Pct 2

Kingdom Estates Phase 2

Appendix A

SUBDIVISION APPLICATION CHECKLIST

The following tasks must be completed by the developer prior to filing any application for subdivision approval:

- ✓ Meet with the Precinct Commissioner and Development Officer at least 15 days prior to the date of filing the application of the subdivision property, to visually inspect the property, review the developer's intentions, establish any special requirements for the plat application, and to discuss the application process.
- ✓ Confirm whether the planned subdivision will be classified as (First) or Second Tier.
- ✓ Check the proposed subdivision name for conflicts or similarly named subdivision that is not a subsequent phase of an existing subdivision.

The following items must be included in any plat application for approval of a First Tier subdivision:

- ✓ A plat of the proposed subdivision in compliance with these regulations.
- ✓ A written, affirmative acknowledgement of the requirements in Section 1.2.
- ✓ Five (5) copies of the plat; 1 Mylar and 4 regular paper copies.
- ✓ A digital map or a certificate regarding the availability of a digital map.
- ✓ A certificate from the Upper Trinity Groundwater Conservation District that the proposed subdivision will have adequate water availability.
- ✓ A survey of the proposed subdivision in compliance with these regulations.
- ✓ A certificate from the surveyor who prepared the plat and survey in substantially the form as Appendix E.
- ✓ A description by the developer of the manner and means of providing drinking water, sewerage, roads, electricity, and drainage structures.
- ✓ All engineering specifications, drawings, and plans for infrastructure to be constructed comprising a plat application in compliance with these regulations.
- ✓ A certificate from each engineer confirming compliance of their specifications, plans, and drawings, in substantially the form as Appendix F.

N/A A certificate from NORTEX confirming the road names or numbers reserved for roads laid out in the subdivision. Existing road

____ Tax certificates confirming that no property taxes are due and unpaid for the subdivision.

✓ A certificate from the developer confirming that approval of the plat application and filing of the plat does not mean that the County will be responsible for maintenance of subdivision roads and streets.

✓ If water, sewerage, and electricity are to be provided by a public utility, the developer must submit an executed public utility certificate in substantially the form as Appendix D.

✓ If water is to be provided by private well, a Disclosure Statement shall be provided to the buyer prior to closing disclosing the nature of provision of water, together with certification of water availability and quality.

✓ If OSSF is included in the plat application, a certificate from the Montague County OSSF Inspector or Development Officer stating that the subdivision plans comply with all applicable TCEQ rules, including housing density requirements or lot frontage, street width and all-weather capacity to handle emergency vehicles.

N/A If fire hydrants or filler plugs are included in a plat application, a certificate from the public utility serving the subdivision to confirm sufficient water capacity is available to operate the fire hydrants or filler plugs.

✓ All fees due to the County for the filing of an application must be paid to the County Clerk contemporaneously with the submission of the application.

The following items must be included in any application for approval of a Second Tier subdivision:

N/A A plat of the subdivision showing the area/acreage of each lot or tract. Lots must have a minimum of sixty (60') feet of frontage to the adjoining street.

N/A Certificates from the developer confirming the following:

____ Availability of water and sewage service.

____ Compliance with set-back lines.

____ Disclosure and Dedication of all necessary utility easements.

—}— Confirming the installation of culverts in compliance with the County ordinance on culverts.

N/A If OSSF is proposed for the Second Tier subdivision, a certificate from the Montague County OSSF Inspector or Development Officer stating that the subdivision plans comply with all applicable TCEQ rules, including housing density requirements, street width and all-weather capacity to handle emergency vehicles.

N/A A survey that shows sufficient topographic information adequate to demonstrate that the proposed subdivision will adequately drain and that any proposed development will not alter the natural flow of water to adjoining properties.

N/A All fees due to the County for the filing of an application must be paid to the County Clerk contemporaneously with the submission of the application.

After an application is approved, the developer must:

✓ File a plat of the proposed subdivision in compliance with these regulations.

N/A Meet with the Precinct Commissioner to review all materials used in constructing roads in the subdivision.

N/A Ensure that the work described in the plat application is completed in a good and workmanlike manner, in accordance with these regulations, the plat application, and any conditions of the order approving the application.

N/A Advise the Precinct Commissioner of the status of construction prior to expiration of any construction deadline.

✓ All fees due to the County for an approved application must be paid to the County Clerk no later than ten (10) days after the approval of the application.

N/A Submit proof of any required financial security to the Precinct Commissioner no later than thirty (30) days after the approval of the application.

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December 12th, 2024

via email: co.judge@co.montague.tx.us

Kevin Benton – Montague County Judge
Montague County Commissioners Court
11339 TX-59
Montague, TX 76251

RE: Groundwater Availability Certification Report – Kingdom Estates

Judge Benton and Members of the Court,

Montague County (the "County"), as authorized by Section 232.0032 of the Texas Local Government Code, requires applicants seeking to plat certain tracts of land for which groundwater under that land is intended to be the source of supply to provide a statement prepared by a geoscientist licensed to practice in Texas or an engineer licensed to practice in Texas certifying that adequate groundwater is available for the subdivision in accordance and in compliance with the rules of the Texas Commission on Environmental Quality (TCEQ) set forth in Title 30, Texas Administrative Code, Chapter 230 (the "Groundwater Availability Certification" or "GAC").

In order to ensure compliance with the law and to facilitate cooperation between the County and the Upper Trinity Groundwater Conservation District ("the District") in instances where a GAC is required for a proposed subdivision of a tract of land and to ensure that, prior to receiving an approved plat from the County, such an applicant certifies adequate groundwater availability, the County and the District have entered into an interlocal agreement whereby the District reviews the GAC of the applicant and provides a report of its review to the County with certain recommendations. As set forth in the interlocal agreement, this report sets forth the opinions and recommendations of the District through its General Manager and staff to the County for the County's consideration in making a decision on the plat application.

This transmittal letter includes summaries of both the results submitted as part of the Plat Applicant's certification as well as the District's recommendations related to the Groundwater Certification Statement related to the proposed Kingdom Estates Subdivision. Please note that the District's recommendations are non-binding suggestions and are meant to supplement the information provided to aid the County's decision-making process.

Additionally, all District recommendations are based on the best available science and other relevant data available to the District.

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Summary of the Certification Statement:

The plat applicant's pump test data and subsequent calculations produced the following projections for the upper portion of the Antlers Formation of the Trinity Aquifer, which is proposed to serve the projected community:

- The applicant projected the following impacts at the test well, completed to 400 feet below surface (this analysis assumes no other pumping wells).
    - 10–year estimated drawdown of 2.14 feet.
        - Static water level after 10 years –114.36 feet below ground surface
    - 30–year estimated drawdown of 2.25 feet.
        - Static water level after 30 years – 114.47 feet below ground surface
- Modeling conducted by the District produced an anticipated drawdown of 2.4 ft. at the test well site over 10 years and 2.5 ft. over 30 years (assuming no additional wells).
- The modeled 10–year cone of depression for the test well was 40,000 ft.
- The modeled 30-year cone of depression for the test well was 69,282 ft.
- The plat applicant calculated a well efficiency of 189%, however the engineer indicated an efficiency of 100% on the form. District Staff cannot identify why the applicant's engineer identified a value different from what he calculated on the stamped form.
    - The accepted established threshold for well efficiency is approximately 65-70%.
    - This value is impacted by the applicant's projected water demand, aquifer parameters, and well construction.
- The applicant did complete the entire water quality portion of the test.
    - The results that were collected all occurred within the threshold of primary water standards established by the EPA and regulated by the TCEQ.
    - The applicant's results indicated the presences of Iron (0.330 mg/L) and Manganese (0.295 mg/L), above EPA secondary standards.
        - While the potential health impacts of these constituents are outlined in Appendix C of the accompanying report, they can cause potential issues with wellbore integrity (clear screens) and pump equipment if not addressed with filtration and regular maintenance.
        - Future landowners should consider investing in full panel water analysis prior to human consumption.
- The applicant provided most of the required maps, graphs, data, formulas, and variables for assessing the potential of well interference on the property and how it would impact anticipated drawdown levels at 10 years and 30 years.
- The Certification Statement recommends a minimum spacing of 150 ft. between water wells.

- The Certification Statement recommends a produced well yield rate of 8 GPM, which is supported by submitted documentation on anticipated drawdown values at higher volumes.

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Below are some concerns identified by District Staff.

- The applicant's team completed and developed the observation well in a way in which District staff cannot confirm what type of aquifer is present. Because of the construction of the water wells, it is difficult to determine the confinement status of the well. The well was filter packed from 20 feet to 400 feet below the surface. The large span of filter pack would allow water from any saturated shallower sands to percolate down into the well, which makes it difficult to determine if the water level is a result of confining pressure or static water level from the upper portion of the well. Additionally, the water well co-mingles the Trinity group of aquifers with the Cross Timbers aquifer. This violates the construction standards required by the Texas Department of Licensing and Regulation (TDLR). The District strongly recommends all other wells within the subdivision to be completed in a manner consistent with the standards set forth by TDLR.

- The applicant's engineer utilized a storativity value in FWD:SOLV (6.968e-5) that does not appear in other produced calculations or the submitted 230 form (S=4.99e-5). While this may seem a small issue, storativity is one of the three main aquifer parameters that impact projections. Utilizing a larger value or smaller value than what was calculated from field data causes the projections to be less accurate, and thus less useful. This value was also utilized in the well efficiency calculations mentioned below.

- The applicant's engineer's well efficiency is higher than what district staff think is occurring on the proposed subdivision. The applicant's calculations of 189% were then recorded as 100% on the 230 form. Based on the applicant's calculations, the storativity value, maybe combined with a lower Transmissivity than what is frequently observed from pump test data behavior, all influenced the projected drawdown to be further from field results.

District Recommendations:

The water wells used in the study were completed to a depth approximately 400 feet below surface, into the Cisco portion of the Cross Timbers group of aquifers. The Certification Statement addresses only the Cisco portion of the Cross Timbers group at the project location.

The following recommendations are based on utilizing the Cross Timbers as the source of water for the proposed subdivision.

Based on the data provided in the Certification Statement, other relevant data, and modeled simulation results, the District recommends a minimum spacing requirement of 150 ft. between water wells, however landowners should consider greater spacing between water wells. This is based on results from the actual aquifer test performed for the project. During that test, the applicant drilled two new wells on the property, located approximately 300 feet from the

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pumping well; during the test it was clearly demonstrated that the extent of pumping impact was seen in the observation well (see results discussed earlier in the report). During the 24-hour pump test, water levels in the observation well fell 28.8 feet, however fluctuations of level readings inconsistent with the pumping test well activity were observed, calling into question the accuracy and precision of the dataset.

In agreement with the recommendation on the Certification Statement, and in order to minimize the immediate impact of any new well, the District concurs with the applicant and recommends a maximum production capacity of 8 gallons per minute for each well within the proposed subdivision. It is unclear if this could be enforced, either legally or logistically, but it might be worth considering a requirement to place a statement on the face of the plat identifying this recommendation. Realistically, all wells drilled in the proposed subdivision will likely be completed in such a way that they produce the maximum flow rate possible, generally up to 17.36 GPM.

The impacts of the proposed pumping are not only dependent upon the flow rate of the water wells but also the projected water demands of the landowners. The District highly encourages landowners to utilize conservation methods to minimize the pumping impacts within the subdivision as outlined in section 5.4 of the report.

Ultimately, it is our determination that the Certification Statement provided by the plat applicant generally conforms with the requirements set forth in Title 30, Texas Administrative Code, Chapter 230. In addition, it is also our opinion that the findings presented in the Certification Statement are within reason and any shortcomings have been identified in the accompanying report.

Accompanying this letter please find UTGCD Report 24-013 which provides further information and details related to this project. Please feel free to contact me at doug@uppertrinitygcd.com or (817) 523-5200 with any questions.

Thank you,

Doug Shaw
General Manager