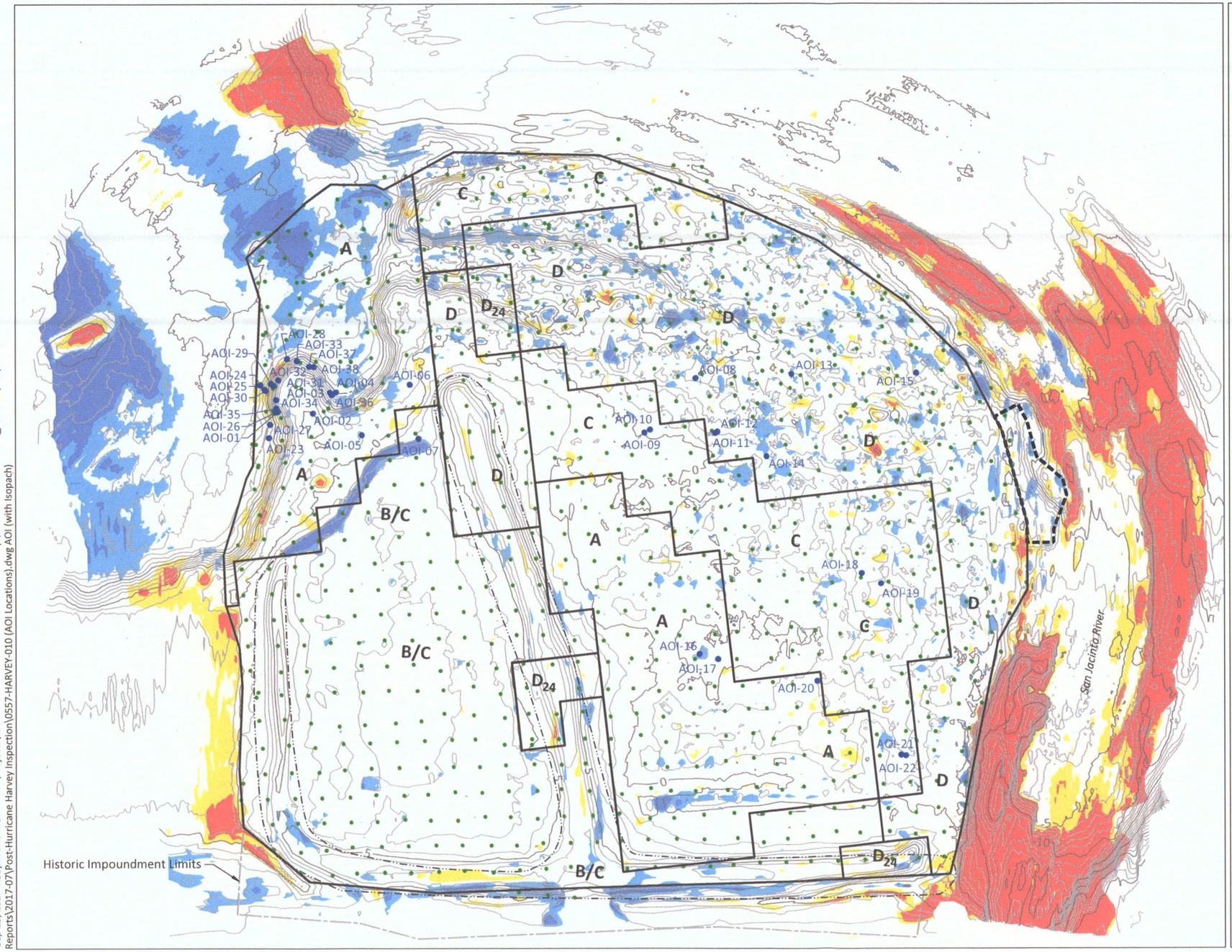

LEGEND:

- September 2017 Post-Hurricane Harvey Inspection Bathymetric and Topographic Contours (1 Foot Interval)
- B/C — Armored Cap Type and Boundary
- Historic Impoundment Limits
- Limits of January 2016 Work Plan
- Approximate Location of Western, Southern, and Central Berms
- Cap Thickness Confirmed - Current Study
- AOI-22 • Area of Interest (AOI)
- > 1.0 Foot Increase
- 0.5 Foot Increase to 1.0 Foot Increase
- 0.5 Foot Increase to 0.5 Foot Decrease
- 0.5 Foot Decrease to 1.0 Foot Decrease
- > 1.0 Foot Decrease

SOURCE: Drawing prepared from surveys provided by Hydrographic Consultants dated July 2017 and September 2017.
HORIZONTAL DATUM: Texas State Plane South Central, NAD83, U.S. Feet.
VERTICAL DATUM: NAVD 88.

0 120
Scale in Feet

Sep 25, 2017 4:59pm dholmer K:\Projects\0557-McGinnes Industrial Maintenance Corp\San Jacinto Waste Pits_Quarterly Inspection Reports\2017-07\Post-Hurricane Harvey Inspection\0557-HARVEY-010 (AOI Locations).dwg AOI (with Isopach)

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Figure 2
Post-Harvey Bathymetric Survey and Probing Inspection Results
Post-Harvey Inspection (September 2017)
San Jacinto River Waste Pits Superfund Site

Appendix A
Email Record of Data Submittals to USEPA

From: David Keith
To: Gary Miller (miller.garyg@epa.gov)
Cc: Craig Hutchings (chutchings@integral-corp.com), Phil Slowiak, Dave Moreira
Subject: FW San Jacinto Waste Pits 1613 Results
Date: Friday, September 15, 2017 4 53 53 PM
Attachments: image001.jpg
image002.png
image003.png
image004.png
image005.png
image006.png
image007.jpg
Attachments.html

Gary – We have the ***preliminary results*** of the sediment and surface water sampling that was directed by EPA last Friday September 8, 2017. The results are very good with the composite sediment sample being around 1 ng/Kg, which is well below background, and surface water concentrations are in the range of what we observed in 2016, which indicates concentrations are similar to pre-storm concentrations. Integral will work on the data validation.

The data package is 89 MB so you will need to use the link below to download it. Please contact Craig Hutchings at Integral if you have any difficulty downloading the document. He is copied on this email.

Thanks,
David

From: Craig Hutchings [mailto chutchings@integral-corp.com]
Sent: Friday, September 15, 2017 6 34 PM
To: David Keith <dkeith@anchorqea com>
Cc: Jennifer Sampson <jsampson@integral-corp com>
Subject: RE San Jacinto Waste Pits 1613 Results

Hi David,
I just received the data package from ALS, it's 89 MB so use the link below to download.

Craig

ShareFile Attachments Expires March 14, 2018

E1700939-final pdf 89 4 MB

Download Attachments

Craig Hutchings uses ShareFile to share documents securely Learn More

From: David Keith
To: Gary Miller (miller.garyg@epa.gov)
Cc: Phil Slowiak, Dave Moreira, Judy Armour (jarmour@wm.com)
Subject: FW E1700943 Data Package -San Jacinto
Date: Monday, September 18, 2017 4.20.54 PM
Attachments: Attachments.html

Gary – Please see the message below and instructions to download these analytical results These are the two samples that you directed us to collect on September 11, based on a community members' concern about a dark spot in the western cell When I observed it, the material appeared to be river sand with some algae that had grown on the surface and died – the black color was the dead algae TEQs for the samples were 3 69 ng/kg, and 6 02 ng/kg These results are well within background.

Thanks,
David

From: Craig Hutchings [mailto chutchings@integral-corp com]
Sent: Monday, September 18, 2017 4:37 PM
To: David Keith <dkeith@anchorqea com>
Cc: Jennifer Sampson <jsampson@integral-corp com>
Subject: E1700943 Data Package

Hi David,
Here is a link to the final data package for E1700943, the sediments collected on 9/11/2017

Craig

ShareFile Attachments — Expires March 17, 2018

E1700943 - Final pdf — 81 1 MB

Download Attachments

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HEALTH ENVIRONMENT TECHNOLOGY SUSTAINABILITY

From: David Keith
To: Gary Miller (miller.garyg@epa.gov)
Cc: Dave Moreira; Phil Slowiak, Judy Armour (jarmour@wm.com), John Laplante
Subject: San Jacinto Validated Data
Date: Wednesday, September 27, 2017 2 55:36 PM
Attachments: 22130-26 Integral SJWP Rush Dioxins DV Report.pdf

---

Gary – Please see the attached data validation report for the sediments and waters collected 9/7/2017 and 9/11/2017

Thanks,
David

David Keith
Anchor QEA, LLC

Phone: 228-220-1156
Cell: 228-224-2983
dkeith@anchorqea.com

ANCHOR QEA, LLC
www.anchorqea.com
Please consider the environment before printing this email

From: David Keith
To: Gary Miller (miller.garyg@epa.gov)
Cc: Phil Slowiak, Judy Armour (jarmour@wm.com)
Subject: San Jacinto Dive Team Data Validation Report
Date: Tuesday, October 3, 2017 10 33 53 AM
Attachments: 22130-26 Integral SJWP Additional Rush Dioxins DV Report.pdf

---

Gary – Please see the attached data validation report for the sample results from the EPA and Orion dive team efforts

Thank you,
David

David Keith
Anchor QEA, LLC

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Cell: 228-224-2983
dkeith@anchorqea.com

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Appendix B
Maintenance Daily Reports

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP	**SUPERINTENDENT**	Mike Wells (USA)
DAY OF WEEK & DATE:	Monday, September 4, 2017	**REPORT NO.**	1
WEATHER	Sunny; winds out of E and SE.	**TEMPERATURE**	L: 72 H: 91 degrees F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
4 – USA Environment LP (USA)	Skid Steer
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 **Height:** 2.00 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0730 – Anchor QEA (AQ) and USA on site, begin site assessment and maintenance scoping.

0830 – USA unloading equipment and materials

0900 – USA holds tailgate safety briefing.

0915 – Continue assessment and developing maintenance scope of work.
- USA construction group makes temporary repairs to secure the main gate and fencing
- Begin preparing laydown and stockpile areas.
- Gary Miller (EPA) arrives on site for safety briefing and to discuss conceptual maintenance plan, maintenance schedule and media visit to the site later in the day

1025 – USA investigates electrical wires on site. AQ and EPA observesouth fence lines. EPA leaves site to prepare for afternoon site visit with media, EPA regional and national staff.

1045 – USA and AQ return to south impoundments to complete shoreline observation.

1135 – USA and AQ leave site for lunch and inspect rock stockpile volumes for the planned activities.

1330 – USA, AQ return to site for EPA, TCEQ and news media site visit

1500 – Media site visit completed. USA construction crew completes laydown and stockpile area preparations. Equipment is scheduled for Tuesday delivery. Electrician scheduled to secure potential electrical hazards. Trucks are scheduled for rock movement from the offsite storage area to the site. EPA departs site.

1530 – Complete planning on Tuesday activities Gate secured, USA and AQ offsite. All personnel offsite.

ANCHOR QEA

DAILY REPORT

Summary of Progress on this Date:

- Completed west bank north and south fence inspections.
- Prepared laydown and stockpile areas.
- Ordered equipment, trucks and personnel for Tuesday work.
- Scheduled electrician, fence and buoy subcontractor site visits for Tuesday.
- Planned and scheduled probing to begin on Wednesday.

Persons Onsite on this Date:

Wendell Mears and David Keith (AQ)
Ed Fendley, Mike Wells and 2 equipment operators (USA)
Gary Miller (EPA)
EPA, TCEQ and media visitors (see Photo 5 for sign in sheet)

Material Delivery Summary as of this Date: None.

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	0	Truck Measure		

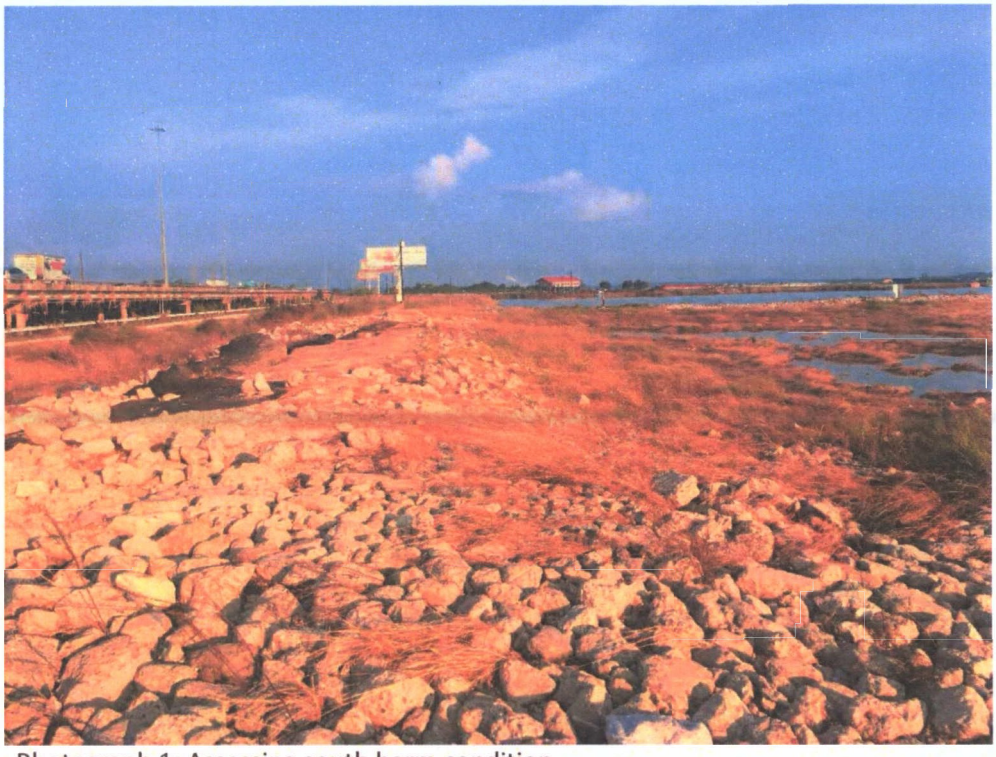
TESTS PERFORMED:	None

PHONE LOG:

Billy Johnston, Dosckocil called to discuss replacing barrier buoys
John Burns, National Fence Co, called regarding debris removal on south fence line

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
5 shown, 96 taken	None

QA REPRESENTATIVE	Wendell Mears	HRS	8	DATE	9/4/2017



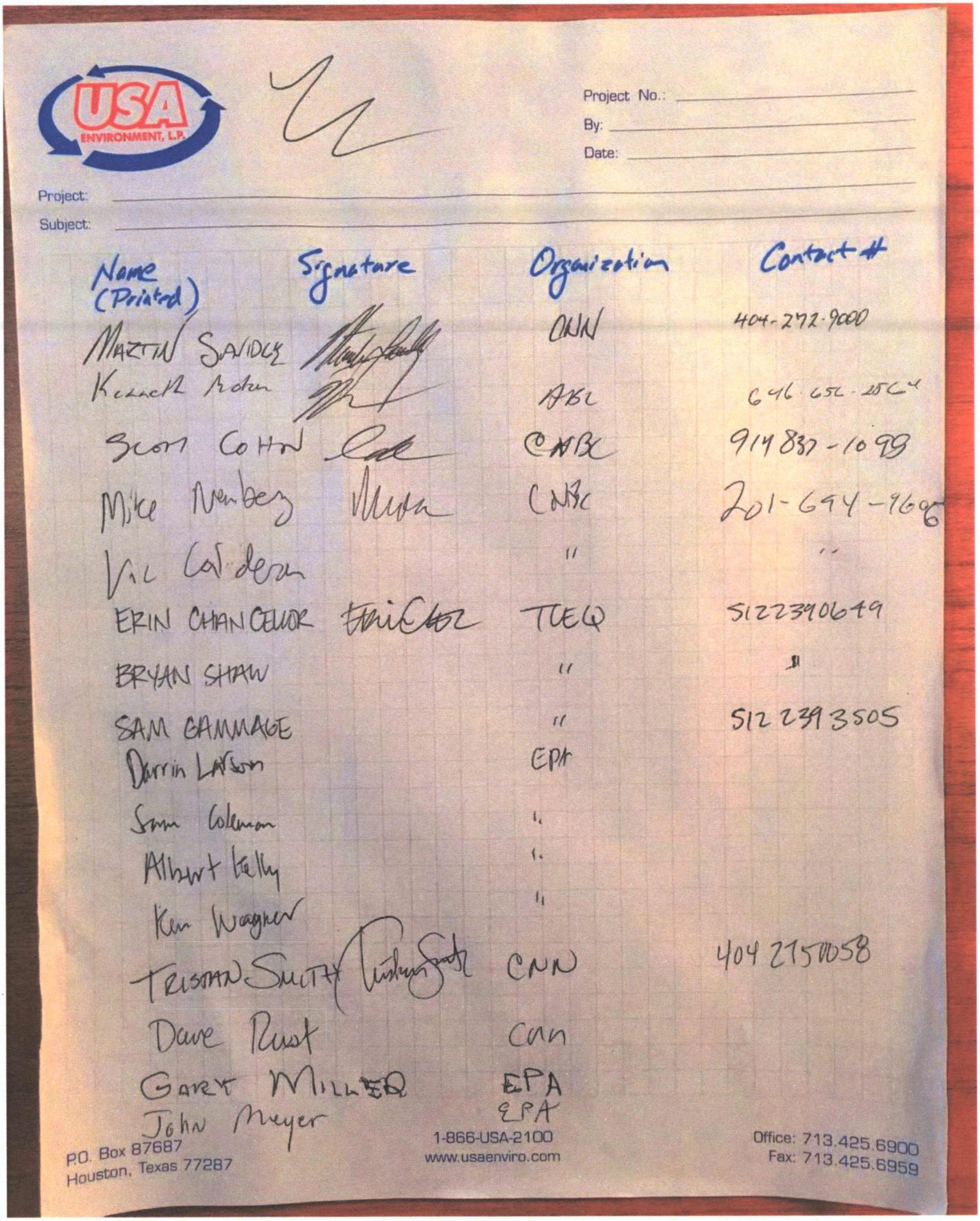
Photograph 1: Assessing south berm condition.

Photograph 2: Assessing central berm condition.

Photograph 3: Evaluating northwest shoreline condition

Photo 4: Evaluating south fence condition

DAILY REPORT



USA ENVIRONMENT, L.P.

Project No.:

By:

Date:

Project:

Subject:

Name (Printed)	Signature	Organization	Contact #
MARTIN SAVIDGE	[signature]	CNN	404-272-9000
Kenneth Moton	[signature]	ABC	646-652-2564
Scott Cohn	[signature]	CNBC	914 837-1099
Mike Newberg	[signature]	CNBC	201-694-9606
Vic Calderon		"	"
ERIN CHANCELLOR	[signature]	TCEQ	5122390649
BRYAN SHAW		"	"
SAM GAMMAGE		"	512 239 3505
Darrin Larson		EPA	
Sam Coleman		"	
Albert Kelly		"	
Ken Wagner		"	
TRISTAN SMITH	[signature]	CNN	404 2750058
Dave Rust		CNN	
GARY MILLER		EPA	
John Meyer		EPA	

P.O. Box 87687
Houston, Texas 77287

1-866-USA-2100
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Photo 5: Visitor Log to Site

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP	**SUPERINTENDENT**	Mike Wells (USA)
DAY OF WEEK & DATE:	Tuesday, September 5, 2017	**REPORT NO.**	2
WEATHER	Sunny; winds out of E and SE.	**TEMPERATURE**	L: 74 H: 88 degrees F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
7 – USA Environment LP (USA); 2 at Bluebonnet; 5 at Site	Skid Steer; Excavator, Dump Trucks (10-12 cy), Loader at Bluebonnet stockpile area
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 & 1600 **Height:** 2.0 & 1.8NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – USA on site, tailgate meeting and continue preparations to receive rock and equipment. Electrician on site to check downed electrical lines. Power poles are locked and tagged out, all power crossing the access road is cut. Power lines pulled down for equipment passage.

0830 – Anchor QEA (AQ) and Doskocil on site to locate buoys and discuss redeployment.

0930 – Doskocil leaves site to prepare truck and trailer to retrieve buoys from under the bridge and prepare to precast more weights. USA continues to prepare site and stockpile area

1015 – Larger skid steer and hydraulic excavator arrive on site.
- Gary Miller (EPA) arrives on site for safety briefing and to review progress
- USA establishises gate security to receive materials

1200 to 1230 – first two loads of rock arrive at the site from Bluebonnet stockpile area. USA develops stockpile areas.

1230 to 1430 – Exxon Mobil pipeline representative on site to assure no digging ongoing within 25 feet of their pipelines. W. Mears files dial dig plan between 1430 and 1530. USA continues to receive rock and place stabilized sand (includes Portland cement) to restore south berm template. Phil Slowiak (IP) arrives on site.

1530 – USA completes installing stabilized sand on south berm and preparing for next day's work. Installs geotextile over stabilized sand.

1630 – Complete planning for Wednesday activities. Gate secured, USA and AQ offsite. All personnel offsite.

Summary of Progress on this Date:
- Cut power panel and locked out; removed overhead power cable.
- Located buoys under bridge and developed removal schedule with Doskocil
- Received hydraulic excavator and larger skid steer
- Continued detailed site assessment
- Continued south berm maintenance and installed geotextile.

ANCHOR QEA

DAILY REPORT

- Received approximately 65 cubic yards (100 tons) of rock from the stockpile.
- Planned and had kickoff call with Benchmark for probing to begin on Wednesday.
-

Persons Onsite on this Date:
Wendell Mears, John Laplante and David Keith (AQ)
Phil Slowiak (IP)
Mike Wells, 3 equipment operators and 2 laborers (USA)
Gary Miller (EPA)
Billy Johnston, Doskocil – buoy contractor
Waste Management Security – two technicians

Material Delivery Summary as of this Date: None.

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	100	Truck Measure	0	100

TESTS PERFORMED:	None

PHONE LOG:
John Burns, National Fence Co, called to reschedule for Wednesday site review.

SITE PHOTOS/VIDEOS TAKEN:	FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:
5 shown, 96 taken	None

QA REPRESENTATIVE	Wendell Mears	HRS	10	DATE	9/5/2017

Photograph 1: Receive first loads of rock from Bluebonnet stockpile.

Photograph 2: Stabilized fill installed prior to covering with geotextile.

Photograph 3: Close up view of stabilized sand fill

Photo 4: Continued site assessment through the day

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Cap maintenance Hydrographic Consultants (HC) – Cap survey Benchmark Ecological Services (BESI) – Cap probing and inspection Doskocil – Buoy retreival	**SUPERINTENDENT**	Mike Wells (USA)
DAY OF WEEK & DATE:	Wednesday, September 6, 2017	**REPORT NO.**	3
WEATHER	Sunny; winds out of N.	**TEMPERATURE**	L: 75 H: 90 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
5 – USA 4 – HC 2 – BESI 1 - Doskocil	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator 3 @ 12-cy dump trucks
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 **Height:** 2.00 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0800 – USA and AQ representatives on site

0900 – National Fence, BESI, Doskocil and HC on site and begin work

0930 – USEPA on site

0945 – Doskocil departing with buoys retrieved from beneath I-10 bridge

1000 – Second round (3 trucks) arrive to deliver rock from Bluebonnet stockpile; HC surveying west cell (topo) and east cell (hydro); BESI and AQ probing northwest area

1035 – USA continued maintenance of south berm

1125 – USA finishing placing rock at crest of south berm in west cell

1130 – Third round (3 trucks) arrive with rock from Bluebonnet; round trip cycle time approximately 90 minutes

1130 to 1200 – AQ inspects south fence line with International Paper (Phil Slowiak)

1430 – AQ discussion with USA; 4 rounds of trucks so far today; each truck capacity 11 to 12 cy of rock

1445 – USA continuing to dress the south slope of the south berm; fifth round (3 trucks) arrive with rock from Bluebonnet. One more delivery planned for today and additional hauling tomorrow

1600 – Upland survey crew departs site; USA continues to dress southern berm

ANCHOR QEA

DAILY REPORT

1630 – Cap probing crew departs site

1640 – Sixth and final round of 3 trucks arrives with rock from Bluebonnet; 18 total loads delivered today

1700 – USEPA departs site; AQ departs site; USA departs site

Summary of Progress on this Date:

- Began hydrographic and topographic survey
- Began cap probing inspection
- Retrieved buoys from beneath I-10 bridge
- Met with National Fence to discuss fence repairs
- Scheduled meeting with TXDOT to discuss fence repairs
- Continued maintenance of berms, placing geotextile and rock
- 18 loads of rock received from Bluebonnet stockpile, approximately 300 tons

Additional Persons Onsite on this Date:
Wendell Mears, Rick Coupe, John Laplante and David Keith (AQ)
Gary Miller and Scott (dive team) (USEPA)
RL Doskocil crew retrieving buoys
National Fence inspecting fence lines

Material Delivery Summary as of this Date: None.

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	300	Truck Measure	100	400

TESTS PERFORMED:	None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	John Laplante	HRS	8	DATE	9/6/2017

Photo 1 – south berm crest maintenance

Photo 2 – dressing south slope of south berm

Photo 3 – rock delivery

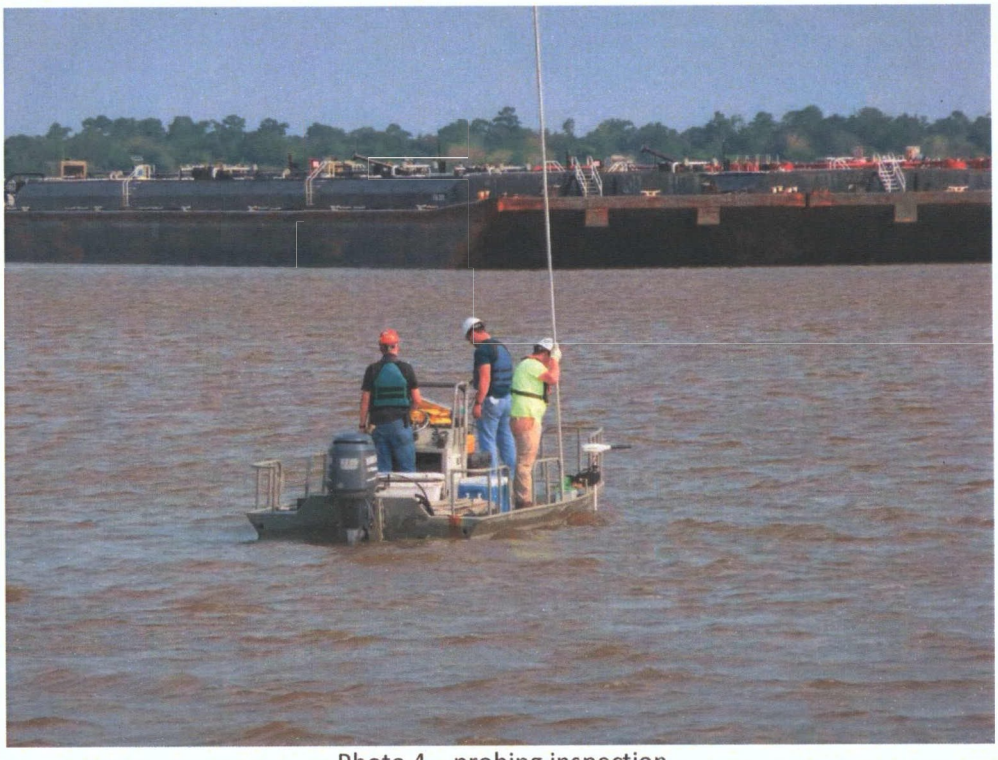

Photo 4 – probing inspection

Photo 5 – upland topographic survey activities

Photo 6 – buoy retrieval

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DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Mike Wells (USA)
DAY OF WEEK & DATE:	Thursday, September 7, 2017	**REPORT NO.**	4
WEATHER	Sunny; winds out of NNE	**TEMPERATURE**	L: 65 H: 81 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
5 – USA 5 – HC 3 – BESI	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator 3 @ 12-cy dump trucks 4 @ 20-ton trucks
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 **Height:** 2.00 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0730 – AQ representative on site

0815 – first round (3 trucks) arrive to deliver rock from Bluebonnet stockpile; USA continued maintenance of south & central berms

0905 – BESI and AQ probing west and northwest area

0955 – second round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

1040 – 20-ton truck (1 truck) onsite to deliver rock from quarry in Marble Falls, TX

1050 – HC surveying west cell (topo) and east cell (hydro)

1055 – 20-ton truck (1 truck) onsite to deliver rock from quarry in Marble Falls, TX

1115 – 20-ton trucks (2 trucks) onsite to deliver rock from quarry in Marble Falls, TX

1135 – third round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

1200 – NCS representatives (2 people) onsite to inspect damaged camera systems

1245 – NCS completed inspection of damaged camera systems and departed site

1320 – fourth round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

1510 – fifth round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

ANCHOR QEA

DAILY REPORT

1630 –survey crews and probing crew depart site

1700 – USEPA departs site; AQ departs site; USA departs site

Summary of Progress on this Date:

- Completed initial hydrographic and topographic survey
- Continued cap probing inspection
- Continued maintenance of berms, placing geotextile and rock
- 15 loads of rock received from Bluebonnet stockpile, approximately 250 tons
- 4 loads of rock received from quarry in Marble Falls, approximately 80 tons

Additional Persons Onsite on this Date:

Wendell Mears, Rick Coupe, Justin Marks, John Laplante and David Keith (AQ)
Gary Miller and Ashley (USEPA)
NCS inspecting damaged camera systems

Material Delivery Summary as of this Date: None.

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	330	Truck Measure	400	730

TESTS PERFORMED:	None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	8	DATE	9/7/2017

Photo 1 – probing inspection

Photo 2 – topographic survey activities

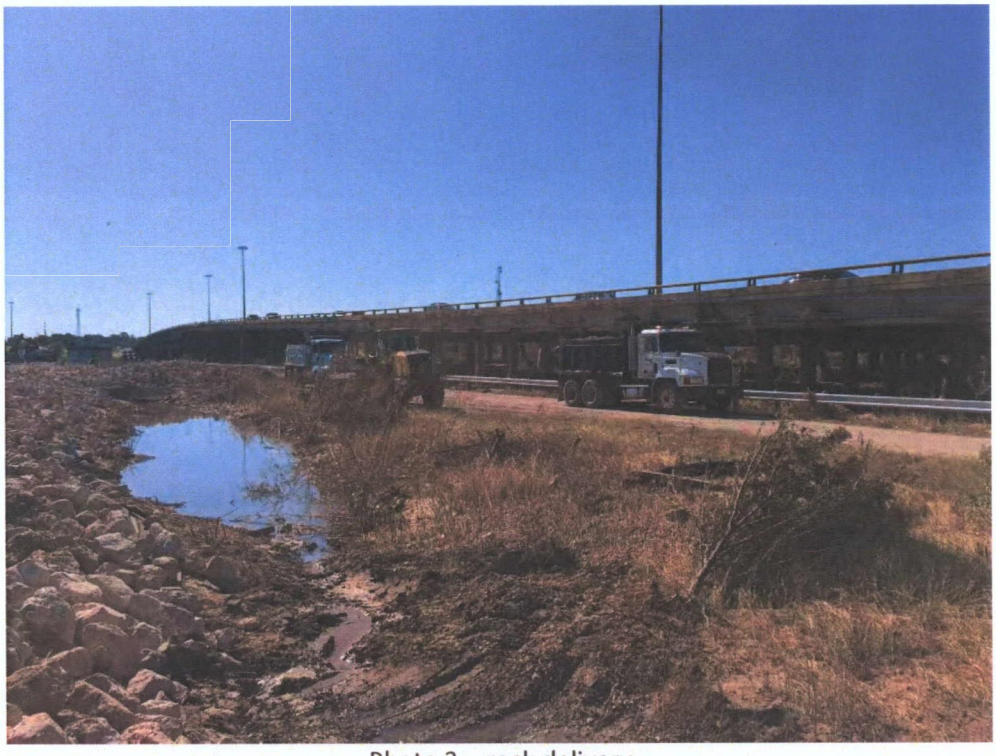

Photo 3 – rock delivery

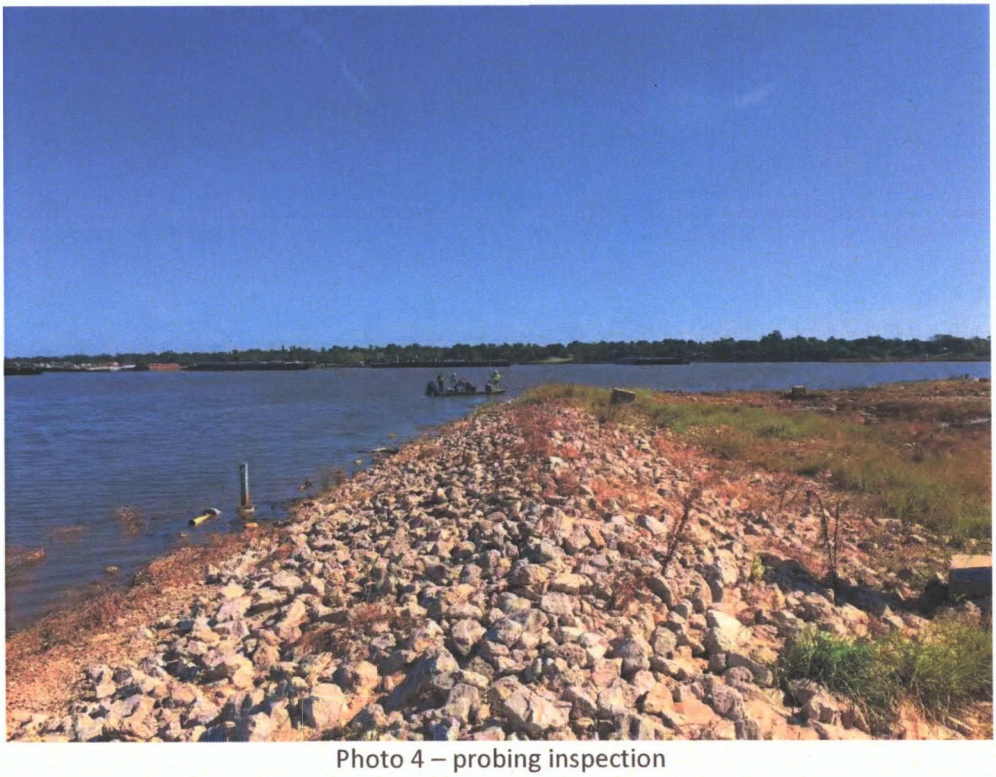

Photo 4 – probing inspection

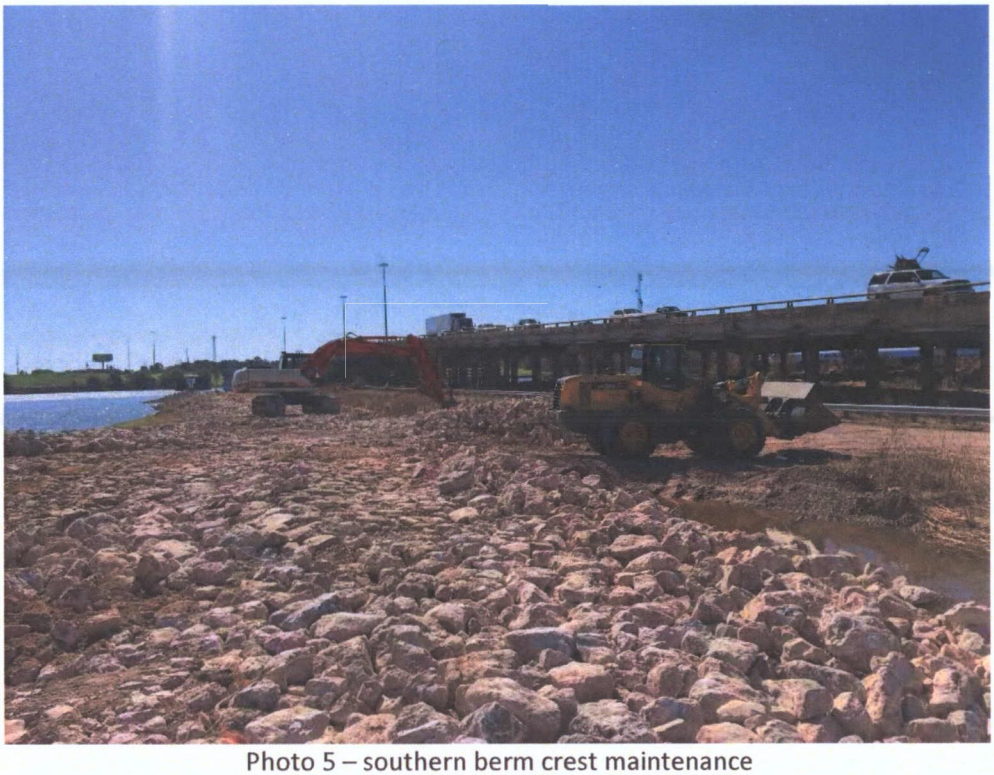

Photo 5 – southern berm crest maintenance

Photo 6 – hydrographic survey activities

Photo 7 – rock delivery

Photo 8 – southern berm crest maintenance; topographic activities

Photo 9 – probing activities

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DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Friday, September 8, 2017	**REPORT NO.**	5
WEATHER	Sunny; winds out of NNE	**TEMPERATURE**	L: 65 H: 81 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
7 – USA 0 – HC 3 – BESI 1 – Doskocil 2 – National Fence 2 – NCS	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator Front end loader 3 @ 12-cy dump trucks 1 @ 20-ton trucks
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 **Height:** 1.22 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0710 – AQ representative on site

0730 – BESI and AQ continuing probing west and northwest area; USA continuing maintenance of central berm

0735 – 20-ton truck (1 truck) onsite to deliver rock from quarry in Marble Falls, TX

0800 – NCS onsite to service damaged camera units

0820 – first round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

0845 – first truck onsite to deliver heavy equipment pads

0945 – second round (3 trucks) arrive to deliver rock from Bluebonnet stockpile; NCS completed removal of damaged camera units

1005 – second truck onsite to deliver heavy equipment pads

1030 – USA completed maintenance of central berm; beginning moving heavy equipment pads to north area between central and western berms

1125 – third round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

1200 – representative from Exxon/Mobil on site to observe work

1330 – fourth round (3 trucks) arrive to deliver rock from Bluebonnet stockpile

ANCHOR QEA

DAILY REPORT

1345 – Doskocil onsite placing bouys in eastern area

1415 – Truck onsite to deliver landscape fabric

1420 – National Fence onsite to begin erection of temporary fencing

1510 – fifth round (3 trucks) arrive to deliver rock from Bluebonnet stockpile; 15 total loads delivered today

1630 – USA, National Fence, Benchmark, and Exxon/Mobil representative depart site for day

1700 – USEPA and AQ depart site

Summary of Progress on this Date:

- Completed upland cap probing inspection; completed probing inspection in western area
- Completed maintenance of central berm placing rock; placed equipment pads in preparation for maintenance of northern area of west cell
- 15 loads of rock received from Bluebonnet stockpile, approximately 270 tons
- 1 load of rock received from quarry in Marble Falls, approximately 20 tons
- Completed 400-ft of temporary fencing
- Reinstalled 10 buoys in eastern area

Additional Persons Onsite on this Date:
Rick Coupe, Justin Marks, John Laplante and David Keith (AQ)
Gary Miller and Ashley Howard (USEPA)
Exxon/Mobil representative observing work near buried pipeline

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	290	Truck Measure	730	1020

TESTS PERFORMED:	None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	10	DATE	9/8/2017

Photo 1 – maintenance of northern end of central berm

Photo 2 – probing inspection in east area

Photo 3 – heavy equipment pads in north area between central and western berms

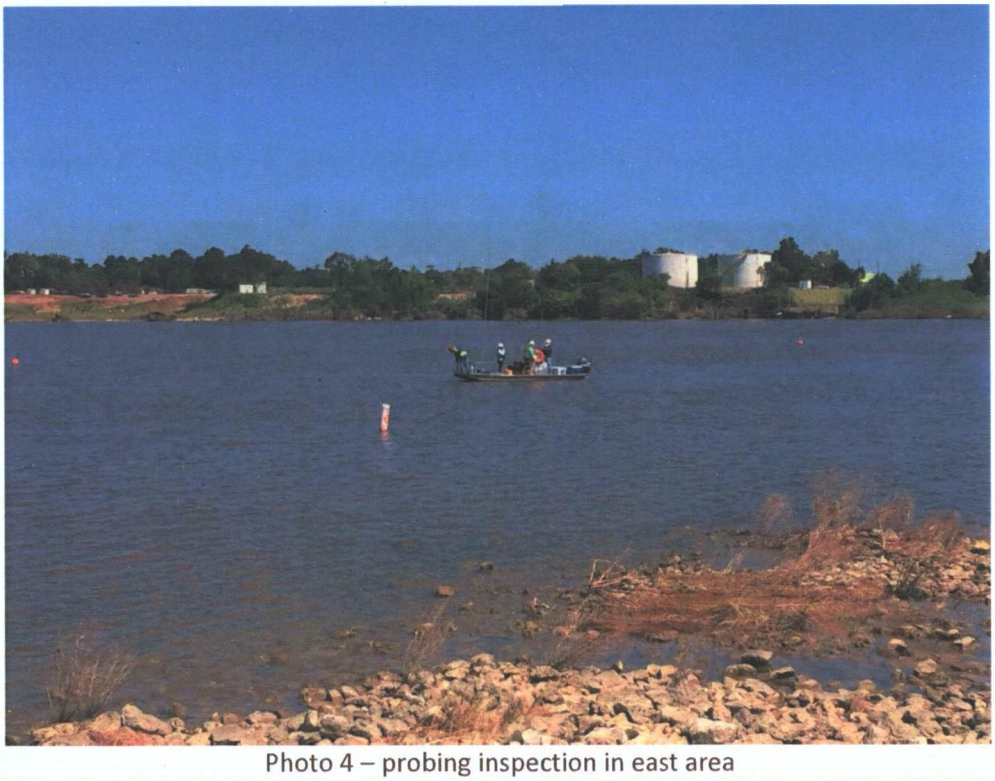


Photo 4 – probing inspection in east area

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Saturday, September 9, 2017	**REPORT NO.**	6
WEATHER	Sunny, winds out of the N	**TEMPERATURE**	L: 65 H: 84 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
6 – USA 2 – BESI 2 – National Fence	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator Front end loader
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0800 **Height:** 0.97 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ representative on site

0730 – USA beginning maintenance of northern area between central and western berms placing geotextile and rock

0810 – National Fence continuing erection of temporary fencing

0900 – BESI and AQ continuing probing of eastern area

1015 – Exxon/Mobil rep departs site for day

1045 – Temporary fence construction completed; National Fence departing site

1500 – Gary Miller (USEPA) departs site for day

1630 – USEPA and USA depart site

1710 – BESI and AQ depart site

Summary of Progress on this Date:

- Continued probing inspection of eastern area
- Began maintenance of northern area between central and western berms
- Completed erection of temporary fence

Additional Persons Onsite on this Date:

Rick Coupe and Justin Marks (AQ)
Gary Miller and Ashley Howard (USEPA)
Exxon/Mobil representative observing work near pipelines

ANCHOR QEA

DAILY REPORT

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	0	Truck Measure	1020	1020

TESTS PERFORMED: None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	10	DATE	9/9/2017

Photo 1 – buoys in eastern area

Photo 2 – probing inspection activities in eastern area

Photo 3 – maintenance of cap in western cell

Photo 4 – maintenance of northern area between central and western berms

Photo 5 – maintenance of northern area between central and western berms

Photo 6 – maintenance of northern area between central and western berms

Photo 7 – maintenance of cap in western cell

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Monday, September 11, 2017	**REPORT NO.**	7
WEATHER	Sunny, winds out of the NNW	**TEMPERATURE**	L: 63, Hi: 82

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
4 – USA 4 – BESI	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator Komatsu WA320 Frontend Loader
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0700 **Height:** 1.99 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ representative on site

0755 – USA continuing maintenance of northern area between central and western berms placing geotextile and rock

0830 – BESI and AQ continuing probing inspection in east area

0945 – USEPA dive team arrives onsite and begins setup/prep with BESI

1050 – BESI and AQ collect 1 discreet and 1 5-part composite sample from western cell

1150 – BESI and USEPA begin dive operations

1315 – USA continuing maintenance of north shoreline between central and western berms; USA begins additional maintenance of southern berm

1600 – BESI and AQ complete probing inspection on east side for the day

1630 – 4 additional USEPA representatives onsite meeting with David Keith (AQ); diving activities wrapping up for day

1700 – 4 additional USEPA representatives offsite; David Keith offsite

1800 – USEPA, BESI, and AQ offsite

Summary of Progress on this Date:

ANCHOR QEA

DAILY REPORT

- Continued probing inspection of eastern area
- Continued maintenance of northern area between central and western berms
- Began diving operations in west/northwest area

Additional Persons Onsite on this Date:

Rick Coupe and Justin Marks (AQ)
Gary Miller, Ashley Howard, and 4 additional representatives (USEPA)
Exxon/Mobil representative observing work near pipelines

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	0	Truck Measure	1020	1020

TESTS PERFORMED:	None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	11	DATE	9/11/2017

Photo 1 – maintenance of north shoreline between central and western berms

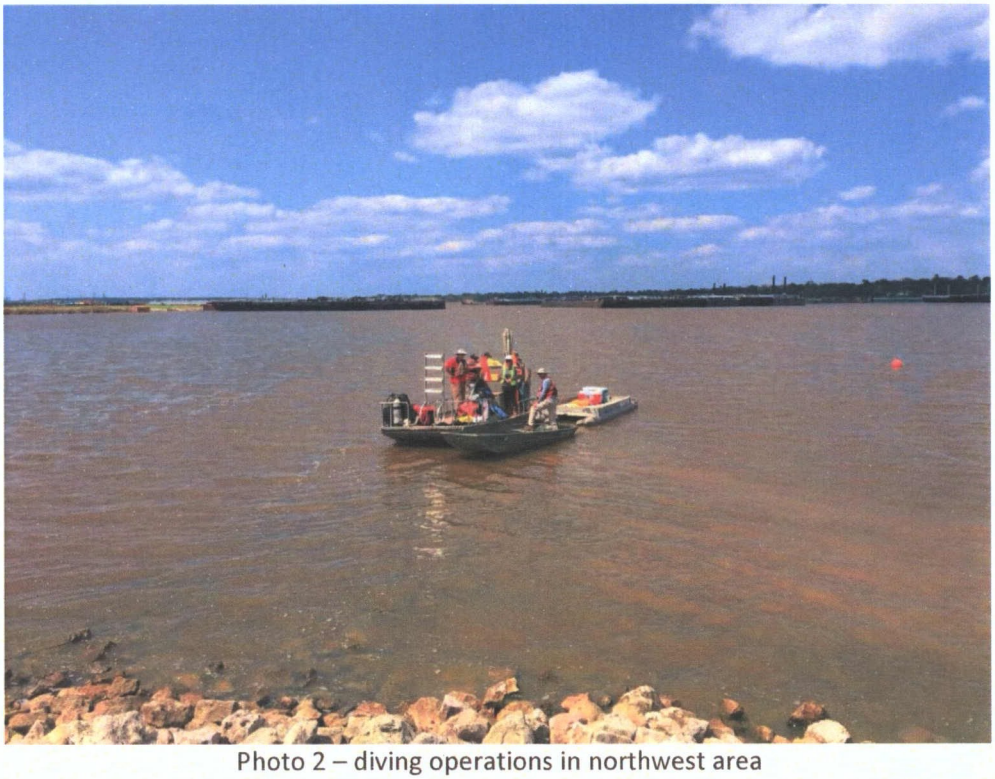


Photo 2 – diving operations in northwest area

Photo 3 – maintenance of north shoreline between central and western berms

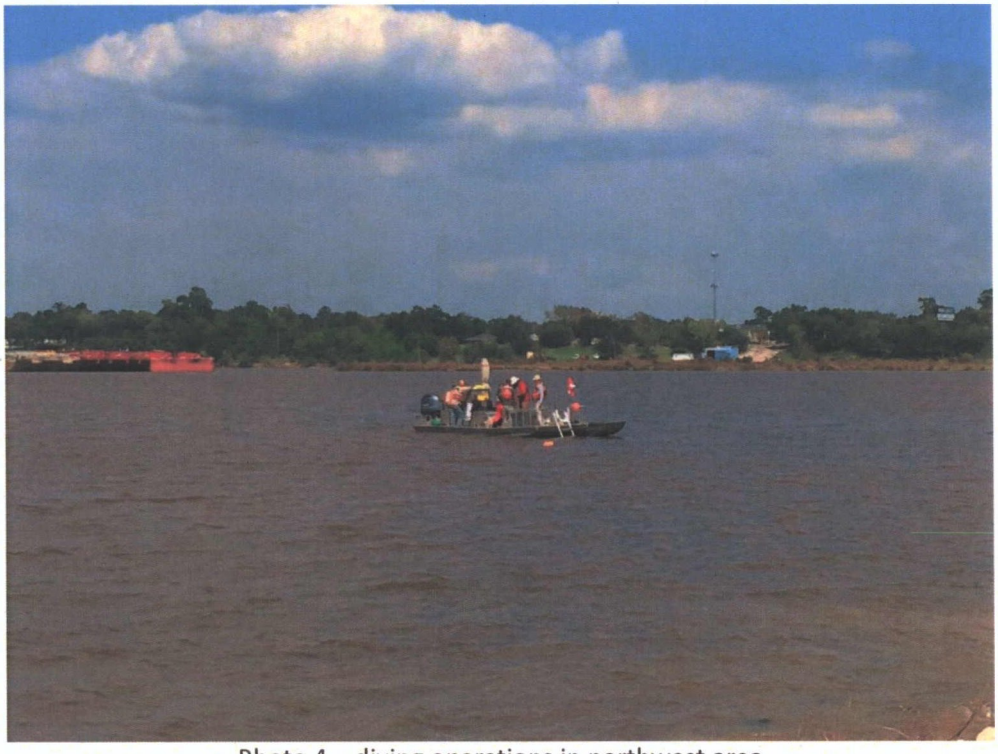


Photo 4 – diving operations in northwest area

Photo 5 – maintenance of north shoreline between central and western berms

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Tuesday, September 12, 2017	**REPORT NO.**	8
WEATHER	Sunny, winds out of the WNW	**TEMPERATURE**	Lo: 63, Hi: 84 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
5 – USAE 2 – BESI	Skid Steer – SVL 90-2 Link Belt 210 X2 Hydraulic Excavator Komatsu WA320 Frontend Loader
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0654 **Height:** 1.69 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ representative on site

0710 – USA continuing maintenance of northwest shoreline

0740 – BESI continuing upland probing inspection

1000 – AQ and USA completed punch-list walkthrough; USA beginning general maintenance of berms/cap in areas identified in walkthrough; BESI and AQ continuing probing inspection in shallow areas in eastern and northwest areas

1620 – AQ and USA performed final walkthrough of completed punchlist items; USA begins preparing materials and heavy equipment for demob

1700 – USEPA and USA leaving site

1710 – BESI and AQ finished probing inspection in shallow eastern and northwest areas for the day

1725 – BESI and AQ leaving site

Summary of Progress on this Date:

- Continued probing inspection
- Completed maintenance of northwestern shore between central and western berms
- Completed remaining general cap/berm maintenance prior to demobilization of heavy equipment
- Began preparing materials and equipment for demobilization

Additional Persons Onsite on this Date:

Rick Coupe, Justin Marks, and Wendell Mears (AQ)
Bob Sullivan (USEPA)
Exxon/Mobil representative (Patrick Dugas of S. Oliver & Associates, L.P.) observing work near pipelines

ANCHOR QEA

DAILY REPORT

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	0
Type D	Tons	0	Truck Measure	1020	1020

TESTS PERFORMED:	None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	11	DATE	9/12/2017

Photo 1 – moving heavy equipment pads from northwest shoreline area in preparation for demobilization

Photo 2 – area around camera system on central berm following maintenance

Photo 3 – moving heavy equipment pads from northwest shoreline area in preparation for demobilization

Photo 4 – probing inspection in shallow areas east of central berm

Photo 5 – probing inspection of shallow areas on northwest side

Photo 6 – northwest shoreline following maintenance

Photo 7 – southwest portion of southern berm following maintenance

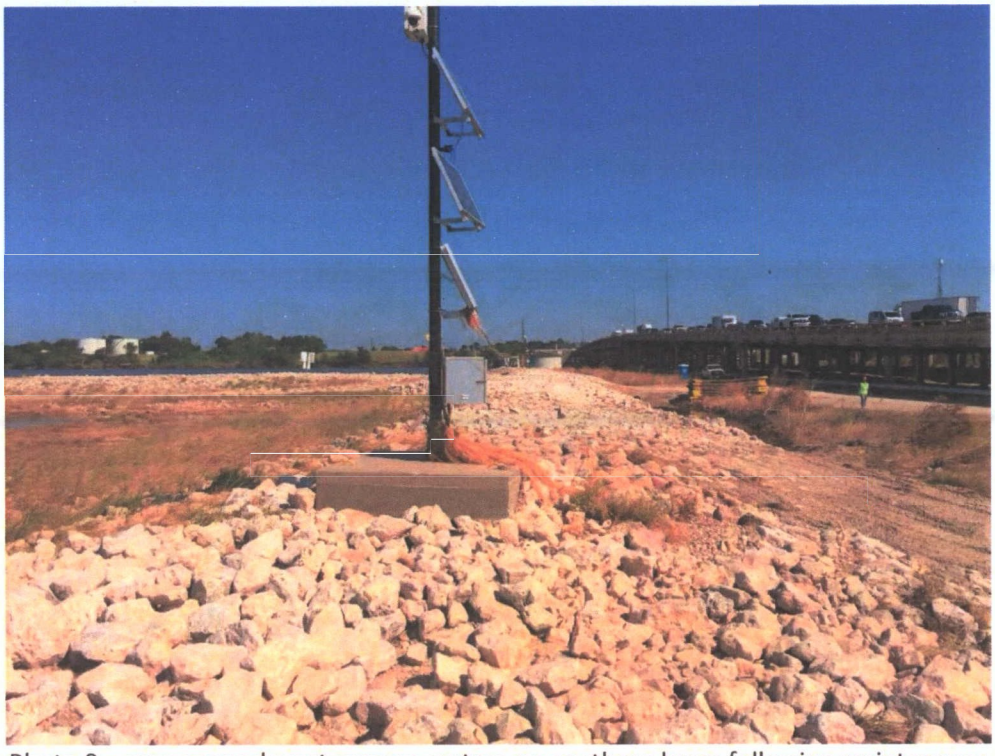


Photo 8 – area around west camera system on southern berm following maintenance

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Hydrographic Consultants (HC) – Survey Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Wednesday, September 13, 2017	**REPORT NO.**	9
WEATHER	Sunny, winds out of WSW	**TEMPERATURE**	Lo: 70, Hi: 87 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
5 – USAE 3 – BESI 2 – National Fence	Link Belt 210 X2 Hydraulic Excavator Komatsu WA320 Frontend Loader 2 @ 12-cy dump trucks
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0700 **Height:** 1.37 NAVD 88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ representative on site

0715 – USA continuing preparation of materials and heavy equipment for demobilization

0745 – Truck onsite to remove heavy equipment pads

0755 – BESI continuing probing inspection

0840 – First round (2 trucks) onsite delivering rock from Bluebonnet stockpile

1010 – Second round (2 trucks) onsite delivering rock from Bluebonnet stockpile

1020 – National Fence onsite erecting temporary fencing

1045 – USEPA dive team and AQ continuing probing in west area

1100 – Truck onsite to remove heavy equipment pads

1330 – USA replacing damaged signage and performing rock stockpile management

1600 – USA repairing signs at front entrance; National Fence completed erection of temporary fence

1700 – USA, Rick Coupe (AQ), and Justin Marks (AQ) leaving site

1800 – USEPA, BESI, and AQ (Wendell Mears) leaving site

ANCHOR QEA

DAILY REPORT

Summary of Progress on this Date:

- Continued probing inspection
- Demobilized heavy equipment pads
- Completed temporary fencing
- Replaced and repaired damaged signage
- Completed rock stockpile management

Additional Persons Onsite on this Date:

Rick Coupe, Justin Marks, and Wendell Mears (AQ)
Bob Sullivan, Ashley Howard, John Penland, and 2-person dive team (USEPA)
Drew Schafer, Steve Joyce (Waste Management)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	48	Truck Measure	0	48
Type D	Tons	0	Truck Measure	1020	1020

TESTS PERFORMED: None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Justin Marks	HRS	11	DATE	9/13/2017

Photo 1 – preparing heavy equipment pads for demobilization

Photo 2 – performing stockpile management

Photo 3 – probing inspection of northwest area

Photo 4 – stockpile management

Photo 5 – erection of temporary fencing

Photo 6 – performing stockpile management

Photo 7 – probing inspection in west area

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	USA Environment, LP (USA) – Maintenance Benchmark Ecological Services (BESI) – Inspection	**SUPERINTENDENT**	Larry Jones (USA)
DAY OF WEEK & DATE:	Thursday, September 14, 2017	**REPORT NO.**	10
WEATHER	Sunny, winds out of SE	**TEMPERATURE**	Lo: 71 F Hi: 89 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
1 – USAE 1 – BESI	Link Belt 210 X2 Hydraulic Excavator (Demobilized from the Site on this date) Komatsu WA320 Frontend Loader (Demobilized from the Site on this date)
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 1200 **Height:** 2.1 NAVD88	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

1200 – AQ and BESI representatives on site. USAE representative onsite to await demobilization of equipment from Site.

1300-1310 – B. Sullivan (USEPA) onsite for site check.

1330 – AQ and BESI on water to perform confirmatory probing of USEPA dive team locations in NW area.

1430 – Frontend loader demobilized from Site. USAE representative demobilizes from Site.

1620 – AQ and BESI complete probing and leave the Site.

Summary of Progress on this Date:

- Confirmatory probing inspection of NW area.

Additional Persons Onsite on this Date:

Rick Coupe (AQ)
Bob Sullivan (USEPA)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

TESTS PERFORMED: None

ANCHOR QEA

DAILY REPORT

PHONE LOG: N/A					
SITE PHOTOS/VIDEOS TAKEN:		**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**			
None.		None			
QA REPRESENTATIVE	Rick Coupe	HRS	4.5	DATE	9/14/2017

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	Benchmark Ecological Services (BESI)	**SUPERINTENDENT**	
DAY OF WEEK & DATE:	Friday, September 15, 2017	**REPORT NO.**	11
WEATHER	Sunny, winds out of ESE	**TEMPERATURE**	Lo: 73 F Hi: 91 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
2 – BESI 4 – Orion Dive Team	
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0700 **Height:** 3.1 NAVD88 1800 2.2	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ, BESI, and USEPA dive team onsite.

0730 – Orion dive team onsite.

0810 – Dive team H&S tailgate meeting.

0825 – Launching BESI support boat for USEPA dive team support and Orion dive team boat.

0850 – USEPA begins diving first location.

0945 – USEPA Region 6 and HQ representatives onsite for tour of cap area.

1015 – USEPA Region 6 and HQ representatives leaving Site.

1035 – USEPA and Orion divers in water to begin sample collection.

1040 - 1740 – USEPA and Orion divers collect 1 replicate samples each at 14 separate locations (28 samples total) for analysis.

1745 – Dive boats head to shore and offload dive equipment and personnel.

1800 – BESI takes custody of all 28 samples for transport to the laboratory on 9/16/2017.

1805 – All personnel offsite.

Summary of Progress on this Date:

- Dive team sampling in NW area

Additional Persons Onsite on this Date:

Rick Coupe, and Wendell Mears (AQ)

ANCHOR QEA

DAILY REPORT

5-person dive team (USEPA)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

TESTS PERFORMED: None

PHONE LOG:

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Rick Coupe	HRS	11	DATE	9/15/2017

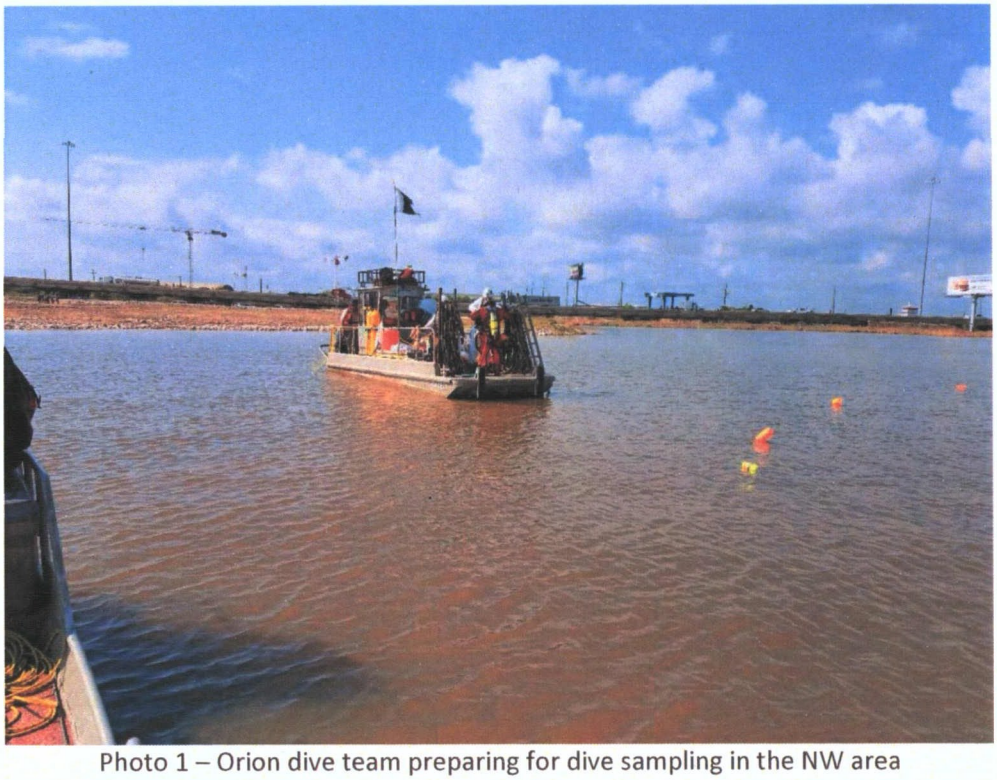


Photo 1 – Orion dive team preparing for dive sampling in the NW area

Photo 2 – USEPA dive team performing sampling in the NW area

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	Benchmark Ecological Services (BESI)	**SUPERINTENDENT**	
DAY OF WEEK & DATE:	Saturday, September 16, 2017	**REPORT NO.**	12
WEATHER	Sunny, winds out of SE	**TEMPERATURE**	Lo: 73 F Hi: 95 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
2 – BESI	
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0700 **Height:** 2.6 NAVD88 1300 2.1	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0700 – AQ representative onsite.

0735 – BESI onsite and preparing pontoon barge for maintenance activities.

0840 – Maintenance tailgate H&S meeting.

0850 - 1240 – BESI performs maintenance on the cap in the Eastern Cell. Maintenance completed at AOIs 16, 17, 20, 21, and 22.

1200 – Terry Andrews onsite for TCEQ.

1245 – BESI off water preparing to leave site for the weekend.

1315 – All personnel offsite.

Summary of Progress on this Date:

- Maintenance activities in the Eastern Cell

Additional Persons Onsite on this Date:

Rick Coupe (AQ)
Terry Andrews (TCEQ)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

ANCHOR QEA

DAILY REPORT

TESTS PERFORMED:	None				
PHONE LOG:					
SITE PHOTOS/VIDEOS TAKEN:		**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**			
See attached		None			
QA REPRESENTATIVE	Rick Coupe	HRS	6	DATE	9/16/2017

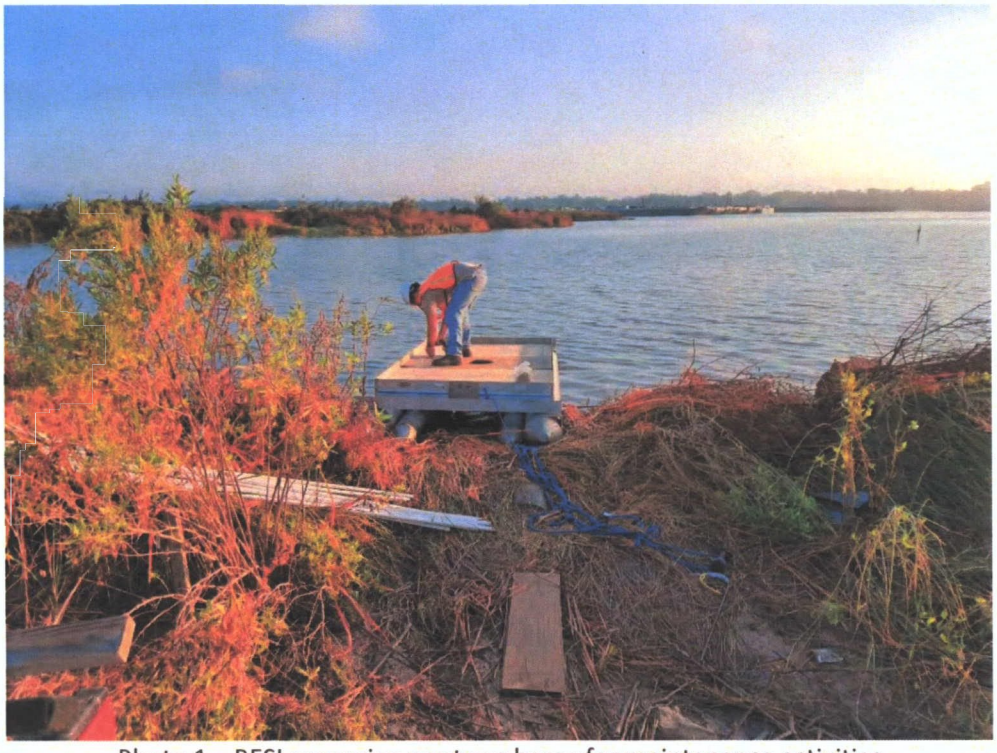


Photo 1 – BESI preparing pontoon barge for maintenance activities

Photo 2 – BESI moving rock to a maintenance location in the Eastern Cell.

Photo 3 – BESI placing rock at maintenance location in the Eastern Cell.

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	Benchmark Ecological Services (BESI) USA Environment (USAE)	**SUPERINTENDENT**	
DAY OF WEEK & DATE:	Tuesday, September 19, 2017	**REPORT NO.**	13
WEATHER	Partly Cloudy, winds out of SE	**TEMPERATURE**	Lo: 73 F Hi: 90 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
3 – BESI 3 – USA Environment	Kubota KX080-3 Excavator Kubota SUL 90-2 Skid Steer
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 0730 **Height:** 2.3 NAVD88 1000 2.8	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0730 – AQ, USEPA, and USAE representatives onsite.

0810 – Excavator and skid steer delivered to site.

0820 – BESI onsite.

0830-0915 – K. Kichline (BESI) onsite to collect upland sediment sample location coordinates.

0835 – Maintenance activities tailgate H&S meeting.

0845 - 1630 – BESI performs maintenance on the cap in the Northwestern Area with the assistance of USAE. Maintenance completed at AOIs 3, 4, 5, 6, 23 and 36.

1320-1430 – D. Moreira onsite.

1615 – BESI off water preparing to leave Site.

1630 – All personnel offsite.

Summary of Progress on this Date:

- Mobilization of excavator and skid steer to Site
- Maintenance activities in the Northwestern Area

Additional Persons Onsite on this Date:

Rick Coupe (AQ)
David Abshire (USEPA)
David Moreira (MIMC)

ANCHOR QEA

DAILY REPORT

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

TESTS PERFORMED:	None

PHONE LOG:
0815 – call with W. Mears to discuss logistics and scheduling of subcontractors.

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Rick Coupe	HRS	10	DATE	9/19/2017

Photo 1 – USAE and BESI loading pontoon barge with rock during maintenance activities

Photo 2 – BESI placing rock on a maintenance location in the NW area.

Photo 3 – Confirmatory probing of a maintenance location in the NW area.

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	Benchmark Ecological Services (BESI) USA Environment (USAE) Hydrographic Consultants (HCL)	**SUPERINTENDENT**	
DAY OF WEEK & DATE:	Wednesday, September 20, 2017	**REPORT NO.**	14
WEATHER	Partly Cloudy, with passing thundershowers, winds out of SE	**TEMPERATURE**	Lo: 73 F Hi: 92 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
2 – BESI 3 – USA Environment 2 – HCL	Kubota KX080-3 Excavator Kubota SUL 90-2 Skid Steer
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 1030 **Height:** 2.7 NAVD88 1640 1.8	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0730 – AQ, USEPA, and USAE representatives onsite.

0735 – Maintenance activities tailgate H&S meeting.

0800 - 1630 – BESI performs maintenance on the cap in the Northwestern Area with the assistance of USAE. Maintenance completed at AOIs 1, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, and 35.

0850-1605 – HCL onsite to complete portions of upland that were missed previously due to construction activities.

1200-1300 – Lightning delay

1345 – BESI mobilizes additional boat and pontoon barge for rock placement

1355-1450 – Lightning delay

1600 – Rock placement activities complete for the day. BESI locating additional AOI for maintenance on 9/21.

1610 – USAE personnel leaving site

1630 – BESI off water preparing to leave Site

1700 – All personnel offsite

Summary of Progress on this Date:

- Maintenance activities in the Northwestern Area
- Survey of upland portions of cap missed during previous survey event

ANCHOR QEA

DAILY REPORT

Additional Persons Onsite on this Date:
Rick Coupe (AQ)
David Abshire (USEPA)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

TESTS PERFORMED:	None
PHONE LOG: None	

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Rick Coupe	HRS	10	DATE	9/20/2017

Photo 1 – USAE and BESI loading pontoon barge with rock during maintenance activities

Photo 2 – BESI placing rock on a maintenance location in the NW area

Photo 3 – Confirmatory probing of a maintenance location in the NW area

ANCHOR QEA

DAILY REPORT

PROJECT	San Jacinto River Waste Pits TCRA Post Hurricane Harvey Inspection and Maintenance	**CONTRACT NO.**	
CONTRACTOR	Benchmark Ecological Services (BESI) USA Environment (USAE)	**SUPERINTENDENT**	
DAY OF WEEK & DATE:	Wednesday, September 20, 2017	**REPORT NO.**	15
WEATHER	Cloudy with passing thundershowers and variable winds	**TEMPERATURE**	Lo: 73 F Hi: 92 F

NUMBER/CLASS OF CONTRACTOR'S PERSONNEL:	**MAJOR EQUIPMENT ON JOB (Size/capacity and hours):**
2 – BESI 3 – USA Environment	Kubota KX080-3 Excavator Kubota SUL 90-2 Skid Steer
TIDE INFORMATION:	**HEALTH AND SAFETY INFORMATION:**
Time: 1000 **Height:** 2.7 NAVD88 1645 1.6	No incidents or near misses on this date.

CHRONOLOGICAL ACCOUNT OF DAY'S WORK:

0730 – AQ, BESI, USEPA, and USAE representatives onsite.

0735 – Maintenance activities tailgate H&S meeting.

0745 – USAE fueling equipment and managing rock stockpile

0835 - 1705 – BESI completes maintenance on the cap with the assistance of USAE and performs confirmatory probing of all locations to ensure adequate cap thickness achieved at AOI locations

0900-1000 – International Paper representatives onsite (3) escorted by D. Keith (AQ)

0955-1035 – Lightning delay

1125-1430 – Lightning delay

1345 – BESI mobilizes additional boat and pontoon barge for rock placement

1355-1450 – Lightning delay

1715 – BESI leaving site to trailer boat

1730 – All personnel offsite

Summary of Progress on this Date:

- Maintenance activities in the Northwest Area and Eastern Cell

Additional Persons Onsite on this Date:

Rick Coupe, David Keith (AQ)

ANCHOR QEA

DAILY REPORT

David Abshire (USEPA)
Doug Sheilds, Mike Palermo, Phil Slowiak (IP)

Material Delivery Summary as of this Date:

Material	Units	Delivery (tons)	Delivery Verification Method	Preceding Delivered Total	Total Delivered for Project
Type C	Tons	0	Truck Measure	0	48
Type D	Tons	0	Truck Measure	0	1020

TESTS PERFORMED:	None
PHONE LOG: None	

SITE PHOTOS/VIDEOS TAKEN:	**FORCE ACCOUNT WORK/ CHANGES ENCOUNTERED:**
See attached	None

QA REPRESENTATIVE	Rick Coupe	HRS	10	DATE	9/21/2017

Photo 1 – USAE and BESI loading pontoon barge with rock during maintenance activities

Photo 2 – BESI placing rock on a maintenance location in the Eastern Cell

Photo 3 – USAE performing stockpile management

Photo 4 – BESI locating an AOI in the Eastern Cell

Appendix C
Work Plan for Maintenance

614 Magnolia Avenue
Ocean Springs, Mississippi 39564
228.818.9626

ANCHOR QEA

October 5, 2017

Gary Miller
Remedial Project Manager
U.S. Environmental Protection Agency, Region 6
Superfund Division (6SF-RA)
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Re: Plan for Armor Rock Placement Adjacent to the Time Critical Removal Action Armored Cap San Jacinto River Waste Pits Superfund Site, Channelview, Texas

Dear Gary,

This plan is submitted in response to a request by the U.S. Environmental Protection Agency (USEPA) that McGinnes Industrial Maintenance Corporation (MIMC) and International Paper Company (IP) perform work in the main river channel of the San Jacinto River channel. The work would be performed in an area, as shown on Figure 1 (Area), located to the east and outside the footprint of the San Jacinto River Waste Pits Time Critical Removal Action (TCRA) armored cap (Armored Cap). In the Area, scour, likely as a result of Hurricane Harvey, has occurred, while post-Hurricane Harvey inspections of the Armored Cap demonstrate that there was not a release of material to the environment, and the Armored Cap performed well.

The work would involve placing additional rock within the Area in order to fortify it. The proposed work would be consistent with enhancements to protect the Armored Cap that MIMC and IP have proposed be included in a final remedy for the Site. The additional rock would be placed in the river channel in the locations shown in Figure 1.

Background

Following Hurricane Harvey's landfall on the Texas coast, Anchor QEA, LLC, probed the Armored Cap and surveyed the Armored Cap and adjacent areas as required by and in accordance with the TCRA Operations, Monitoring, and Maintenance Plan (Anchor QEA 2011).[1] Probing of the Armored Cap conducted under the OMM Plan showed the Armored Cap to be intact along its perimeter in the vicinity of the Area, where it was designed and constructed with a thickened rock edge. A survey was performed on September 6 and 7, 2017, that showed that the grades in the Area appeared to be 5 to

[1] The OMM Plan was attached to the Draft Final RACR, submitted to USEPA on November 22, 2011, and authorization to implement the OMM Plan was contained in an email from USEPA dated January 18, 2012. The OMM Plan was also attached as an appendix to the Revised Draft Final RACR submitted to USEPA on March 9, 2012. An addendum to the OMM Plan, dated February 29, 2016, was developed to describe the addition of security cameras, their monitoring, and notifications, and approved by USEPA on March 31, 2016.

12 feet below the elevations measured during the July 2017 quarterly inspection survey (Figures 1, 2, and 3).

Work Plan

Type D rock (D_{50} equaling 8 inches) or larger will be placed in the Area as shown on Figure 1. Cross sections depicting the pre-hurricane and post-hurricane river bottom profiles, as well as the proposed armor rock placement, are provided in Figures 2 and 3. A nonwoven geotextile will be placed prior to placement of the rock. The 12-foot-wide geotextile panels will be placed down the slope, perpendicular to the slope contours, and overlapped at least 3 feet as shown in Figure 4. To keep the geotextile in place, the panels will be anchored at the top of the slope with sand bags, geotextile pins, rebar, or armor rock. The geotextile will be deployed down the slope and pinned at the toe of the slope with sand bags or armor rock. After anchoring the geotextile panels, the contractor will place a minimum 3-foot thickness of rock in the Area. For existing slopes that are steeper than 3H:1V, additional rock will be placed to achieve a final 3H:1V slope.

USEPA will assist in providing any authorizations or approvals that may be required to conduct the work.

Quality Assurance Procedures

Quality assurance measures will consist of rock thickness calculations and a bathymetric survey to provide a weight of evidence that the specified minimum rock thickness and design slope angle have been achieved. Thickness will be calculated by using barge displacement to compute the tonnage of rock placed over the work area. Tons will be converted to cubic yards using a conversion factor determined in consultation with the contractor and the quarry. The bathymetric survey will be used to confirm relatively even rock placement and to calculate thickness by comparing the pre-construction and post-construction surveys. If, based on review of the survey, there is evidence of subgrade settlement, the surveyed thickness may need to be "corrected" using the barge displacement thickness calculation. The bathymetric survey will also confirm a slope angle of 3H:1V was obtained.

As a contingency quality assurance measure, probing (Contingency Probing) may be attempted to measure the placed rock thickness. Given the thickness of rock to be placed, however, experience indicates that it may be difficult to completely penetrate the full rock thickness. Thus, Contingency Probing would only be used if the weight of evidence collected using bathymetry and calculated thickness indicates that there may be areas that do not meet the specified minimum thickness. For Contingency Probing, a steel probe will be advanced through the rock until the underlying geotextile is encountered. The placed rock thickness will be calculated at the location of probing according to the difference between the water depth to the surface of rock and the water depth to the contact with the geotextile.

Contingency Probing will be conducted on an as-needed basis in areas where the specified minimum thickness cannot be confirmed by the weight of evidence from survey and thickness calculations. In areas where less than 3 feet of armor rock is measured by Contingency Probing, additional rock will be placed, and the area will be reprobed to confirm that the minimum rock thickness has been achieved by the rework.

A hydrographic survey will be used to document the as-built condition of the work. A report documenting the work will be submitted to USEPA following completion of the as-built survey.

Schedule

MIMC and IP have been coordinating with a marine contractor to establish the schedule for implementation of the work. The following is the proposed implementation schedule, based on key milestones:

- Start of mobilization: within 2 weeks of USEPA approval of this plan
- Completion of geotextile and rock placement: within 3 weeks of the start of marine construction, assuming no significant weather delays, timely delivery of armor rock, and available tides and flow conditions that are compatible with the work described above
- Completion of final as-built survey: within 1 week of the completion of geotextile and armor rock placement, assuming no significant weather delays
- Report submittal to USEPA: within 30 calendar days of completion of the final as-built survey

Please let us know if you have any questions about the proposed activities, and do not hesitate to contact me if you would like to discuss anything.

Sincerely,

David C. Keith

David C. Keith, Ph.D., P.G., C. HG
Project Coordinator

John R. Verduin III

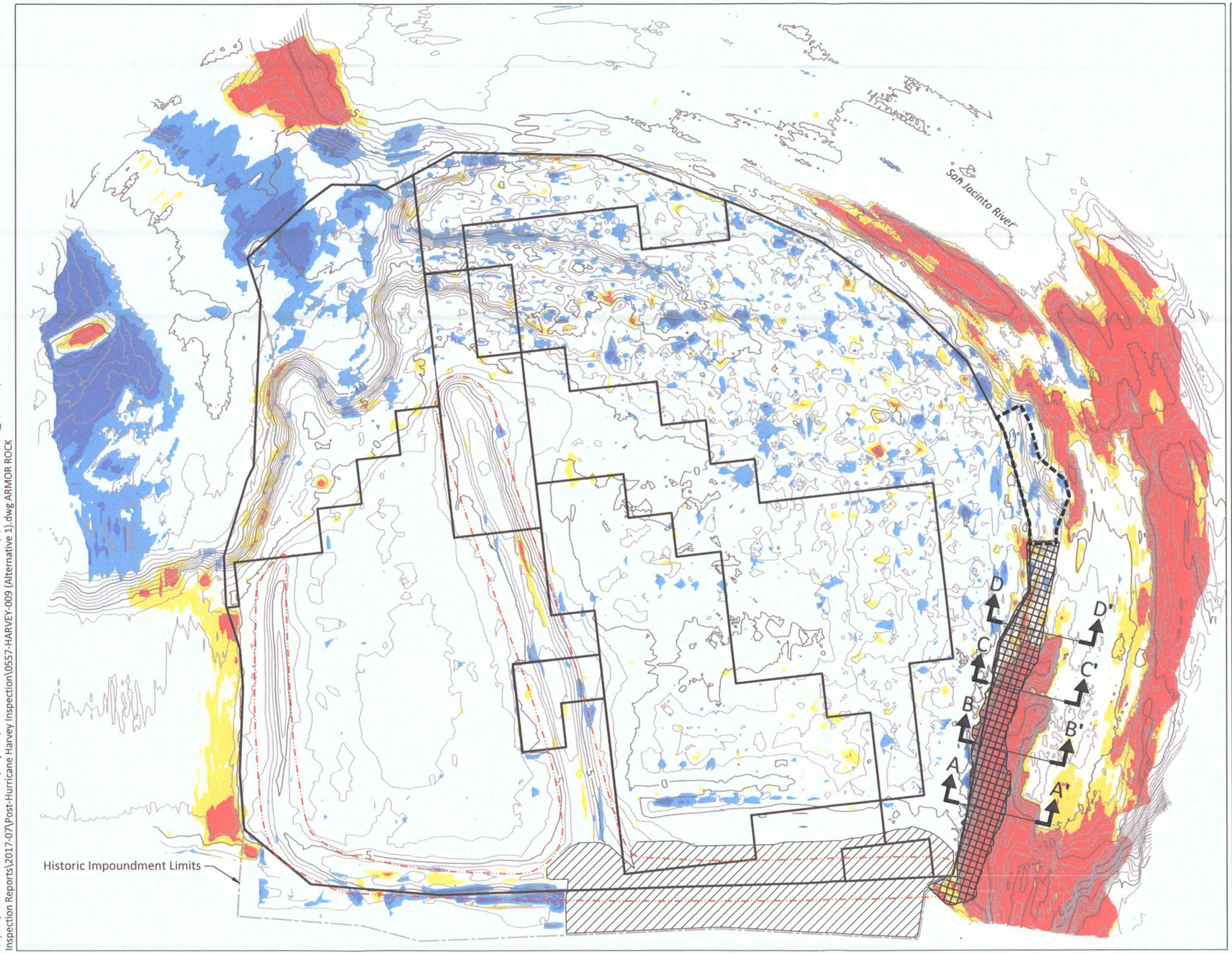
John Verduin, P.E.
Engineer of Record

cc: Dave Moreira, McGinnes Industrial Maintenance Corporation
Phil Slowiak, International Paper Company
John Laplante, Anchor QEA, LLC
Wendell Mears, Anchor QEA, LLC

Attachments

Figure 1 Plan View of Armor Rock Placement Area
Figure 2 Cross Sections A-A′ and B-B′
Figure 3 Cross Sections C-C′ and D-D′
Figure 4 Plan View of Geotextile Panel Layout

Figures



LEGEND:

- September 2017 Post-Hurricane Harvey Inspection Bathymetric and Topographic Contours (1 Foot Interval)
- Armor Rock Placement Area Footprint
- Area Not Included in September 2017 Post-Harvey Inspection Survey Due to Ongoing Maintenance
- Armored Cap Type and Boundary
- Historic Impoundment Limits
- Limits of November 2016 Work Plan
- > 1.0 Foot Increase
- 0.5 Foot Increase to 1.0 Foot Increase
- 0.5 Foot Increase to 0.5 Foot Decrease
- 0.5 Foot Decrease to 1.0 Foot Decrease
- > 1.0 Foot Decrease
- Approximate Location of Western, Southern, and Central Berms

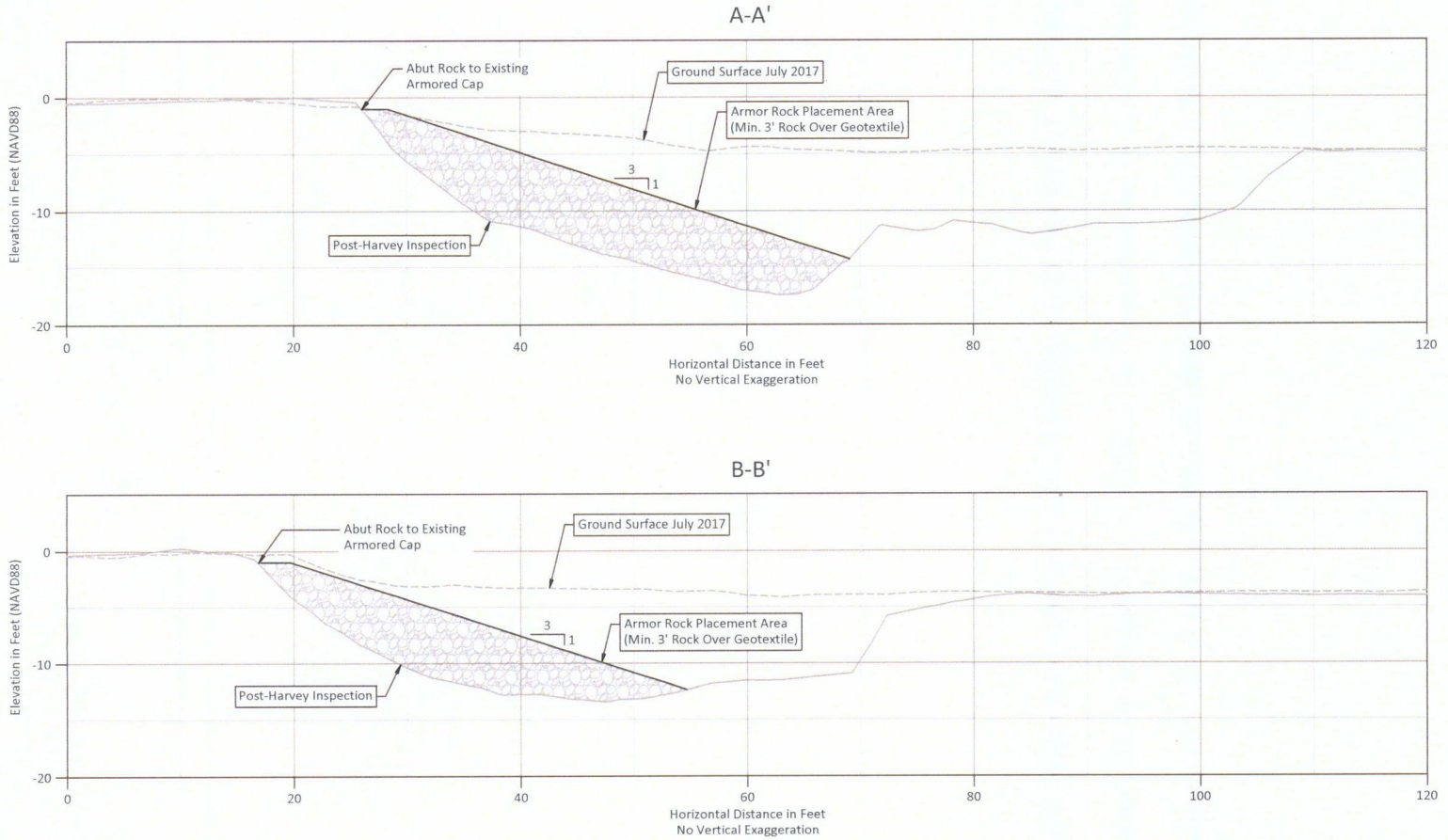
SOURCE: Drawing prepared from surveys provided by Hydrographic Consultants dated July 2017 and September 2017.
HORIZONTAL DATUM: Texas State Plane South Central, NAD83, U.S. Feet.
VERTICAL DATUM: NAVD 88.

0 120
Scale in Feet

Sep 21, 2017 10:48am dholmer K:\Projects\0557-McGinnes Industrial Maintenance Corp\San Jacinto Waste Pits_Quarterly Inspection Reports\2017-07\Post-Hurricane Harvey Inspection\0557-HARVEY-009 (Alternative 1).dwg ARMOR ROCK

ANCHOR QEA

Figure 1
Plan View of Armor Rock Placement Area
Post-Hurricane Harvey Work Plan (September 2017)
San Jacinto River Waste Pits Superfund Site



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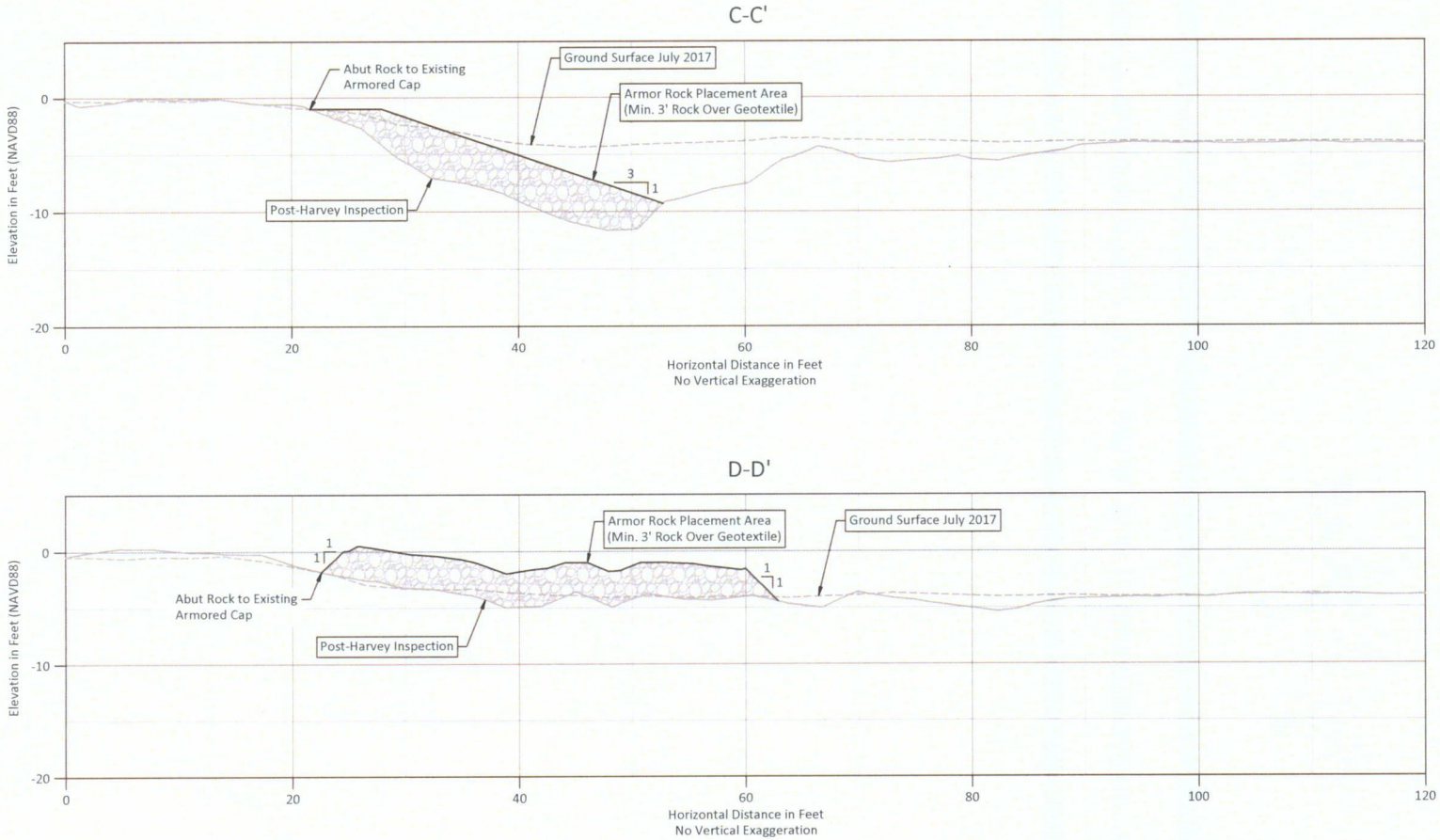
ANCHOR QEA

Figure 2
Cross Sections A-A' and B-B'
Post-Hurricane Harvey Work Plan (September 2017)
San Jacinto River Waste Pits Superfund Site



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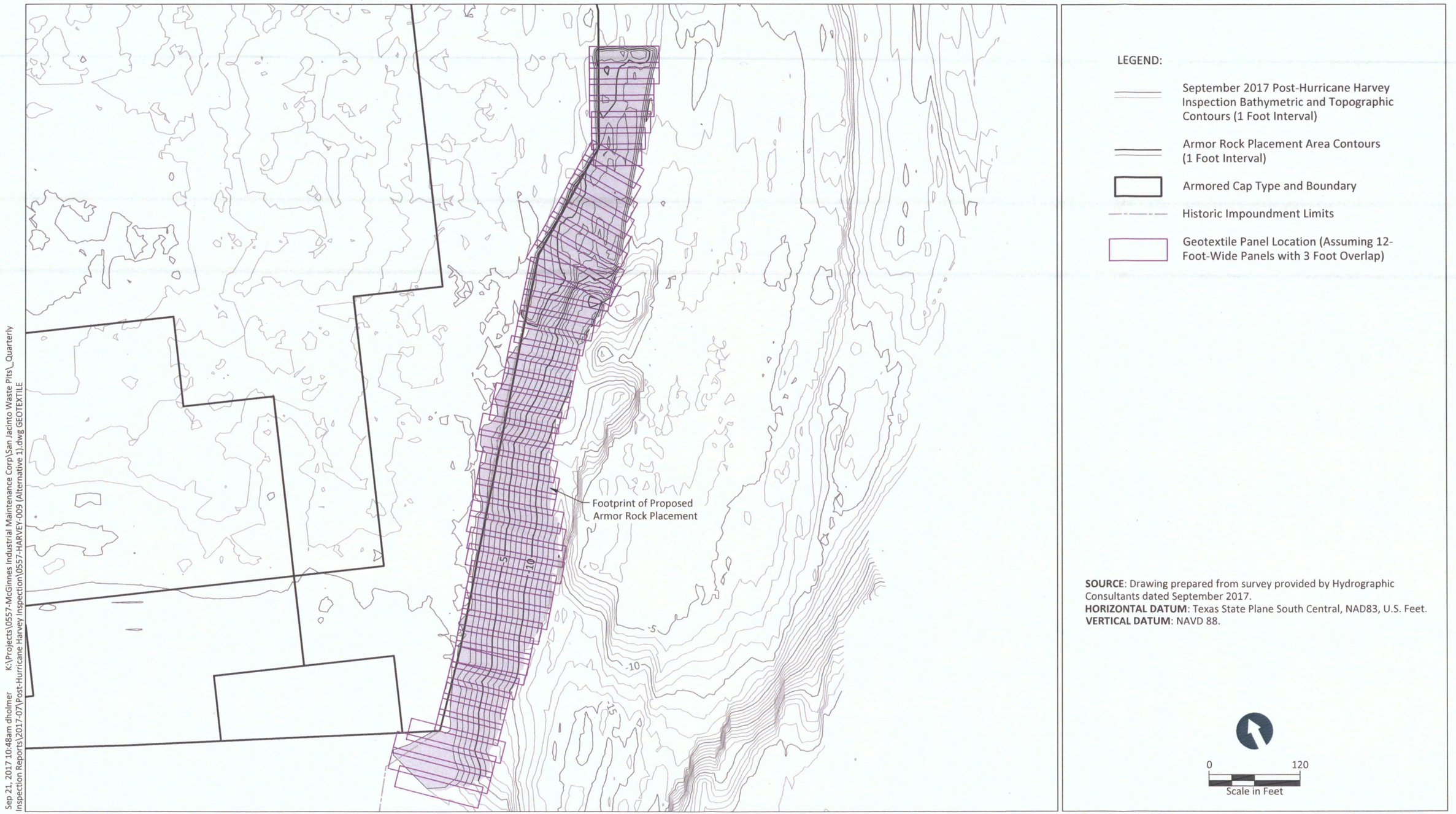
ANCHOR QEA

Figure 3
Cross Sections C-C' and D-D'
Post-Hurricane Harvey Work Plan (September 2017)
San Jacinto River Waste Pits Superfund Site



Sep 21, 2017 10:48am dholmer K:\Projects\0557-McGinnes Industrial Maintenance Corp\San Jacinto Waste Pits_Quarterly Inspection Reports\2017-07\Post-Hurricane Harvey Inspection\0557-HARVEY-009 (Alternative 1).dwg GEOTEXTILE

ANCHOR QEA

Figure 4
Plan View of Geotextile Panel Layout
Post-Hurricane Harvey Work Plan (September 2017)
San Jacinto River Waste Pits Superfund Site