Dear Curt Campbell,

We have reviewed the plans for the referenced permit application. The project proposes the use of extended detention, bioretention, and vegetated filter strip, to meet the Performance Standards established by LCRA's Highland Lakes Watershed Ordinance. We have the following comments regarding the plans and application:

1. Public Notice
   a. Mailed Notice: Provide a statement signed by the applicant certifying that each owner has been sent a notice of the application by first class mail.

2. Financial Security
   a. Changes to the Erosion and Sedimentation Control Plan have been requested. Please revise the cost estimate to include these changes. Once the cost estimate is approved, a letter of credit or other form of financial security acceptable to LCRA must be submitted prior to issuance of a permit. Letter of Credit shall have a minimum expiration of 3 years or shall renew automatically until LCRA determines that the project has achieved final stabilization. Contact this reviewer for a template for the letter of credit.

3. General Requirements
   a. Include a slope map at the same scale as the water quality management plan, depicting slope categories of 0-5%, 5-20%, and over 20%.
   b. Provide design information for the access roads within the property.
   c. Please separate the construction plans from the report and create a stand-alone construction plan set.
   d. Once the dredging operation is complete, will the plant be removed from the site? If so, please provide a plan to demobilize and restore the site.
   e. Label the drainage area sizes in acres where shown on the plans.
   f. Provide drainage calculations for all drainage areas shown on the plan.

4. Erosion/Sediment Control
   a. Please provide revegetation plans and include these costs in the Letter of Credit. A restoration plan for all disturbed areas on the site that includes seed, sod and mulch type and rate of application; application technique; watering and fertilization schedule; and criteria for acceptance of revegetation is required.
b. In the sequence of construction specify all temporary BMPs (silt fence, rock berm, etc.) need to be installed before any construction activities can begin. Silt fence needs to be in place before earthen berms are constructed.

c. Please depict the Limits of Construction line, location of all access roads, haul roads, equipment storage areas, and spoil and topsoil stockpile areas on the temporary erosion control plan.

d. Provide sizing calculations for the proposed channel that drains to the extended detention basin. Include flow, normal depth, and velocity of flow in the channel. If erosive velocities are expected provide additional erosion controls for mitigation.

e. Provide grading and details for the proposed earthen berms throughout the project.

f. Provide sizing and design information for the proposed culvert under the access road.

g. Include the sequence of construction on the Erosion Control Plans.

h. Install rock berms rather than silt fence at all locations where concentrated flows are to be encountered, pond outfalls, culvert outfalls, etc.

i. Include the following note on the plans: Buffer zones shall remain undisturbed except for crossings shown on these plans. Refer to creek crossing details and notes for construction in creeks.

j. Include notes for construction within creeks per Appendix 2.7.3 of the Technical Manual.

k. The seed mixture quantity in the Engineer’s Erosion Control Cost Estimate needs to reflect the entire limits of construction. Revise the quantity to reflect this.

l. The fee for the water truck rental does not account for all the watering requirements as outlined in the water application assumptions “watering occurs every two weeks for the first three months, followed by once monthly until the vegetation is established, approximately six months total”.

m. On the Erosion and Sediment Control plans provide existing topo for the entire limits of the drainage areas.

n. The bioretention facility may not be used for construction phase runoff since it utilizes infiltration. Refer to HLWO Sec. 4.2.1 General Design Guidelines item (5).

5. Water Quality Management

a. Please identify proposed vegetated buffer areas and mechanism for achieving sheet flow through buffer areas.

b. Verify that the sediment forebay volume is equal or greater than 25% of the total water quality volume.

c. Provide details/specifications for the gabion divider separating stage 1 and 2 of the extended detention pond.

d. Provide calculations for apron and rock size for all proposed rock rip rap. Include installation details for rip rap.

e. Specify the soil profile for the extended detention basin. Separate the notes to specify what soil and vegetation requirements are meant for each pond.

f. Natural vegetated filter strips require a slope of less than 12%, revise grading to be less than 12% maximum.
g. Specify in the plans that the natural vegetated filter strips require an average soil depth of 4" and that sheet flow will be achieved prior to entering the filter strip.

h. The pond outfalls will need to be reduced back to sheet flow before discharging into the buffer zones.

i. Label existing contours on the pond detail sheets.

j. Show the location of the level spreaders on the plans, provide grading information and design details for all level spreaders proposed.

k. Provide sizing information for the proposed settling ponds. Show that they are sized to not overflow during a 100-yr 24-hr storm event.

l. What size are the drain-pipes connecting the settling ponds? How will these drains be maintained to prevent clogging with sediment?

m. The water quality depth for the bioretention pond is listed as 854, the volume of the pond needs to be based on the storage above the filter media.

6. Maintenance Plan

   a. Separate the Maintenance Plan from the Engineering Report and provide as a stand-alone document.

7. Land Ownership

   a. Please provide an authorization letter, copy of land lease, deed, and other forms of proof of ownership for all project aspects including ingress/egress easements and sand processing plant operations. Please provide supporting maps to illustrate land ownership/leases.

If you have any questions about these comments, please call me at (512) 578-7633, or by e-mail at blake.allison@lcra.org.

Additional information addressing these comments or revised application materials must be provided within 30 calendar days from the date of this letter. An extension of time to provide information may be requested, however the cumulative amount of time to provide additional information may not exceed 6 months from the date that the application for permit was filed.

Thank you,

Blake Allison
Water Quality Protection