February 3, 2021 Reference No. 11215702

Ms. Ashley Howard
Environmental Protection Agency Remedial Project Manager (SEDRA)
1201 Elm Street, Suite 500
Dallas, Texas 75270

Re: San Jacinto River Waste Pits Superfund Site, Harris County, Texas
Administrative Settlement Agreement and Order on Consent for Remedial Design (AOC), CERCLA Docket No. 06-02-18
Request for Northern Impoundment Schedule Extension

Dear Ms. Howard:

Pursuant to Paragraph 87 of the AOC and Section 6 of the Remedial Design Statement of Work (SOW), GHD Services Inc. (GHD), on behalf of International Paper Company (IP) and McGinnes Industrial Maintenance Corporation (MIMC; collectively referred to as the Respondents), requests that the United States Environmental Protection Agency (EPA) extend the deadline for submittal of the *Pre-Final 90% Remedial Design - Northern Impoundment* (Northern Impoundment 90% RD) for the San Jacinto River Waste Pits Superfund Site (Site). The Northern Impoundment 90% RD is currently due on April 22, 2021. The Respondents request a schedule extension of 270 days for the submittal of the Northern Impoundment 90% RD, until January 17, 2022.

As discussed in the Technical Working Group (TWG) meetings held on November 12, 2020, and December 15, 2020, there are several outstanding items that need to be completed in connection with the Northern Impoundment 90% RD and require an extension of the April 22, 2021, due date. This extension is necessary to allow time for (i) completion of supplemental design analytical and geotechnical sampling to better delineate the extent of the impacted material for removal and to better understand geotechnical conditions to support the current conceptual alignment and design of the best management practice (BMP) based on developments and input from the TWGs, and (ii) receipt of and the opportunity to evaluate downstream modeling data from the Coastal Water Authority (CWA) that is vitally important to checking the assumptions used for the RD.

Supplemental Design Investigation

Changes are necessary to the BMP proposed in the *Preliminary 30% Remedial Design - Northern Impoundment* (Northern Impoundment 30% RD), based on recent results of wastewater treatability testing. That testing concluded that the excavation methodology proposed for significant portions of the Northern Impoundment is not feasible. As explained below, a supplemental design investigation must be conducted in order to proceed with necessary changes to the BMP design.

During the February 19, 2020, TWG meeting, GHD explained that, based upon newly obtained Second Phase Pre-Design Investigation (PDI-2) data, material exceeding the 30 nanograms per kilogram (ng/kg) clean-up level extended to depths that were significantly deeper than previously

understood. GHD further explained that utilizing traditional excavation methodology in dry conditions (referred to as “Approach A” in the Northern Impoundment 30% RD) would not be feasible for the deeper areas within the Northern Impoundment, as excavating to the required depths could undermine the structural integrity of the BMP. Therefore, when the Northern Impoundment 30% RD was submitted, it included an “Approach B” as an alternative approach for excavation in areas of deeper waste depths. This approach included installing the BMP and then removing material exceeding the clean-up level through a column of water using barge-mounted excavation equipment. As described in the Northern Impoundment 30% RD, this approach requires that at the end of an excavation season, the water within the BMP would have to be recirculated through a treatment system in-situ until it met the Texas Surface Water Quality Standard (as demonstrated through compliance with the Minimum Level [ML]). In order to evaluate the effectiveness of this conceptual “Approach B Water Treatment” methodology, additional treatability testing was proposed. The proposed treatability testing was summarized in the *Additional Treatability Testing Notice*, submitted to the EPA on April 16, 2020. Comments were received from the EPA on May 5, 2020. These comments were addressed in the *Revised Additional Treatability Testing Notice* (Notice), submitted to the EPA on June 5, 2020, and approved by the EPA on June 11, 2020.

The additional treatability testing, as described in the Notice, included a bench-scale simulation of the recirculation process, including creation of representative river water, an excavation simulation, settling tests, and in-situ recirculation testing through a representative series of filters. The recirculation testing was conducted by the GHD Treatability Laboratory in Niagara Falls, New York. Following the excavation and settling steps, recirculation testing was initiated on November 7, 2020 (the start date was later than originally planned due to manufacturing delays for the necessary testing materials due to the COVID-19 Pandemic). According to calculations summarized in the Notice, the total suspended solids (TSS) levels were expected to drop to 2 milligrams per liter (mg/L) after 14 days of recirculation. Treatability data indicated that after 16 days of recirculation, the TSS had plateaued around 500 mg/L. Since dioxins bind to soil particles, TSS was used as an indicator parameter for dioxins levels in the water (a correlation that was further refined during the treatability testing). In late November 2020, the system was shut down to evaluate the data and system operations. After modifications were made to the mixing methodology, the recirculation testing was resumed for an additional 225 hours. Results from the additional testing were consistent with those obtained during the initial 16 days, with TSS levels never reaching levels below 500 mg/L.

As discussed during the December 15, 2020, TWG meeting, Approach B water treatment is infeasible for application during the RA based on the results of the recirculation testing. Since the water treatment for Approach B is infeasible, Approach B excavation methodology is also infeasible. As a result, the Respondents are working on a significant modification to the RD to focus on performing all excavation work “in the dry”. As was discussed during the February 2020 TWG meeting when Approach B was proposed, there are significant barriers and risks associated with excavating the deeper areas in dry conditions. Additional data will be required to evaluate the feasibility of excavating the deeper areas in the dry.

As discussed during the December 15, 2020, TWG meeting, the Respondents view it to be imperative to conduct an additional field investigation prior to the completion of the RD to better inform the modified RD and to fill data gaps in the delineation of the vertical extent of the material that must be excavated. Based on data collected during the first and second phases of the PDI, there are three locations where a clean bottom was never encountered during sampling. There are also data gaps in certain locations around the perimeter and in the interior of the Northern Impoundment where assumptions would have to be made to determine the target excavation elevations. These data gaps were less of a concern when Approach B was thought to be feasible. The additional field investigation as part of the supplemental design investigation will allow the Respondents to determine if the modified BMP design is sufficiently robust. It will also yield a more accurate estimate of the total volume of material for disposal, information that will aid in logistical planning, sequencing, and scheduling of the RA.

Given the uncertainties associated with the approach proposed in the Northern Impoundment 30% RD and the shift in RD methodology to focus on excavating the entire Northern Impoundment under dry conditions, the proposed BMP design and alignment have been adapted and optimized to the extent possible to address the change in design conditions. The current BMP design includes a double wall system with shallower embedment depths than the single cantilever wall proposed in the Northern Impoundment 30% RD. The double wall will need to be further offset from the area of excavation than had been previously described in the Northern Impoundment 30% RD in order to increase the structural stability of the BMP system. Prior investigations did not include collection of data regarding soil properties and stratigraphy in the new areas of potential wall construction. Given the modified alignment and shallower embedment depths of the BMP, it is essential to collect additional geotechnical data to better understand the soil properties and thickness of the shallow stratigraphy in locations closer to the new BMP alignment. With the change in excavation methodology, another risk that needs to be evaluated is the potential for hydraulic heave during the RA in the deeper excavation areas. GHD plans to install geotechnical borings as part of the supplemental design investigation to evaluate this risk, and to collect additional subsurface stratigraphy to better inform the new alignment of the BMP. The geotechnical evaluation will also include collection of hydraulic conductivity data for the material to be excavated to more accurately estimate the amount of infiltration water that will require management during the RA. This information was not needed when excavation in the wet (i.e., Approach B) was thought to be feasible, but is now necessary because excavation in all five cells will be conducted in the dry.

The details of the proposed supplemental design investigation will be included in a work plan expected to be submitted to the EPA in February 2021.

To plan and perform the supplemental design investigation and to incorporate the data from the investigation into the Northern Impoundment 90% RD, an additional 270 days beyond the current due date of April 22, 2021, will be required (assuming final approval of the work plan by the end of April 2021). The additional 270 days is required in light of the following:

- Assuming that the work plan is submitted to the EPA by February 19, 2021, the Respondents assume that they will have final approval of the work plan by the end of April 2021. That final approval would follow review and comments on the work plan by the EPA and other relevant stakeholders, after which

there would be an opportunity for the Respondents to respond to the comments and make any necessary revisions to the work plan, and a second EPA review and final approval of the work plan.

- Following work plan approval, the Respondents would need at least 45 days to finalize fieldwork preparations and begin the supplemental design investigation fieldwork in mid-June 2021.
- The supplemental design investigation fieldwork is anticipated to take approximately 75 days, plus an additional 30 days to receive validated analytical data - extending through September 2021.
- Following receipt of validated analytical data, the design team would need approximately 110 to 120 days to incorporate the new data into the Northern Impoundment 90% RD - requiring an extension of the submittal date for the Northern Impoundment 90% RD to January 17, 2022.

Hydraulic Modeling

As detailed in letter correspondence to the EPA, dated August 21, 2020, and in the Northern Impoundment 30% RD, and discussed in subsequent TWG meetings in November and December 2020, the CWA, which operates and maintains the Lake Houston control structure upriver of the Site, is currently in the planning and design stages of a project to expand the control structure. Once completed, the planned expansion will allow for the discharge of increased flow rates from Lake Houston and into the downstream San Jacinto River to allow for rapid decrease of water levels in Lake Houston in advance of storm events to prevent or reduce upstream flooding. The dam currently has two radial gates with a total capacity of 10,000 cubic feet per second (cfs) in addition to the spillway. The expansion project would include the addition of 10 gates, each with the capacity of 3,600 cfs, for an increase in discharge capacity of approximately 36,000 cfs.

The CWA is currently completing hydraulic modeling for the watershed both upstream and downstream of the control structure. GHD has requested that the CWA provide the results from this modeling effort. GHD had anticipated that the results (in the form of hydraulic modeling outputs) would be available at the end of November 2020; however, according to the latest communication with the CWA dated January 19, 2021, the CWA apparently received comments from the Harris County Flood Control District and the CWA modeling consultant is working to address them. Results are not expected to be made available to GHD until that review has been completed and any necessary model revisions have been made. It is unclear when the CWA modeling outputs will be available to GHD.

As detailed in the August 21, 2020, letter, a fundamental assumption discussed in the Northern Impoundment 30% RD in establishing the top elevation of the BMP was that historical river elevations can be used to predict river elevations during the RA. However, the planned CWA project has the potential to change the range of hydraulic conditions and river elevations that may be experienced at the Northern Impoundment. Those changed conditions could then require reassessment of the wall height and impact other aspects of the BMP design. They may also require reconsideration as to whether historical water levels remain a reasonable basis of design for the top elevation of the BMP. The analysis of the CWA modeling outputs, and the subsequent process of identifying and making any changes in the Northern Impoundment 90% RD required as a result, is anticipated to require a minimum of 160 days. That analysis

would occur concurrently with the supplemental design investigation. In order to have sufficient time to incorporate any BMP design changes as a result of the CWA model results, however, the CWA model in an acceptable format must be received by July 1, 2021.

The 160-day estimate is based on the following:

- Following receipt of CWA's modeling outputs, those outputs will need to be incorporated by GHD into a model to evaluate the top elevation of the BMP. Approximately 60 days would be required to incorporate the CWA outputs into the model and to run the model.
- An additional 30 days would then be required to evaluate whether the basis of design for the top elevation of the BMP is still adequate and whether the top elevation of the BMP needs to be adjusted.
- If the top elevation of the BMP needs to be adjusted, an additional 70 days, at a minimum, would then be required to modify the design.

Conclusion

In conclusion, and as detailed in the preceding sections, a number of significant issues must be addressed in order to develop the Northern Impoundment 90% RD and addressing them will require more time than the current schedule permits. Those issues include conducting a supplemental design investigation and evaluating the impact of CWA changes to the Lake Houston control structures on water levels at the Site.

Given these factors**,** the Respondents request a 270-day extension of the current due date for the Northern Impoundment 90% RD, (i.e., until January 17, 2022).

Should you have any questions regarding this submittal, please contact the undersigned at (225) 292-9007, Mr. Philip Slowiak of IP at (901) 419-3845, or Ms. Judy Armour of MIMC at (404) 915-8160.

Sincerely,

GHD

Charles W. Munce, P.E.

Janie T. Smith

JTS//jlf/2

cc: Philip Slowiak, IP
Judy Armour, MIMC
Brent Sasser, IP
Lauren Poulos, EPA
Katie Delbecq, Texas Commission on Environmental Quality