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August 1, 2017

Office of Conservation

AUG 07 2017

Environmental Division

Mr. Gary Snellgrove
Director-Environmental Division
Louisiana Department of Natural Resources Office of Conservation
Post Office Box 94275
Baton Rouge, Louisiana 70804-9275

RE: Landowner Comments with regards to

Site Status Update and Further Delineation Plan by Hydro-Environmental Technology, June 23, 2017

OC Legacy Project No. 023-009-001

Dear Mr. Snellgrove:

These comments are submitted on behalf of Ms. Nancy Blanchard in response to the "Site Status Update and Further Delineation" prepared by Hydro-Environmental Technology, Inc. (HET) and dated June 23, 2017. The issues noted in this submittal are not new issues, but have been stated previously in written submittals to the Office of Conservation. It should be noted that these comments are not to be considered the only comments relative to the June 23, 2017 HET Plan. The "Site Status" and the "Further Delineation Plan" cannot be fully evaluated at this time because the results of the Phase I were not included in the "site status" discussion and were not made available for review. Typically, a Phase II Plan is developed based on the results of the Phase I investigation. It is difficult, if not impossible, to fully evaluate the report of the status and the adequacy of future plans without the information developed during the Phase I.

Arabie Environmental is in concurrence with the Office of Conservation's directive to Tortuga that RECAP <u>cannot</u> be used to address groundwater and soils below 3 feet at this property since the landowner has not granted consent to do so. Office of Conservation correspondence has included this condition as prohibiting the use of RECAP on multiple occasions. The following quote is from a letter addressed to Charles Minyard from Mr. Daniel Henry on September 24, 2014:

"Please note since RECAP is used to address groundwater and soils below three feet for salt parameters as an exception to LAC 42:XIX. Subpart 1. Chapter 3 criteria, landowner consent will be necessary for the agency to grant the exception and issue a letter of no further action at this time."

As noted on several occasions previously, no landowner consent has been provided.

Throughout the referenced report, HET continues to refer to specific tests and procedures relative to RECAP. Arabie Environmental agrees with the directives of Office of Conservation in regards

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to the use of RECAP, and does not consider RECAP applicable, but is obligated to make comments about HET's use of RECAP. These comments regarding HET's proposed use of RECAP should in no way be construed that Arabie Environmental considers the use of RECAP appropriate.

HET previously planned to conduct an aquifer test on a domestic well located adjacent to Ms. Blanchard's house. As Arabie Environmental has communicated in previous submittals, the reasoning for use of that well for an aquifer test is not apparent and it is considered unsuitable for an aquifer test. Basically, the only information known about that well is where it is physically located. Previous correspondence to the Office of Conservation has pointed out the many deficiencies in an "aquifer test" utilizing that well. On page 1, of the referenced report, HET states that they were unable to conduct the aquifer test on the Blanchard well; however, there is no mention of attempting or planning to conduct a meaningful aquifer test. It is not clear why HET proposed an aquifer test on a well of unknown depth, unknown screen interval, unknown screen condition (i.e. corroded, collapsed), unknown silting, and unknown lithology at that location, yet have not proposed an aquifer test from a newly installed well of known condition.

It appears that HET thought an aquifer test was necessary to classify the aquifer for RECAP purposes; aquifer classification is not required under Order 29-B, because all aquifers are "protected" by Order 29-B. The shallow groundwater on the subject tract is an aquifer as defined by Order 29-B. If the purpose of the pump test was to aid in a RECAP classification of the shallow aquifer, that could be done by:

1) Conducting a pump test to determine if the shallow zone will yield sufficient water to be a domestic source.

A pump test performed by Arabie Environmental showed that the shallow zone could yield ample water to provide for a domestic supply, and HET's slug tests (which only provide estimates of well yield) revealed that a well completed in the shallow zone could yield 798 gallons per day, which is just 2 gallons less than the arbitrary 800 gallons per day established in RECAP. HET averaged the slug test results of multiple wells completed a various depths to "estimate" a yield far less than 800 gallons per day.

2) Evaluating the stratigraphy of the site, and determining if the shallow zone is in communication with the deeper zone (i.e. no effective clay barrier between the shallow zone and the deeper zone).

A careful evaluation of the stratigraphy in the eastern portion of the investigation area reveals a clear indication that a "shallow zone" and the Atchafalaya Aquifer (AA) are connected. HET did not present a cross-section of the eastern portion of the investigated area.

The contamination migration pathway from the shallow water bearing units to the Atchafalaya Aquifer has not been investigated. The landowner has presented evidence that the pathway is complete at the site. Some of that evidence is repeated below. RECAP states that "All current and potential exposure pathway shall be included in the (Conceptual Site Model) unless it is adequately demonstrated that an exposure pathway(s) is incomplete and the Department concurs

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with the finding. Exposure pathways that are determined to be incomplete shall be documented as incomplete." (LDEQ RECAP 2003, Section 2.7, page 40) RECAP goes on to stipulate what documentation "shall be included" to prove an incomplete groundwater pathway. Until that connection is eliminated it must be assumed to be present, both for the purposes of groundwater classification and the exposure assessment.

The recent submittal by HET separates monitor well screened intervals into two zones. Evaluation of the water-bearing units of these zones indicates that Zone A contains water-bearing strata from approximately 8 to 23 feet below ground surface (bgs) and Zone B has water-bearing strata from 26 feet bgs and greater. Multiple boring logs for Zone B wells indicate that they actually terminate in water-bearing strata. A review of the SONRIS database for registered water wells in the area of the site indicates that wells deeper than about 40 feet are considered screened in the "Atchafalaya Aquifer" and those shallower than 40 feet are considered to be completed in "Alluvial Aquifers, Undifferentiated". HET presents separate potentiometric maps for Zone A and Zone B wells in their recent submittal. Zone A wells are located west of the Zone B wells. According the HET, the two zones are hydraulically separate based on lithology. Additionally, though no well is located in close proximity to another, it is noteworthy that the groundwater elevations in Zone A are greater than those in Zone B: there is an apparent downward vertical hydraulic gradient. A downward vertical gradient from Zone A to Zone B would enhance downward vertical migration of contaminants.

Available logs for site borings and wells indicate that shallow water bearing units ("Alluvial Aquifers, Undifferentiated") are connected to the Atchafalaya Aquifer:

- The boring for well MW-1R encountered silt and sand deposits from less than 26.5 feet bgs to the total depth of the boring at 70 feet bgs, interrupted by two clay intervals less than 1.5 feet thick.
- The boring for well MW-5R encountered silt from less than 35 feet bgs to the total depth of the boring at 50 feet bgs, interrupted by two clay intervals.
- The original MW5 boring encountered water bearing stratum from 23.5 feet bgs to a total boring depth of 40 feet bgs.
- The driller's log of the rig supply well for the "B Blanchard #9" (SN225310) located on the eastern portion of the property indicates the boring encountered continuous sand from 60 feet bgs to the well's total depth in the Atchafalaya Aquifer.

These examples indicate that the HET-designated Zone B is directly connected to the Atchafalaya Aquifer. Note that the Zone A and Zone B are new designations, however, no sample analytical data from those "zones" has been provided.

The proposed additional boring locations are presented on HET's Figure 9. The small scale of this figure and the lack of reference to previous sample locations make it difficult to determine whether or not the proposed locations are appropriate. For example, proposed soil borings around the JAB Pit appear to be located too far from the pit and the proposed Delineation Well #14 is apparently side-gradient, rather than down-gradient from the pit. Either the proposed locations should be

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relocated or additional sample locations should be located down gradient and in reasonable proximity to the area of investigation.

HET continues to cast doubt on the reliability of data generated by previous sampling events. For example, on page 2, HET states "the laboratory analytical results by Shinteaux do not correspond to current constituent concentrations, thus raising serious questions as to the methods employed during sample collection and the reliability of the data, especially with regard to groundwater." HET offers no backup for that statement. HET does not cite any sample locations or sample data where recent data proves that old data is unreliable. This has been an on-going issue. In fact, in HET submittals to the Office of Conservation in 2015, that exact statement regarding the Shinteaux data was made and Office of Conservation responded that "proof" of those statements should be provided. Office of Conservation also directed HET that all data be included in the site evaluation. The sections of text below were taken from Office of Conservation correspondence dated October 12, 2016, addressed to Mr. Stover of HET.

- 2. Report pages 3-4, 1.3: Previous Investigations, Shinteaux analytical results It is stated that "the analyses performed do not always conform to the requirements of Statewide Order 29-B and RECAP, particularly regarding hydrocarbons." However, the Report does not include any specific information (proof) to support this statement. It is further stated that Shinteaux results "do not correspond to current constituent concentrations, thus raising serious questions as to the methods employed during sample collection and the reliability of the data, especially with regard to groundwater." The Report does not include any specific constituent/sample location comparison of Shinteaux results and any other laboratory results to support this statement. In the absence of specific and clearly objective, definitive proof to support the above statements, Shinteaux analytical results for soil and groundwater must be included in the RECAP evaluation and the areas where Shinteaux soil and groundwater results indicate that unresolved regulatory compliance issues remain on the property must be brought into compliance.
- 4. Report page 18, 4.0 Results of Investigation "Based on comparison of the Shinteaux data to the results of the quarterly sampling events... HET considers the more recently collected data to be representative of site conditions." In addition to Comment 2 above, the Report did not include a comparative analysis of Shinteaux data to quarterly sampling event data at respective sample locations to objectively support (prove) the statement.

HET has continued to claim that the old data is unreliable and has ignored Office of Conservation's request to provide "proof" of that claim.

The proposed Phase II plan **does not address all parameters** of concern at all known source areas. One example is at the JAB pit. Figure 9 of the June 2017 Phase II Plan depicts proposed sample locations and the planned analytical parameters. On that figure, it is indicated that at Borings 6, 7, and 8, in the area of the JAB Pit only Oil and Grease will be analyzed. All parameters of concern should be analyzed. In the October 12, 2016 letter from Office of Conservation to Mr. Stover, Item #11 states: "HET should submit a work plan detailing specifically how the **JAB Pit area soil will be fully delineated vertically and horizontally for all COC's."** (Emphasis added).

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These comments should be considered by Office of Conservation as the Phase I and Phase II results become available. They are provided on behalf of the landowner to assure that the investigation and remediation is accomplished in accordance with the directives of the Office of Conservation to Tortuga and HET, and in accordance with the environmental protection regulations. Additional comments may be made as the investigation progresses and additional information is made available.

Sincerely,

Austin R. Arabie

Principal

Duane Piranio, P.G.

Louisiana Professional Geoscientist No.

cc:

Nancy Blanchard, Park Plantation, LLC Brian W. Arabie, Arabie Law Firm, LLC Jonathan Rice, Office of Conservation

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