



REPLY TO
ATTENTION OF:
Regulatory Branch

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090



SUBJECT: Permit Application Number NAN-2010-01235
By ABD Fishkill, LCC (Summit Woods)

FEB 01 2011

Mark A. Day
M. A. Day Engineering, PC
3 Van Wyck Lane Suite 2
Wappingers Falls, NY 12590

Dear Mr. Day:

We have reviewed your letter, dated December 10, 2010, and the supporting documentation related to the above referenced application. During our review of this project pursuant to Section 7(a) (2) of the Endangered Species Act of 1973, the U.S. Fish and Wildlife Service has requested additional information in order to complete their consultation. Specifically, the following comments will need to be addressed before the processing of your application may proceed.

- 1) Identify the status of the project review by the state and whether any authorizations have been issued by NYSDEC.
- 2) Provide a figure which illustrates the distribution lines from the wells to homes.
- 3) Provide a figure which illustrates the wastewater discharge points.
- 4) Indicate who will own/manage the wetland and buffer. Will these areas be protected under a conservation easement or deed restriction?
- 5) In a letter, dated April 11, 2008, from Kleinfelder (copy attached) there is reference to a Homeowners Association education and stewardship program. The U.S. FWS is interested in management of the wetland (on and off-site). As stated within this letter, natural vegetative succession and invasive species are already degrading the habitat for bog turtles and there are management options to increase suitability.
 - a) What will this program entail?
 - b) Provide a management plan for the wetland.
 - c) Identify the limitations on activities within the wetland buffer areas which will be required by the Homeowners Association.
- 6) In your letter dated December 10, 2010, there is a discussion on physical barriers on each lot. Please provide details of what these will be, timing of their installation, maintenance, etc.
- 7) While most of the lots have been placed outside of wetland and buffer areas, U.S. FWS recommends project plan changes which will remove all parts of the lots out of these areas.
- 8) Construction - measures to avoid and minimize impacts. U.S. FWS has the following standard recommendations that their office has requested to be incorporated into the project.

Conduct pre-construction survey for bog turtles (using qualified bog turtle surveyor) to ensure

there are no turtles in the work area. Employ silt fences around construction/soil disturbance activities within known or assumed bog turtle wetlands. The silt fencing should completely isolate the work area from the remainder of the wetland to ensure bog turtles cannot enter the work area, and to ensure silt does not enter un-disturbed parts of the wetland. Ensure soil is level with grade and pressed against the inside and outside of the silt fence, so there is no potential for turtles to approach the fence and fall into a trench on either side of the fence. Inspect silt fences each morning prior to work to ensure there are no breaches in the fence. Repair any breaches immediately, and do not begin work until they are repaired. If there is a breach in the silt fence during the bog turtle active season (April 1 to September 30), conduct another pre-construction bog turtle survey within the fenced work area prior to re-starting work activities. When work activities are finished and the site is stabilized, remove all silt fencing from the wetland and fill in any trenches or furrows to grade.

- 9) In your letter, dated December 10, 2010, the discussion of the storm-water basin design states that the applicant has agreed to prepare a plan that exceeds current EPA water quality standards.
 - a) Has NYSDEC approved the storm-water plan?
 - b) If so, does the approved plan include the design which exceeds the EPA standards?
- 10) What is the proposed timeline for construction phases?
- 11) The drawing titled Vegetative Cover which was attached to the Kleinfelder letter, dated April 11, 2008, states that 10.5-acres of trees will be removed as part of this project. As the version provided is black and white, it is difficult to determine which shaped area refers to the tree clearing locations. Please provide clarification to the approximate acreage and location of project related tree removal.

As soon as you provide the above requested information, we will resume processing of your application. Please note that in order for us to continue processing your application you must submit the above requested information to this office within 30 days of the above referenced date. If we do not receive the requested information within 30 days, we will assume that you no longer wish to pursue this action and our file will be administratively closed in accordance with Title 33 of the Code of Federal Regulations Part 325.2(d)(5).

If you have any questions, please contact the undersigned at (917) 790-8512.

Sincerely,



Stephan Ryba
Project Manager
Western Permits Section

Enclosures

KLEINFELDER

April 11, 2008

David A. Stilwell
Field Supervisor
United States Fish and Wildlife Service
3817 Luker Road
Cortland, New York 13045

Re: *Summit Woods Project, East Fishkill, NY*
Project # 92364

Dear Mr. Stilwell:

I am writing to respond to your letter dated August 16, 2007 to David Everett, Esq. of Whiteman Osterman & Hanna, LLP which details the USFWS's concerns regarding the potential impacts from the Summit Woods project on bog turtles (*Clemmys muhlenbergii*), a federally-protected species. In your letter, you concluded that the proposed project "will likely cause a take of this species." Your conclusion was based on the information available to you at that time. However, your letter noted that "additional information regarding the proposed project ... may be forthcoming [and you would] consider any newly provided information and revisit your analysis of effects at that time."

The primary purpose of our letter is to provide you with some additional information and clarifications on several issues. We would ask you to review this new information (as well as the information previously submitted to your office) and revisit your analysis. After reviewing all of this material, it is our professional opinion, as discussed below, that this project will not cause a "take" of a bog turtle.

There were several overlying themes to your August 16th letter, which included the following general categories: presence of bog turtles within the nearby wetland, habitat quality, natural plant succession and invasive species, predation and human activity, and water quality. Your letter also asked for additional information on the project's potential impact on Indiana Bat, another federally-protected species. Our comments regarding each of these categories are as follows:

Presence of Bog Turtles Within Nearby NYSDEC Wetland HJ-49

As discussed below, bog turtles are not present on the project site. As you know, a portion of the project site contains potentially suitable bog turtle habitat located in NYSDEC Wetland HJ-49. However, this habitat is very small, only 3.5 acres in size, and is surrounded by unsuitable habitat (red maple swamp). The location of this potential onsite habitat is depicted in Figure 1. During the spring of 2006, Ecological Solutions conducted a Phase II bog turtle survey in this potential habitat in

accordance with established survey protocols. No bog turtles (or their presence) were detected.¹ Subsequent contacts with the NYSDEC and USFWS revealed that Dr. James Utter, a professor at SUNY-Purchase, had located bog turtles in a limited portion of Wetland HJ-49 located a distance from the project site. Over the last four years, Dr. Utter has studied the activities of 2 – 6 turtles in this off-site habitat.² These turtles are located in extremely close proximity (within 100 feet or less) to the backyard of about a half-dozen homes located along Hosner Mountain Road.

After reviewing the information provided by Dr. Utter³ and aerial mapping as well as contacting Mr. Jason Tesauro, a biologist who assisted Dr. Utter with his field studies, we determined that the offsite bog turtle population is located: (1) approximately 0.43 mile from the southwestern boundary of the project site; and (2) approximately 0.68 mile from the closest suitable bog turtle habitat on the project site. Figure 1 shows the offsite bog turtle habitat in relation to the project site and the potential onsite habitat. The distance (0.66 mile) between the onsite habitat and the offsite bog turtle population is greater than the average documented straight-line movements (i.e., 0.5 mile) for bog turtles in New York State (Stilwell, 2007). Therefore, existing data does not support the supposition that bog turtles from the offsite population would move to the onsite wetland, especially since the intervening habitat is not suitable for the bog turtles.

It is well documented that bog turtles have limited travel ranges in New York State. For example, based on the citations in your letter, straight line movements of bog turtles in New York range from 125 meters (0.08 mile) to 800 meters (0.5 mile). However, most net movements were less than 100 meters.⁴ As noted in your letter, bog turtles in the offsite population in Wetland HJ-49 have been observed moving up to 300 meters (.19 mile) in straight-line distances. These movements were based on tracking studies conducted by Dr. Utter over a three-year period (2004-2006) in the offsite wetland.

As previously mentioned, the closest project-site boundary is approximately 0.43 mile away from the offsite bog turtle population. This distance is very close to the upper limit of documented straight line movements for bog turtles in New York and well below the documented movements of bog turtles of the known offsite population. Furthermore, the approximate distance to the onsite suitable bog turtle habitat is 0.68 mile, which exceeds the distance of bog turtle movements (0.5 mile) documented in the State. As most bog turtle movements are less than 100 meters and the suitable habitat located onsite is at a distance greater than bog turtle travel distances, it can be concluded that bog turtles are not likely to travel to the habitat located onsite and, in fact, that habitat is likely beyond the migratory limit of this species.

Based on the foregoing, bog turtles are not present in the potential habitat on the project site (which was confirmed by the Phase II Survey) and are not present in the areas to be developed by

¹ A Phase II Bog Turtle Survey Report was prepared by Ecological Solutions in August 2006 and subsequently submitted to USFWS and NYSDEC.

² Based on your letter, it is our understanding that Dr. Utter conducted telemetry studies on these turtles to determine their movements from 2004-2006. However, none of this information was provided to us by Dr. Utter or NYSDEC. From your letter, it appears that none of these turtles were tracked onto or near the project site.

³ It should be noted that we had difficulty in obtaining information from Dr. Utter regarding his studies of the bog turtles in Wetland HJ-49. Over the last six months we had asked NYSDEC numerous times to obtain this information from Dr. Utter under his NYSDEC Collectors Permit. Dr. Utter's significant delays in providing us with information in turn significantly delayed our response to your August 16th letter.

⁴ Carter et. al. (2000) also reported in Virginia that 75 percent of all net movements were less than 20 meters, only 2% were greater than 100 meters, and large-scale movements between wetlands were infrequent.

the project, which does not contain any suitable habitat and is over 0.5 mile from the known turtle population.

Habitat Quality

The bog-turtle habitat in Wetland HJ-49, both onsite and offsite, is undergoing natural succession from open-canopy fens to close-canopied red maple swamps. In fact, the vast majority of the wetland surrounding the bog turtle habitat is already a red-maple swamp. It should be emphasized that if the wetland is left in its current state and natural succession occurs, the limited areas of suitable bog turtle habitat located onsite and offsite will continue its natural progression to a close-canopied swamp, thus eliminating the habitat. This is already occurring as red-maple saplings have been observed in several of the open canopy areas. Moreover, without any habitat alterations (i.e., fire, beaver activities, or farming activities), this natural succession will continue and the limited bog turtle habitat will be lost, both onsite and offsite. The NYSDEC states that "as sites deteriorate, bog turtles normally move out of their old sites to new areas where fire, beavers, agriculture, or other causes have created an open wet meadow type habitat."⁵ None of these activities are occurring onsite or are planned onsite.⁶ Therefore, it is expected that the bog turtles present within the offsite habitat will naturally leave that area as natural succession occurs. It should be noted that the project will not result in any direct habitat loss.

In your letter, it states that bog turtles may be currently using the onsite habitat;⁷ may have used it in the past; or may use it in the future. However, this is contrary to the evidence compiled to date. The Phase II Bog Turtle Survey indicated that no turtles (or evidence of turtles) were present onsite. While a portion of the onsite wetland may provide suitable habitat now, it contains only 3.5 acres of fen habitat surrounded by a wetland containing approximately 70 acres of mostly unsuitable habitat. The remainder of the wetland is either partially farmed or forested with a dense tree canopy and is not suitable for bog turtles. The small area of onsite habitat has only remained suitable for bog turtles because it is isolated within the larger wetland and buffered from the current farming activities. As the onsite habitat undergoes natural succession, it will not provide suitable bog turtle habitat in the future.

It is also our understanding from contacting various researchers who have been in the field with Dr. Utter that the offsite habitat is in poor condition because it contains a high degree of invasive plant species. As such, the continued existence of bog turtles in that area is also questionable.

In addition, Wetland HJ-49 is already geographically isolated as it is completely surrounded by heavily traveled highways. New York State Route 52 is located to the north and east, Interstate 84 is located to the south, and the Taconic State Parkway borders the western portion of the wetland. Our field observations suggest that Wetland HJ -49 (which includes the off site bog turtle habitat) receives direct and uncontrolled runoff from these highways which could impact water quality in the wetland. We also have seen a number of NYSDOT projects on these highways which have no consideration for potential impacts on water quality or turtle migration. In our opinion, these

⁵ NYSDEC Bog Turtle Fact Sheet. [Online]. <<http://www.dec.ny.gov/animals/7164.html>>, Accessed: October 12, 2007.

⁶ It should be noted that the activities of putting out fires, removing beavers, and abandoning agricultural fields are all counter-productive to the creation of bog turtle habitat. "Bog turtles are dependent upon open-canopied sedge meadows and fens..."

⁷ As noted above, a Phase II Bog Turtle Survey was conducted in the potential habitat and no turtles or evidence of turtles were found.

uncontrolled projects are likely to have significantly greater impacts on the bog-turtle population than the Summit Woods project.

Moreover, because the wetland is entirely surrounded by these major highways and is geographically isolated from other bog turtle communities, the bog turtle population located within the wetland has a significantly restricted gene flow, if any, which could eventually lead to genetic isolation. Furthermore, the potential of recolonization and expansion of the bog turtle population is severely limited due to the increased chance of road mortality.

Habitat fragmentation is also a concern that has been expressed in regards to this project, however, that is a concern over any land development project. The landscape in the vicinity of the Summit Woods project site has been severely fragmented by other land development activities, including housing projects, highways, schools, farm fields, etc. However, the project will not fragment bog turtle habitat. It will not impact the wetland or be built between areas of potential bog turtle habitat. While the proposed project will result in the loss of some open land (not used by bog turtles), it must be noted that 55% of the land area comprising the Summit Woods project will be left as undeveloped open space, protected from future development. This represents both wetlands and undisturbed wooded areas to the southwest.

It is clear that the limited bog turtle habitat, both onsite and offsite, is currently being affected by uncontrollable natural causes and certain man-made causes which are completely unrelated to the project. Given its distance from the known turtle population, the proposed project represents an insignificant increase to these concerns.

Invasive Vegetation

In your letter you expressed a concern that increases in invasive wetland vegetation will occur quickly near pollution sources and this vegetation will continue to increase throughout the wetland as the pollution spreads. As you know, the spread of exotic-invasive vegetation, including common reed, purple loosestrife, multiflora rose, and reed canary grass, degrade bog turtle habitat by out-competing (or shading) native wetland plants that provide food and cover, and some invasive species (i.e., purple loosestrife) grow in clumps and restrict the movements of bog turtles. The existence of invasive species represents a potential threat to the viability of the bog turtle habitat. In addition to natural succession, which is currently occurring in the offsite habitat, the prevalence of invasive species could further increase the habitat degradation, which will lead to the movement of bog turtles away from the offsite habitat (and the project site) and eliminate the potential for the turtles to colonize the onsite wetland. With the presence of invasive species and the natural occurrence of succession, the future suitability of this habitat for bog turtles is extremely questionable.

We agree that wetland vegetation could start to change near pollution sources; however, you need to consider that Wetland HJ-49 is not pristine and is already receiving contaminants from the surrounding roads and existing farming activities. Run-off from these roadways, especially during the winter, leads to an increase of road salt entering the wetland, thus, leading to an environment conducive to invasive species growth. In fact, we have observed vegetation die-off in upland areas along the I-84 corridor due to large concentrations of salt used on that roadway. Invasive species have already been documented in the wetland, and they are continuing to spread. This will lead to

further habitat degradation. Unless active controls are put in place to control the run-off from these highways, the further spread of these species is undoubtedly going to occur.

Notwithstanding these existing impacts, the proposed project is not expected to result in a significant measurable change in pollution entering the wetland or the growth of invasive vegetation. The project will employ a variety of onsite engineering controls to ensure that little to no pollutants enter the wetland. For example, wastewater from the project's treatment plant will be discharged under a NYSDEC SPDES permit to the Van Anden Kill, which flows away from the offsite bog turtle population area (see Water Quality below). As a result, little to no pollutants will enter this area from this source. In addition, most of the storm water from the project will be discharged to this stream as well. To date no evidence, other than supposition, has been presented to show that the project will actually increase pollution or invasive species in the onsite or offsite habitat. Based on the foregoing, the project will not create any adverse impacts to bog turtles or their habitat from invasive species.

Predation and Human Activity

In your letter you state that eggs and young bog turtles are vulnerable to predators (raccoons, skunk, snapping turtle, etc.), which have increased populations in areas of high human activity (i.e., residential developments). You noted that edge habitat surrounding these developments may provide travel lanes for many mammalian predators, which leads to increased populations. We agree that predator populations are typically higher in edge habitat, however, we also believe that due to the existence of such habitat at the site, these populations may already be high due to the past land use activities. In fact, since this area has been farmed for the past 100 years, the relationship between predator and prey at this site has been in balance for decades. The project is not expected to change the location or amount of the existing edge habitat in any significant way. To date, no evidence has been presented, other than supposition, that the project will increase predator populations which, in turn, will actually kill or injure a bog turtle.

During the August 9, 2007 site visit, Ms. Niver mentioned "subsidized species," which forage near humans. These species already occur naturally in this ecosystem, and with proper waste management practices, increases in predator populations will not be an issue. Current waste management activities using closed and wheeled containers and mechanized collection systems, have significantly decreased the nuisance-type predators that Ms. Niver related to us. As such, we do not believe this issue is a concern.

You also expressed a concern that there will be an increased risk to bog turtles due to lawn mowers and motorized vehicles utilized by residents in the new community. Again, no turtles have been found at the site, so this scenario is unlikely. Moreover, the known bog turtle population is located well offsite and beyond the normal travel movements for bog turtles making this scenario more unlikely. Furthermore, bog turtles are unlikely to be present in the development area because it contains some active farm fields and some wooded uplands which is not a travel corridor for this species. Notwithstanding these facts, the project sponsor is willing to implement a 100-foot "no mowing" buffer around the wetlands as an added precautionary measure. In fact, we believe the Town will require permanent markers to delineate this area. Based on the foregoing, we feel that the risk to bog turtles from lawn mowing is de minimus. It should be noted that the farm fields in or near the wetland are currently being mowed and these fields also have been plowed and disked

occasionally. As a result, these potential impacts may already be occurring. However, the project will eliminate farming on the site as well as any potential impacts for those activities.

You also expressed a concern that there will be an increase in the collection of bog turtles due to the proposed development. Homeowner education programs and homeowner association stewardship of the wetland is encouraged to reduce this concern. As recommended in previous submissions to your office, educational pamphlets regarding bog turtles should be given to all the future homeowners. These pamphlets can help minimize the risk of illegal collection. If education pamphlets are handed out and homeowners are informed that the collection of bog turtles is illegal, this will suffice as a reasonable effort in trying to minimize the potential for illegal collection. To date, no evidence has been provided, other than supposition, that future homeowners will actually collect bog turtles. The project sponsor should not be held responsible for speculative activities that may or may not be conducted by future homeowners.

You also raised a concern over the potential for bog turtles to be crushed during construction activities on the site. However, based on the Phase I and II Bog Turtle Surveys (as well as the multitude of other hours spent at the project site), no bog turtles are present, so this impact will not occur. Also, no construction work will occur in the wetland containing bog turtle habitat. Moreover, as noted in your letter, bog turtles rarely leave wetland habitat which further limits the risk that an encounter will occur during construction. Nevertheless, as a precautionary measure, trenched-in silt fencing will be installed around the 100-foot adjacent area for the wetland prior to turtle emergence in spring. This will restrict the movement of turtles (of any species) into the construction zone and limit the potential for direct impacts. Again, it should be noted that the known offsite bog turtle population is currently beyond the typical movement distance for this species. As a result, turtles from the known offsite population are not expected to be present onsite during construction, especially since the site does not contain any suitable habitat and is not use as a corridor to travel between habitat.

Water Quality

(a) Sedimentation

An increase in sedimentation in the offsite bog turtle habitat is not anticipated because most storm water will be discharged to the Van Anden Kill which flows away from this habitat. In addition, the discharge point will be downstream from the onsite habitat and is not expected to impact those areas. Field observations by Mr. Mark Day (Appendix A), the project's professional engineer, confirms that the Van Anden Kill flows offsite to the west and then northward toward Route 52, away from the known bog turtle habitat. Therefore, any stormwater or treatment plant discharge into the onsite watercourse would be directed away from the offsite bog turtle habitat, eliminating any potential effect.

Another point should be made that the major source of hydrology into the wetland system is runoff from Hosner and Stormville Mountains. Several watercourses flow off the mountain and towards Wetland HJ-49. Any potential hydrology changes as a result of the proposed development would be insignificant as this runoff and groundwater seeps contribute the largest input of water to this wetland. The discharge of water from the proposed project would be negligible in comparison to the amount of water flowing off these mountains. As discussed below, more significant impacts to

the wetland would be the uncontrolled discharge of sediment, salt, and petroleum products from the surrounding highways.

All stormwater facilities at the project site will fully comply with the USEPA and NYSDEC Phase II Stormwater regulations and/or guidelines as well as the municipal stormwater sewer system requirements imposed by the Town of East Fishkill. These facilities will meet or exceed all requirements as specified by existing federal, State, and town laws. Town and State inspectors, and the client's engineer will be required to ensure that uncontrolled runoff does not occur and that water quality is protected. Based on the foregoing, we do not expect that the project will have any adverse impact on wetland hydrology.

(b) Nutrients

In addition, your letter outlines your concern that the proposed development will result in an increase in the amount of nutrients entering bog turtle habitat. Please consider that the nutrient runoff is not anticipated to increase, but is likely to decrease with the termination of agricultural activities on the Site. Currently, the Site is used for the production of feed crops for livestock. Under the present conditions, the farmer using the property can apply (and has applied) varying amounts of manure or fertilizer on the open fields, as necessary, to promote crop growth. As with many agricultural activities, they are generally unregulated and uncontrolled. This activity has been ongoing for over 80 years at the Site. The development of the Site will eliminate this unregulated use thereby significantly reducing the net potential for nutrient loading into bog turtle habitat by a wide margin. Overall, we believe that the project may actually improve the conditions in this regard. In addition, you correctly note that the NYSDEC Phase II storm water regulations are designed to remove most nutrients from storm water before it is released. As noted above, most of this storm water will be discharged to the Van Anden Kill which actually flows away from the offsite bog turtle population. Based on the foregoing, we do not expect that the project will have any adverse impact on water quality in the bog turtle habitat off-site.

(c) Salt

In your letter, you also raised a concern that salt from the project might adversely impact bog turtle habitat. Given the storm water controls to be used by the project and the flow of the Van Anden Kill away from the known bog turtle population, the project is not expected to significantly increase any salt entering the known habitat area. In the unlikely event that salt did enter this area, it would be minor in comparison to the amounts that enter the wetland each winter as a result of the salting of the highways surrounding the wetland. It is likely that the wetland has already been impacted by salt from these highways (i.e., Rt. 52, I-84, Taconic Parkway) and any minute increase in salt entering the wetlands as a result of the proposed development is not anticipated to result in significant changes in wetland vegetation. In our opinion, the federal and State agencies should place salt/nutrient restrictions on the NYSDOT to prevent further intrusion of road salt into the wetland, as the percentage of loading from NYSDOT activities far outweighs the percentage by the proposed development.

Your letter also expresses your concern that there will be an increase in cattails (*Typha angustifolia*) as a result of increased discharge of sodium and chloride into the wetland. As noted above, little to no salt from the project is expected to affect bog turtle habitat. Nevertheless, as Wetland HJ-49 is completely surrounded by heavily traveled roads, the amount of sodium and

chloride present in the wetland is most likely high already due to the winter salting of these roadways. This is apparent already as cattails have already been observed within the wetland (pers. obs.). Cattails will continue to spread throughout the wetland without any control programs being put in place on these highways. While we understand your concerns about cattails, it should be noted that cattails are a normal component species in most fens in Dutchess County.

(d) Waste Water

Treated waste water from the project's package will not result in a significant change in the water quality or quantity of bog turtle habitat as the onsite watercourse flows away from this habitat. In addition, as noted above, engineering controls will be put in place to prevent a significant amount of nutrients from entering the habitat.

(e) Miscellaneous

The Summit Woods project has been designed to minimize or eliminate to the maximum extent possible the potential for offsite impacts to bog turtles. Currently, land use activities are occurring up to the edge of the wetland, while historically, parts of the wetlands were farmed. The project will eliminate farming activities in the wetland and establish a 100-foot vegetated buffer surrounding the wetland. This will be an improvement over existing conditions. In addition, natural filtration of stormwater is a recognized function of buffer areas for wetlands, and, in general, available literature suggests 100-foot buffers are adequate for long term sediment control and water quality protection.⁸ It is important to note that disturbed land will not be left unstabilized. Once grading is completed, the area will be stabilized with re-established vegetation. Runoff from impervious surfaces will be treated in the onsite stormwater collection system, while re-vegetated areas will provide filtering and erosion control immediately upon the re-establishment of vegetation. In addition, because the project is not expected to impair the water quality of the wetland, no decrease in invertebrate abundance or foraging opportunities are expected.

Based on the foregoing, the project is not expected to significantly degrade the quality or quantity of water in the wetland or adversely impact the existing bog turtle habitat.

Groundwater

(a) Both the NYSDEC and Dr. Utter have raised questions about the project's potential impacts on groundwater supplying the onsite and offsite bog turtle habitat. A similar issue was raised previously by the USFWS as well. The project will utilize a community water supply and distribution system consisting of four supply wells located in bedrock. All of the homes will be supplied with water from these wells and none of the homes will have individual wells. The wells will be located on the eastern and southern eastern sides of the project site over 0.5 miles from the offsite bog turtle population.

During the project's SEQRA review, a hydrogeologic analysis was performed by Leggette, Brashears and Graham, Inc. (LBG)(Appendix B) to evaluate the project's potential groundwater impacts. As part of this analysis, a 72-hour pump test was conducted which determined that there

⁸ There is substantial literature available to suggest that benefits of buffer areas begin with as little as 15 feet of buffer. Several researchers have documented that a minimum of 50 feet is required for overall water quality protection, habitat protection, and to buffer the effects of human impacts.

was no direct hydrogeologic connection between the four bedrock wells and the wetland or the Van Anden Kill. In fact, the analysis showed that unconsolidated material consisting of about 30 feet of dense clay isolated the wetland and stream from the deeper bedrock aquifer. The data suggests that these resources will not be impacted by groundwater withdrawal from the project.⁹ As a result, LBG concluded that groundwater withdrawal will have no discernable impact on the wetland or stream.

(b) The wetland is flanked to the southeast by upland areas located on Stormville and Hosner Mountains. The wetland receives water from precipitation, runoff from upland areas, inflow from streams/drainageways, and base flow from higher elevations located on Stormville and Hosner Mountains. The most significant flow would be the base flow from these higher elevations. The base flow from these elevations will not be affected by site activities, because none are proposed in these areas or in the drainageways that convey water to the wetland.

(c) Your letter also expressed a concern that groundwater flow to the wetland could be disrupted if the underlying bedrock was somehow fractured during the installation of certain utility lines under a stream on the site. As currently planned, utility lines will be installed in the southeast corner of the property and will be bored under the stream to avoid any impacts. These utility lines will be located over 0.4 miles away from the known bog turtle population in an area where forested stream corridors are present. Based on the borings conducted for the onsite wells, approximately 30 feet of overburden (dense clay) is present above the bedrock on the project site. Under these conditions, the bedrock will not be encountered during the installation of the utility lines and this work will not have any adverse impact on groundwater flows in the area or on the offsite bog turtle population.

(d) Your letter also raised a concern that bog turtles could become trapped in storm water retention basins located on site. All of these basins will be located in upland areas over 1.0 mile away from the offsite bog turtle population. Bog turtles will not become trapped in the basins because there is no evidence that bog turtles use the upland areas on the project site where the basins will be located. Nevertheless, all retention basins will be constructed on 3 to 1 slopes which would allow turtles of any species (including bog turtles) to simply walk out of the basins. There will also be an emergent vegetation zone in the retention basins that will provide some temporary shelter for any turtles that might accidentally enter the basins.

(e) The effluent discharge from the onsite wastewater treatment plant will be into the Van Anden Kill which flows through the southeastern end of the project site. The Van Anden Kill flows in a southerly direction and then turns 180 degrees and flows north. Based on field observations by Mark Day the project's professional engineer, the stream does not flow to the offsite bog turtle population. Therefore, the hydrologic regime will not be interrupted in the vicinity of the offsite bog turtle population.

Based on the foregoing, the proposed project is not expected to have any adverse impact on groundwater supplying water to either the offsite or onsite habitat.

⁹ T. Cusack, CPG, letter dated Dec 21, 2005 (Appendix B)

Mitigation Measures

Based on the foregoing, it is our professional conclusion that the project will not have any adverse impacts on bog turtles or their habitat. Nevertheless, in an effort to provide the greatest protections possible for this species, the project sponsor has voluntarily agreed to implement a variety of mitigation measures as part of the project. As you know, these measures have been discussed in a number of documents submitted to your office over the last several years. For your convenience, we have re-listed those measures in Attachment A.

Indiana Bat

Your letter also asked us to provide additional information regarding the project's potential impacts on the Indiana Bat (*Myotis sodalis*). The Site is composed of a relatively equal mix of agricultural fields (approximately 100 acres or 31%), successional hardwood forest (approximately 127 acres or 39%), and wetlands (approximately 99 acres or 30% inclusive of the 100' adjacent area). A vegetative cover map provided by M.A. Day Engineering, indicates that only 10.5 acres (8.3 %) of forested habitat will be impacted as a result of the proposed development, while over 116.5 acres will remain undeveloped. Most of the proposed development will occur in open grass fields. The attached map, Vegetative Cover Plan, depicts the location of the forested areas that will be impacted. Only 10.5 acres of forested habitat are anticipated to be impacted by the proposed project. This is a negligible amount in respect to the overall size of the Site.

As a mitigative measure, tree clearing will be restricted to the time period between October 1 and April 1, which coincides with the hibernation period of most bats. Restricting tree clearing to this period will eliminate direct impacts to any bats.

Summary

Based on the bog turtle studies conducted to date; our review of site conditions; and our work performed at the Site, we have reached the following conclusions: (1) the proposed Summit Woods will not kill or injure bog turtles; (2) the project will not impair the behavior or movement of bog turtles; (3) the project will not significantly modify or degrade habitat or water quality used by bog turtles; (4) the project will not cause the "take" of a bog turtle; and (5) the project will not have an adverse impact on bats. As noted above, we would respectfully request that USFWS review the new information provided in this letter (as well previous submissions to your office) and reconsider its position on this project.

If you have any questions or would like to discuss any information contained in this letter, please call me at 845-567-6530. Thank you for your time with this project. We look forward to hearing from you soon.

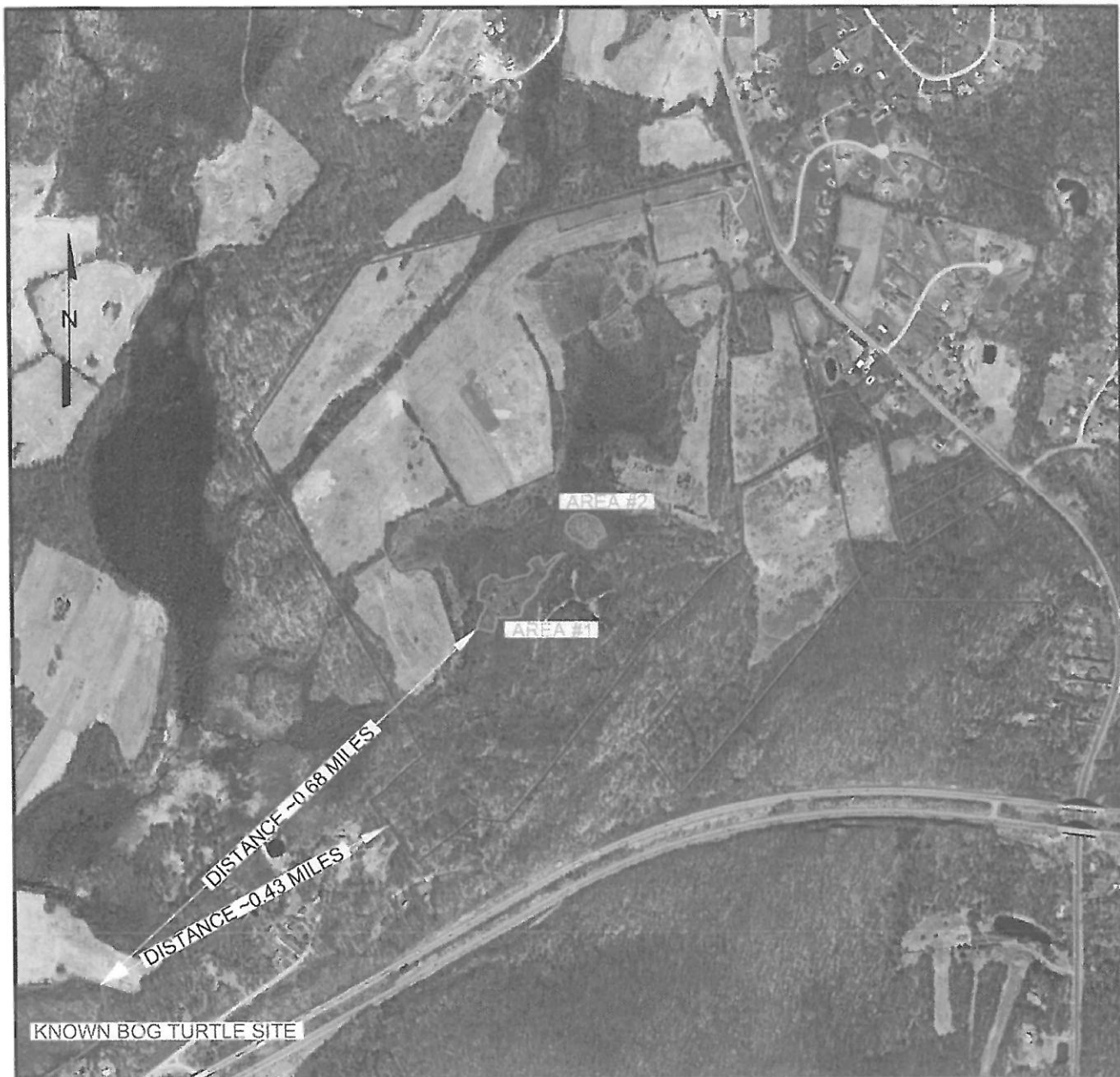
Sincerely,



David B. Tompkins, CWB, PWS
Senior Principal Professional

Attachments: Appendix A and B
Figures
Attachment A

cc: Robyn Niver, USFWS
Bill Rudge, NYSDEC
Alec Ciesluk, NYSDEC
Steve Joule, NYSDEC
Richard Cantor, Esq.
David Everett, Esq.



LEGEND

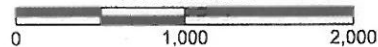


SUMMIT WOODS PROPERTY



PHASE II BOGTURTLE SURVEY AREAS

SCALE IN FEET



NOTE:

THE LOCATIONS OF THE PHASE II BOG TURTLE SURVEY AREAS AND BOG TURTLE ACTIVITY AREA ARE APPROXIMATE. THE BOG TURTLE ACTIVITY AREA IS BASED UPON A HAND-SKETCHED MAP PROVIDED TO THE NYSDEC BY DR. JIM UTTER.

KLEINFELDER

1279 ROUTE 300, SECOND FLOOR
NEWBURGH, NY 12550
PH. (845) 567-6530 FAX. (845) 567-6542
www.kleinfelder.com

PROXIMITY OF KNOWN BOG TURTLE POPULATION TO SUMMIT WOODS PROPERTY

SUMMIT WOODS

EAST FISHKILL DUTCHESS COUNTY NEW YORK

DRAWN BY: JFT

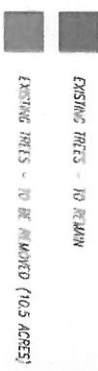
REVISED BY: JL

CHECKED BY: DT

FIGURE

1

DRAWN: 03/31/2008 APPROVED BY: PROJ. NO. 92364 FILE NAME: AREAMAP.dwg





Scale: 1" = 100'	
M.A. DAY Engineering, PC	
Project No. 100-000000	
Client: Bally & Montage at Summit Woods	
Cluster Subdivision	
Sheet No.	1 of 1

Attachment A

Summit Woods Residential Community Potential Mitigation Measures to Protect Bog Turtles

1. Implementation of a 100 foot buffer around the wetland. This would include a 100 foot "No Mow" zone around the wetland. Markers/signage will be installed to denote this buffer area.
2. Distribute educational pamphlets to all homeowners outlining the protected status of bog turtles, the adjacent wetland and its 100' buffer.
3. Impose deed restrictions prohibiting adverse activities in the wetland buffer including prohibition on clearing vegetation in the buffer.
4. Install trenched in silt fencing around the wetland buffer before and during construction to prevent bog turtles from entering the site.
5. Remove of all storm water basins from the 100 foot buffer zone around the wetland to protect water quality within the wetland.
6. Use grates on catch basins with an opening size small enough to prevent turtles from falling in and becoming trapped.
7. Construct storm water basins with a 3 to 1 slope to allow bog turtles to easily walk-out of basins.
8. Require all in-ground swimming pools to be fenced with a barrier at least six inches high to prevent bog turtles from becoming trapped in pools.
9. Eliminate basement window wells or require that window wells be surrounded by a barrier to prevent turtles from becoming trapped.
10. Impose deed restrictions on the use of fertilizers in the wetland and its buffer.
11. Discharge storm water and waste water to a stream that flows away from the known bog turtle population and its habitat.
12. Discharge storm water and waste water downstream from the onsite bog turtle habitat.
13. Preserve 177 acres or 55% of the project site in its natural state.

Appendix A

M. A. Day Engineering, PC

3 Van Wyck Lane
Suite 2
Wappingers Falls, New York 12590
Phone: 845-223-3202
Fax: 845-223-3206

April 8, 2008

David B. Tompkins, CWB, PWS
VP - Reg. Env. Practice Lead
Kleinfelder
1279 Route 300, Second Floor
Newburgh, New York 12550

Re: Summit Woods & Montage at East Fishkill projects
Town of East Fishkill

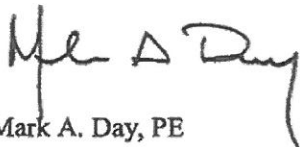
Mr. Tompkins,

Pursuant to your request I am writing this letter to state that I did a field visit last August at the above referenced projects to determine the direction of flow of the Van Anden Kill stream as it left the Summit Woods project site. Based on my field observations, I offer the following:

Once the stream leaves the Summit Woods project site it is flowing in a southwesterly direction. At a point approximately 200' away from the boundary of the Summit Woods property, the stream meanders to the west toward the Bailey property. It appears that somewhere near the Bailey line the stream turns towards the north onto the Montage at East Fishkill site (Tucker property). From there, the stream continues to flow northerly back towards Route 52.

Please feel free to contact me if you need any further information on this matter.

Very truly yours,



Mark A. Day, PE

Appendix B

LEGGETTE, BRASHEARS & GRAHAM, INC.

PROFESSIONAL GROUND-WATER AND
ENVIRONMENTAL ENGINEERING SERVICES

126 MONROE TURNPIKE
TRUMBULL, CT 06611
203-452-3100
FAX 203-452-3111
www.lbgweb.com

December 21, 2005

Mr. Michael Rubbo
The Chazen Companies
263 Route 17 K
Newburgh, NY 12550

RE: ABD Fishkill, L.L.C.
Summit Woods Residential Community
Town East Fishkill, New York

Dear Mr. Rubbo:

As requested during our recent telephone conversation, I have reviewed the potential of the proposed well supply sources on the above-referenced project to impact the adjacent wetland. To date, Wells 1 and 3 have been drilled. The proposed wells (1 and 3) on the Summit Woods parcel are completed in the bedrock aquifer and located about 125 feet from the wetland. The average water demands of the proposed water-supply system is estimated to be about 63 gpm or about 90,500 gpd.

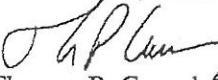
Wells completed in the deeper bedrock aquifer typically are not hydraulically-connected to adjacent wetlands. The geologic logs for Wells 1 and 3 indicate a moderately thick overburden material overlying the bedrock of about 30 feet; consisting of dense clay material. The clay material would act as a confining layer between the saturated wetland features and the deep bedrock aquifer and prevent any direct hydraulic connection between these features. This was confirmed during the 72-hour pumping test event of Wells 1 and 3 in November 2002. The water-level data and the hydrographs for the piezometers (PZ-1 and PZ-2) installed in the onsite wetland indicated no direct hydraulic connection with the bedrock aquifer during the testing event. In addition, a comparison of the temperature and specific conductance values for the wetland and Wells 1 and 3 during the pump testing event also indicate no direct recharge from the adjacent wetland under pumping conditions of the bedrock aquifer. The well/piezometer locations are shown on figure 5. The support data are included in the DEIS and LBG report dated January 2003. The data strongly indicate the surface bodies and wetland features on the Summit Wood property will not exhibit any significant effects from ground-water withdrawals from the deep bedrock wells.

December 21, 2005

The wetland feature on the Summit Woods property discharges water from streams which flow off the site along the southwestern property boundary. The distinct wetland environment bisects the site and flanks a hillside on the northwest portion of the property and Storm Mountain to the southwest. The wetland feature receives recharge from precipitation; surface-water runoff and inflow from streams; and base flow from the upland areas which flank both sides of the wetland. The more significant recharge feature would be surface water/base flow from Storm Mountain. Surface-water features are exhibited in the wetland area where the elevation is the lowest on the site and where underlying soils have low permeability and poor drainage features. The surface water and saturated soils in the wetland is considered a perched surface water feature in the watershed which is not hydraulically-connected to the deeper water-bearing fractures in the bedrock aquifer. This has been confirmed during a significant number of pumping tests conducted in similar hydrogeologic settings in Dutchess County. LBG strongly believes the ground-water withdrawal from the deep bedrock aquifer will have no discernible impact on the wetland features. Thank you for your time and consideration on this matter.

Very truly yours,

LEGGETTE, BRASHEARS & GRAHAM, INC.

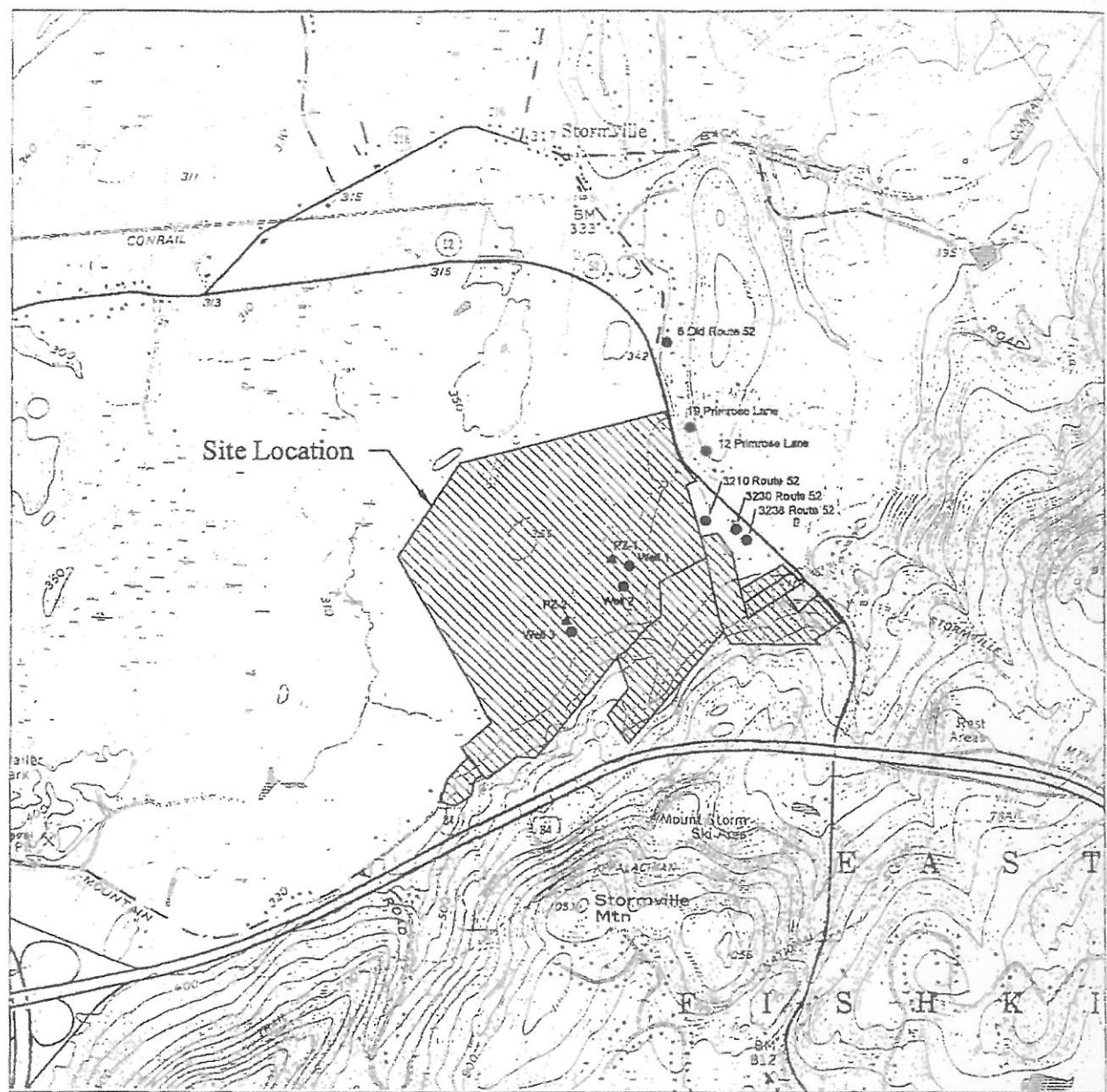

Thomas P. Cusack
Senior Associate



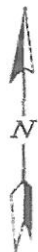
TPC:etn

Enclosures

H:\Summit Woods\well supply source.doc



SOURCE: USGS TOPOGRAPHIC QUADRANGLES POUGHQUAG, NEW YORK (PHOTOREVISED 1981) AND HOPEWELL JUNCTION, NEW YORK (PHOTOREVISED 1981).



QUADRANGLE LOCATION

0 2000
SCALE IN FEET

ABD FISHKILL L.L.C. SUMMIT WOODS EAST FISHKILL, NEW YORK

SITE LOCATION MAP SHOWING MONITORING LOCATIONS

DATE	REVISED	PREPARED BY:
		LEGGETTE, BRASHEARS & GRAHAM, INC.
		Professional Ground-Water and Environmental Engineering Services
		126 Monroe Turnpike
		Trumbull, CT 06611
		(203) 452-3100
DRAWN:	TLC	CHECKED: TPC
		DATE: 12/9/02
		FIGURE: 5

