


1201 Leopard St.
Corpus Christi, TX 78401

QUARTERLY PROJECT PERFORMANCE REPORT

Date: November 7, 2018

Reporting Period: Q3 CY18, July 1 – September 30, 2018

Recipient:  Corpus Christi Aquifer Storage and Recovery Conservation District
Larjai Francis, CCASRCD Project Manager
1201 Leopard Street
Corpus Christi, Texas 78401-2825

Executive Administrator

Designee: Matthew Webb, TWDB Project Manager

Subject: Research Contract between the Corpus Christi Aquifer Storage and Recovery Conservation District and the Texas Development Board, Contract No. 1600011956

Project: Corpus Christi ASR Feasibility Study

Work Completed:

Pursuant to Section II, Article II, subsection 3 of the Contract this progress report represents a summary of work completed during the 3rd Quarter 2018 for the Corpus Christi ASR Feasibility Study. Exhibit B of the TWDB contract includes the Scope of Work. Exhibit B contain six (6) distinct tasks with subtasks. An update to these tasks is provided overleaf and thus serves as the update mechanism for this contract. The drilling program began on 10/10/17 and activities have been proceeding according to the project plan, scope, and budget without any major or notable problems encountered this period. The team formally completed Task #2, Exploratory Drilling and is nearing completion of Task #3, Geochemical Analysis. The next major coordination in this project is the Field Scale Groundwater Modeling effort. A high-level project assessment was done after the Task#2 milestone was reached and to date the project expenditures have been within budget. The project team is looking to see if monies can be programed elsewhere within the project scope that will expand the current efforts and lead to producing greater functionality to the CCASRCD for Aquifer Storage Development finish out the Drilling program and prompted the collection of necessary deliverables per the bidding specs required from the Driller.

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Req\3QCY18\CCASRCD_ProgRep8_3QCY18

Project Financial Update

The Corpus Christi Aquifer Storage and Recovery Conservation District have incurred cumulative expenditures for the Project in the amount of \$1,177,375.01. The responsibility for this expenditure has been distributed between the District and TWDB and is reflected on the payment request form for this quarter.

Pictures

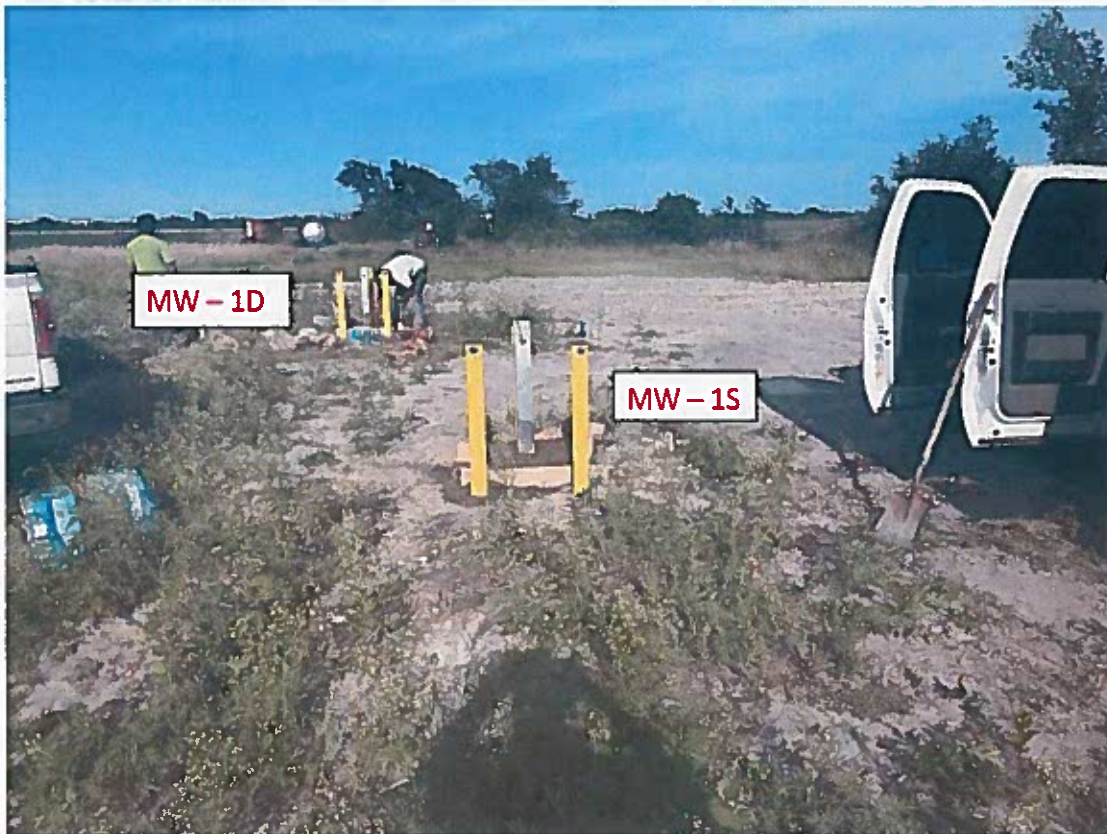


Figure 1. Showing completed Monitoring wells located at Site 1 (near the Corpus Christi International Airport)

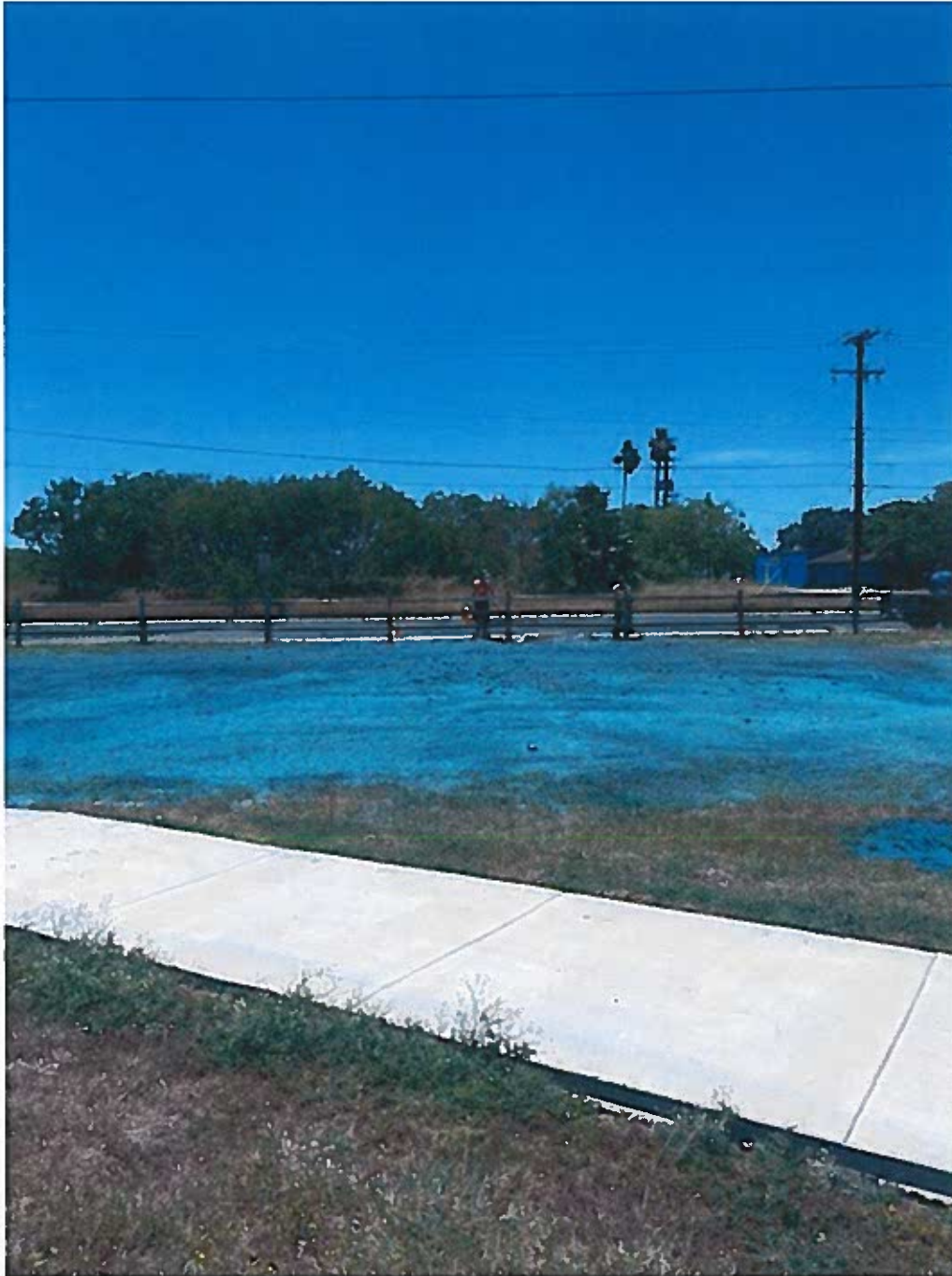


Figure 2. Showing site cleaning and reseeding efforts at Site 3 (Westhaven Park), The well head is flush mounted at this location



HDR Engineering, Inc.
Austin, TX 78741
Phone (512) 912-5100

Invoice

HDR Invoice No. 1200142510
Invoice Date 9/11/2018
Month Ending 8/4/2018

Corpus Christi ASR Feasibility Study - Invoice #20

Task 1 - Formulate Program

No Work This period.
Problems Encountered this period None

Task 2 - Exploratory Test Drilling Program

Additional follow-up with driller (and drillers subconsultant) on submittals Received and reviewed partial Felder submittals sent on July 17, July 20, July 25, and July 31.
Provided comments for clarification of driller provided information that differed from HDR geologist notes Received updated well logs and revised State Well forms for Site # 3 on Aug 2, 2018 which completed driller submittal.
Continued compiling data and preparing technical memorandum Completed draft for internal QC review.
Problems Encountered this period None

Task 3 - Geochemical Analysis

Received second draft from team partner with HDR comments addressed. Technical advisor QA/QC of new draft and preparation of follow-up comments.
Began and completed source water chemistry evaluation of source and groundwater to identify blending/mixing considerations that might occur during recharge/storage
Provided follow-up draft comments to team partner for addressing in geochemical TM.
Problems Encountered this period None

Task 4 - Field Scale Groundwater Model

Internal team meeting. Review of pumping parameter, preliminary information on aquifer layering, grid and extent.
Problems Encountered this period None

Task 5 - ASR Operating Policies

Review of Geocam final geophysical logs and interpretations
Problems Encountered this period None

Task 6 - TWDB Coordination, Draft/Final Deliverables and Meetings

Follow-up with TWDB and City Staff on progress reports/updates
Compilation of field program data to be included in final report
Problems Encountered this period None

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HDR Engineering, Inc.
Austin, TX 78741
Phone: (512) 912-5100

Invoice

HDR Invoice No.
Invoice Date
Month Ending

DRAFT
10/16/2018
9/1/2018

Corpus Christi ASR Feasibility Study - Invoice #21

Task 1 - Formulate Program

No Work this period.

Problems Encountered this period: None

Task 2 - Exploratory Test Drilling Program

Continued compiling data and preparing technical memorandum. Internal QC review.

Problems Encountered this period: None

Task 3 - Geochemical Analysis

Follow-up on source water chemistry evaluation of source and groundwater to identify blending/mixing considerations that might occur during recharge/storage.

Coordination with team partner on comments, source water chemistry relevance, and geotechnical reviewer for TM.

Problems Encountered this period: None

Task 4 - Field Scale Groundwater Model

Continued construction of local, field scale model. Sensitivity testing of pumping parameters, finalization of aquifer layering, grid size and extent.

Problems Encountered this period: None

Task 5 - ASR Operating Policies

No Work this Period.

Problems Encountered this period: None

Task 6 - TWDB Coordination, Draft/Final Deliverables and Meetings

Follow-up with TWDB, City Staff, and District on progress reports/updates.

Problems Encountered this period: None

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HDR Engineering, Inc.
Austin, TX 78741
Phone: (512) 912-5100

Invoice

HDR Invoice No.	1200154356
Invoice Date	11/7/2018
Month Ending	9/29/2018

Corpus Christi ASR Feasibility Study - Invoice #22

Task 1 - Formulate Program

No Work this period.
Problems Encountered this period: None

Task 2 - Exploratory Test Drilling Program

Completed draft technical memorandum and delivered to City for review and comment.
Problems Encountered this period: None

Task 3 - Geochemical Analysis

Continued source water chemistry evaluation of source and groundwater to identify blending/mixing considerations that might occur during recharge/storage.
Coordination with team partner on comments, Greenwood WWTP retest water quality results, source water chemistry relevance, and geotechnical reviewer for TM.
Received revised draft of geochemical analysis from team partner for final review.
Problems Encountered this period: None

Task 4 - Field Scale Groundwater Model

Continued construction of local, field scale model. Sensitivity testing of pumping parameters, finalization of aquifer layering, grid size and extent.
Peer review of model, independent review of layering.
Prepared example ASR operating scenario, identified rates and spacing and well spacing for simulations.
Problems Encountered this period: None

Task 5 - ASR Operating Policies

Evaluated modeled heads and performed wellbore-correction to revise single-well rates for constructability.
Problems Encountered this period: None

Task 6 - TWDB Coordination, Draft/Final Deliverables and Meetings

No Work this Period.
Problems Encountered this period: None

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11/7/18