COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMMISSION

RECEIVED

FEB 25 2013

PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF JESSAMINE-SOUTH ELKHORN WATER DISTRICT FOR A CERTIFICATE OF PUBLIC CONVENIENCE AND NECESSITY TO CONSTRUCT AND FINANCE A WATERWORKS IMPROVEMENTS PROJECT PURSUANT TO KRS 278.020 AND 278.300	))))))	**CASE NO 2012-00470**

JESSAMINE-SOUTH ELKHORN WATER DISTRICT'S NOTICE OF AMENDED RESPONSE TO THE PUBLIC SERVICE COMMISSION'S FIRST INFORMATION REQUESTS AND OF AMENDED WITNESS LIST AND TESTIMONY SUMMARY

Comes the Jessamine - South Elkhorn Water District ("JSEWD"), the Applicant herein, by counsel, and hereby provides notice of the filing of the attached Evaluation of Jessamine-South Elkhorn Water District Water Tank Siting Study by PhotoScience ("Evaluation") which was prepared and is sponsored by Mr. John G. Horne of Horne Engineering, Inc. The Evaluation supplements JSEWD's response to Public Service Commission ("PSC") Information Request No. 9, which requested "all studies, reviews and analyses that Jessamine-South Elkhorn Water District has conducted on possible locations for the proposed water storage tank." The Evaluation is the product of Mr. Horne's review of the study prepared by Photo Science, Inc. and filed by the Intervenors on January 4, 2013, which among other things suggests that specific alternative sites were available for the proposed water tank that should have been investigated by JSEWD.

By conference call, JSEWD advised the PSC staff and Intervenors that it was willing to accept a reasonable delay in the scheduled hearing on this matter in order to further investigate

the Photo Science study and the alternative sites that it suggested. By Order dated January 31, 2013, the PSC rescheduled the hearing to March 13, 2013, to permit JSEWD to conduct further evaluation and investigate possible resolution of the Intervenors' concerns.

JSEWD's project engineer has diligently conducted a very thorough evaluation of the Photo Science study and its recommendations, and the attached report presents Mr. Horne's findings. In addition, the parties have exchanged confidential settlement communications, although it does not appear at this time that the parties will be able to arrive at an agreed resolution of the concerns raised by the Intervenors.

JSEWD has also retained Mr. William L. Berkley, Jr. to review the Intervenors' Response to JSEWD Supplemental Request for Information No. 3(a). In that filing, the Intervenors presented a response from an expert retained by the Intervenors concerning his opinions as to the impact of a water tank on the proposed Switzer site on property values within the Forest Hills subdivision. Mr. Berkley is in the process of preparing his report on the issues raised by the Intervenors in this Response, and JSEWD herein notifies the PSC and the Intervenors that it will file Berkley's report with the PSC as soon as it is completed.

Mr. Horne is already listed as a witness on the witness list previously provided by JSEWD. The previously filed witness list is herein amended to include Mr. Horne's Evaluation as part of his testimony in this proceeding. Mr. Berkley was not included on the witness list as filed as he had not yet been retained to review the Intervenors' Response to JSEWD Supplemental Request No. 3(a). JSEWD currently anticipates that it will file a report by Mr. Berkley on this subject, and that it will call Mr. Berkley as a witness to present his findings at the March 13, 2013 hearing. Therefore, JSEWD's witness list should be further amended to include Mr. Berkley as a witness on this subject.

Currently pending before the Commission is JSEWD's Motion to Limit the Evidentiary Hearing herein. That Motion, if granted, would eliminate the need for much, if not all, of the supplemental reports discussed herein. As the Motion is still pending, JSEWD is proceeding to provide the reports discussed herein, but nothing in this filing should be construed as a waiver of JSEWD's claims as stated in the Motion to Limit or as an admission that issues such as those raised by the Photo Science Study or the Intervenors' Response to JSEWD's Supplemental Request No. 3(a) are relevant to or should be given any weight in the Commission's consideration of JSEWD's Application.

Respectfully submitted,

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and

Bruce E. Smith, Esq.
Bruce E. Smith Law Offices, PLLC
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Nicholasville, Kentucky 40356

CO-COUNSEL FOR DISTRICT

CERTIFICATION

Comes John G. Horne and after first being duly sworn states that he prepared the supplemental response to Information Request No. 9 and that the foregoing response is true and accurate to his best knowledge, information and belief.

John G. Horne

COMMONWEALTH OF KENTUCKY
COUNTY OF JESSAMINE, SCT...

Acknowledged, subscribed and sworn to me, a Notary Public, by John G. Horne, this the ___th day of February, 2013.

Commission Expires: December 21, 2014.

NOTARY PUBLIC NO. 433464

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Jessamine-South Elkhorn Water District's Notice was served by Federal Express – deposited on February 23, 2013, and by e-mail with the Horne Evaluation, this the 25th day of February, 2012, to:

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BRUCE E. SMITH

EVALUATION OF

JESSAMINE-SOUTH ELKHORN WATER DISTRICT WATER TANK SITING STUDY

By

PhotoScience

January 3, 2013

CONSTRUCTION PLANS

JESSAMINE - SOUTH ELKHORN WATER DISTRICT

CATNIP HILL PIKE 1.0 MG ELEVATED STORAGE TANK

WX21113016
PROJECT# 3569
SAI# KY200708131128
JESSAMINE COUNTY, KENTUCKY

NOVEMBER 2010

OWNER
JESSAMINE - SOUTH ELKHORN
WATER DISTRICT (859) 881-0589
802 SOUTH MAIN STREET, NICHOLASVILLE, KY. 40356

HORNE ENGINEERING, INC.
ENGINEERS - PLANNERS - LAND SURVEYORS
216 SOUTH MAIN STREET - NICHOLASVILLE, KY. 40356
(859) 885-9441 FAX (859) 885-5160

PROJECT LOCATION

COMMISSIONERS
L. NICHOLAS STRONG - CHAIRMAN
JERRY HAWS - VICE CHAIRMAN
GEORGE DALE ROBINSON - SECRETARY
JAMES HALL - TREASURER
JOHN BLACKFORD - VICE SECRETARY

GLENN T. SMITH - MANAGER / OPERATOR
DIANA CLARK - OFFICE MANAGER

INDEX
A AERIAL LOCATION MAP
1 SITE PLAN
2 STORM PROFILE/DETAILS
3 ELEVATION VIEW
4 ACCESS ROAD PLAN & PROFILE
5 FENCE/REGRADE PLAN
6 LANDSCAPE & EROSION PLAN

Prepared by:
Horne Engineering, Inc.
216 S. Main Street
Nicholasville, KY 40356

John G. Horne, PE, PLS

February 22, 2013

Table of Contents

EVALUATION OF
JESSAMINE-SOUTH ELKHORN WATER DISTRICT
WATER TANK SITING STUDY
By:
PhotoScience
January 3, 2013

STATEMENT OF PURPOSE

The purpose of this report is to present an evaluation of the correctness and applicability of the siting study which was conducted by PhotoScience in regards to the proposed 1.0 MG Elevated Storage Tank located on the property owned by Jessamine-South Elkhorn Water District and commonly known as the Switzer site. This evaluation will consist of the following categories:

- Applicability of EPRI Siting Method
- Engineering Criteria Applicable to Water Storage/Distribution
- Evaluation of PhotoScience Methodology
- Costing of Proposed Alternates
- Evaluation of Proposed Sites Alternate
- Conclusions

This analysis does not purport to dispute or debate the applicability of the EPRI/GTC Overhead Electric Transmission Line Siting Methodology as it is applied to electric transmission line location, but does take exception to the hypothesis that the PhotoScience study is an application of this method or in fact that the EPRI/GTC Overhead Electric Transmission Line Siting Methodology is even applicable to locating an elevated water storage tank.

METHODOLOGY

This evaluation consisted of review of the siting study completed by PhotoScience dated January 3, 2013 and the EPRI/GTC Overhead Electric Transmission Line Siting Methodology, Technical Report (on which the PhotoScience study was based), with the purpose to evaluate the applicability of PhotoScience's method and present conclusion resulting from this evaluation. Insofar as the study was strongly deficient in the applicable engineering criteria relating to water storage and distribution, this evaluation will apply the appropriate engineering criteria to the alternate sites selected by the PhotoScience Siting Study and from that information will then complete an evaluation of the proposed site and alternates with the determination of that site which is deemed to be the most appropriate.

APPLICABILITY OF EPRI SITING METHOD

PhotoScience employed a computer modeling program which they termed "EPRI Siting Methodology" in their evaluation of the proposed Jessamine-South Elkhorn Water District tank site. In their introductory paragraph, it was stated that this is a methodology that was developed to analyze siting of electric transmission lines. Also, although not stated, it is implied that the employed method is analogous to the EPRI/GTC Overhead Electric Transmission Line Siting Methodology.

One should note that there are significant differences between a high-voltage electrical transmission line and a water distribution system. The most obvious of which, is that the majority of a water system consists of pipes buried beneath the ground and the only mandatory aboveground components of the system are elevated water storage tanks.

In mountainous terrain it is even conceivable that the water storage tank can be belowground, in that it can be constructed on or near the top of the mountain.

Further, to state that "electric transmission structures and large aboveground water tanks can have similar impacts of the environment" is tantamount to saying an 18-wheeler and a yacht would have the same impact. All transmission structures have overhead lines leading to and leaving from, they are placed in series in a linear form and generally offer an unobstructed view, insofar as they are constructed in cleared right-of-ways. The structures are skeleton in form, supported on one or two legs, and generally are placed in a uniform linear spacing, Whereas, an elevated water storage tank is an isolated structure generally ovaloid in shape supported on several legs.

The reason for elevating the storage tank is to maintain the appropriate pressure head required by the hydraulic gradient of the distribution system, (i.e., the pressure is generated by the elevated position of the water). The water is delivered to elevated storage via booster pumps which transmits the water from the connection with a supplier and once placed in an elevated storage position, the elevation provides a uniform pressure head for delivery to the consumer. The key element is that most or all of the components of the distribution system are buried and not visible, while the visible components are mostly fire hydrants and storage tanks. All components of a high voltage transmission line , including the supporting tower structures and the transmission wires, are visible to the public – and in all cases this is exacerbated by the fact that the route must be contained in a right-of-way that is essentially void of all trees and structures ranging in width from 100-1,000 feet, resulting in an appearance of a highway. This is in drastic

contrast to the water system that would only have isolated structures visible on the landscape.

In the simplest form, the EPRI/GTC Overhead Electric Transmission Line Siting Methodology is a tool that will aid in the selection of a "corridor". It is not an artificial intelligence machine wherein vast amounts of data are input, a button pushed, and the "correct transmission line site" is output. Rather it is a multi-stage input/output process that requires human manipulation and decision making throughout the various phases of the process with the final transmission line location based on "human decision".

This evaluation does not take exception to the value and application of this process as applied to high voltage electric transmission lines. In fact, based on review of the Technical Report, it has the appearance of being able to provide valuable information to speed up the human decision of siting a high voltage electric transmission line.

However, the analysis takes strong exception that the EPRI/GTC Overhead Electric Transmission Line Siting Methodology, or any similar methodology, is applicable or useful in the selection of a site for an elevated water storage tank. One must concede that the PhotoScience Siting Study is not the EPRI/GTC method, but is a skeletonized aberration of same.

In support of this allegation, following is a listing of some of the major points wherein it appears that the PhotoScience Siting Study drastically diverges from the ERPI/GTC method.

- Inference of the PhotoScience Siting Study is that it is only "view driven".
- If a study team was formed, the District was excluded.
- Who were the External Stakeholders?
- The only listed public concern was visual impact.
- What database features were elected?
- What was the grid value assignment of the data bases?

- The EPRI/GTC method is multi-phased.
- Is the PhotoScience Siting Study the first phase or all inclusive?
- The EPRI/GTC method does not have a "view" data layer.
- The EPRI/GTC method has data sets that acknowledge and consider high value use land, such as row crops, fruit orchards, pecan orchards, etc. The PhotoScience Siting Study gives no regard to agriculture land use.
- In fact, four (4) alternates are sited in such lands; Site A (tobacco field), Site D (sod field), Site F (alfalfa field), and Site H (thoroughbred horse farm).
- The conclusion of the PhotoScience Siting Study is a simple statistic table with no value summation or recommendation.

The drastic deviation of the PhotoScience Siting Study from the cited EPRI/GTC method, as demonstrated by the cursory listing above, is further exacerbated by a number of errors that exist in the "most accurate terrain map of Jessamine County that has ever been created". Those errors are, but not limited to the following.

Proposed Project Locations - Sites A, D, E and F are not located near a proposed waterline project. See Appendix A.

Engineering Criteria – The text states that blue line are water mains "larger" than 6", when in fact the lines shown are 6" and larger.

The spring indicated north of Sagart Lane/Catnip Intersection is in error. In fact, the spring is located approximately 1,500" northeasterly (See Photo No. 1)

The study does not show the spring located in the elbow of Catnip Pike on the Switzer property (See Photo No. 2).

The well on the Chaumiere Des Prairies Farm property is not shown (See Photo No. 3).

Viewshed Areas – 8. Site B (Brown Site), indicates area from which one would be able to see the existing tank as red. Consequently the non-red area should not be able to see the existing tank.

PHOTO NO. 1

PHOTO NO. 2

PHOTO NO. 3

- Photo No. 4 was a view taken from area of No. 10 tee which is south of the parking lot for Harrods Ridge, and is clearly shown as non-red, yet the tank is clearly visible.
- Photo No. 5 was taken from the field south of Catnip Hill Pike west of the first curve which is clearly in the non-red area, yet the tank is clearly visible.
- Photo No. 6 was taken from the cul-de-sac of Eagle Drive, Harrods Ridge Subdivision and is clearly shown as non-red, yet the tank is clearly visible.

This clearly demonstrates that the analytical viewshed method utilized by Photo Science is, at best, general and not site specific accurate to reliably establish the precise number of resident viewers. From analysis of the defined red (non-view) areas indicated for the various sites, it is apparent that the PhotoScience method utilizes the summer canopy as a viewshed block. However, it appears that no consideration is given to winter opacity.

ENGINEERING CRITERIA APPLICABLE TO WATER STORAGE/DISTRIBUTION

For this particular evaluation, the engineering criteria will be restricted to those directly attributable to the alternatives proposed by the PhotoScience siting study. Although section two of that study which is titled "Engineering Criteria" alluded to the fact that engineering criteria was applied to the study, this "criteria" was simply a representation of the existing distribution system, an elevation 950 determination, and

PHOTO NO. 4

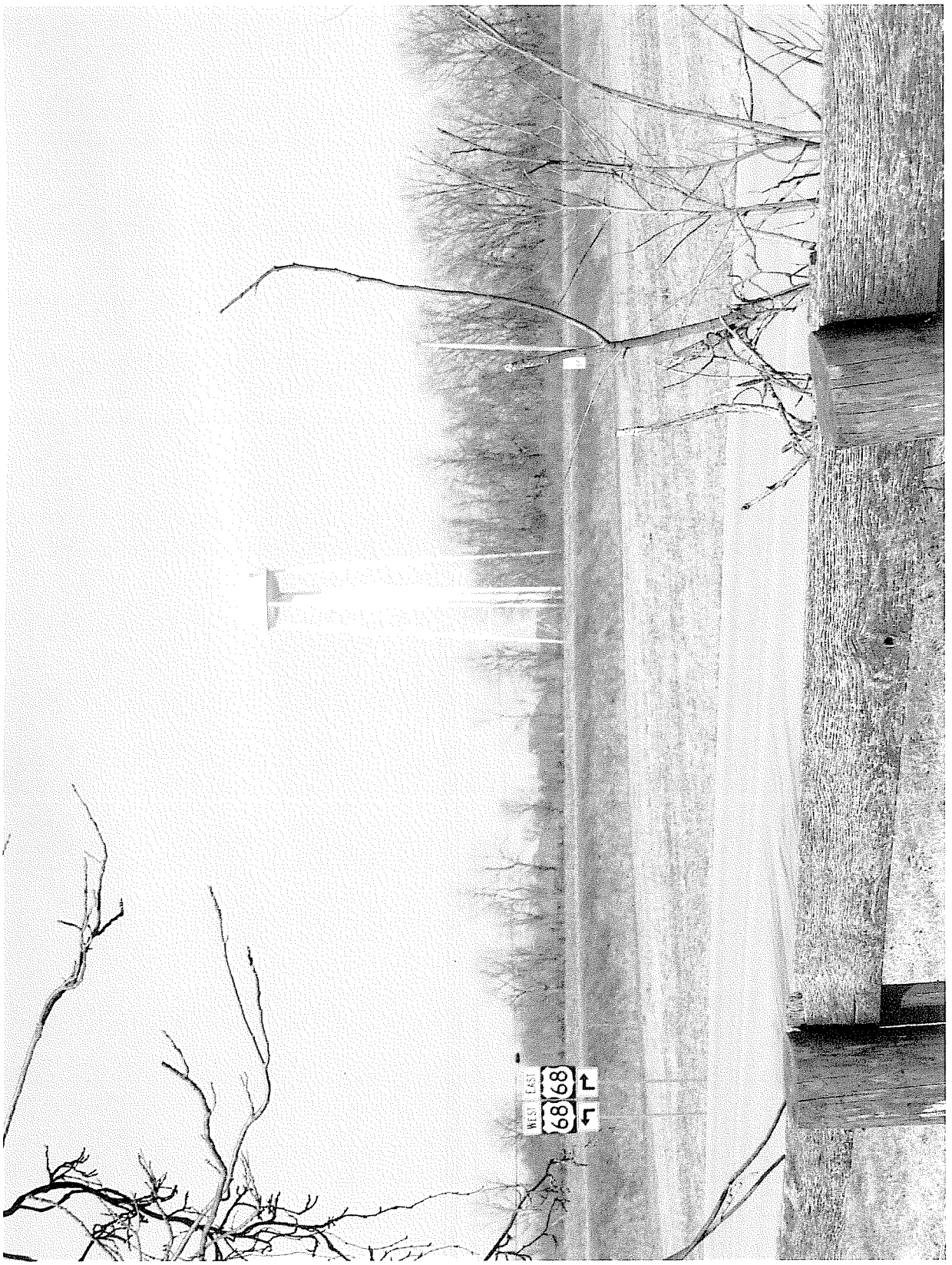

PHOTO NO. 5

PHOTO NO. 6

what was termed "proposed waterline projects", almost all of which were in error and not applicable.

The first problem with the engineering criteria used in the PhotoScience Siting Study is the assumption that the tank site be on land that lies at least 950-feet above sea level. The proposed tank site should be in areas of elevation of 1,000 feet or greater. The other mistake that is noted in the study as well as in the exhibit on page 3 is the designation by blue color of water lines "greater than 6 inches". The blue lines designated on the exhibit on page 3 show waterlines that are 6 inches in diameter and greater.

The exhibit also shows what PhotoScience designates as orange in color, the location of proposed waterline projects which they cite as being taken from the Kentucky Infrastructure Authority website. Contained in Appendix A of this report is a current (1/8/2013, 9:32:57am) copy of the stated Kentucky Infrastructure Authority website map on which the study area has been superimposed, as well as the alternative sites proposed by the PhotoScience Siting Study.

The validity of the proposed projects shown on the Kentucky Infrastructure Authority map is backed up by the listing of the current project profile numbers that are contained in the Jessamine-South Elkhorn Water District listing contained on the attached website pages with the dating of when that information was obtained, being January 7, 2013. There are a number of lines which PhotoScience indicates as being proposed waterline projects on their exhibit which are absent from that map as contained in the Kentucky Infrastructure Authority website. This is a significant error, insofar as PhotoScience based several (4) of their alternate selections on these erroneously cited

waterline extension projects. Another significant error in this regard was the failure to determine what size of line was proposed to be constructed and the timeframe, had in fact, these proposed line locations been correct in the first place. It should be noted that the proposed project lines shown on the Kentucky Infrastructure Authority website represent current and "wish list" projects. Therefore, a line could be indicated that might be 20-years away or in fact never constructed.

Another proposed waterline project designation that is in error is the line that emanates from near the Sagart Lane/Catnip Hill intersection, going generally north – northeast to an area near Native Trace Road. If the study's authors had expended the effort to evaluate the Jessamine-South Elkhorn Water District boundary that was clearly defined on the exhibit showing the Jessamine-South Elkhorn Water District distribution system, they would have readily seen that this line is very near the easterly boundary of the District. Also, from evaluation of "the most accurate terrain map of Jessamine County that has ever been created." it would have been readily apparent that there is no apparent need of this line to serve existing structures, since all that are present are currently being served. Consequently, the alternate sites A, D, E, and F are based on erroneous information.

The proposed project emanating from the Switzer tank site and going generally northeast along the easterly boundary of Forest Hills Subdivision is not shown on the Kentucky Infrastructure Authority website map. There was a proposed project in the period of 2006 but was abandoned due to refusal of the Strohl and Baker families to grant an easement, which should be strongly indicative of the unavailability of Sites A and D.

It is important to note that siting of a proposed water storage tank is dependent on numerous criteria, other than accessibility to a **waterline.** The term should be accessibility to the distribution system at a point that provides the delivery capabilities sufficient for the efficient and feasible operation of the storage tank, especially one of the size required by Jessamine-South Elkhorn Water District.

As indicated in the current proposed Switzer site, the delivery piping to the tank must come from a distribution system that is capable of delivering the amount of water necessary to serve not only the customer demand, but also be able to provide adequate flow in order to maintain the storage capabilities of the tank. A number of alternates that the PhotoScience Siting Study indicated are adjacent to lines 4 inches and 6 inches in size, which are wholly inadequate to furnish sufficient flow to supply a storage tank.

The final sizing of a line and the connection to the adjacent distribution system would be determined by a detailed hydraulic analysis which is beyond the scope of this evaluation. However based on the author's familiarity and experience with the system, he is able to make a cursory evaluation of whether or not there would be necessary upgrades to the adjoining distribution system, as well as to unequivocally state that the connection to the water tank should be a minimum 12 inch watermain.

The minimum ground elevation stated (1,000 feet) is based on the mandatory elevation of the high-water level (HWL) of any **proposed** storage tank that would operate in the single pressure zone and at the existing hydraulic gradient. This high-water level is dictated by the high-water level of the other two existing storage tanks, whereas, the proposed tank elevation must meet very closely the HWL of the existing tanks. The reason being, that the proposed tank will be filled simultaneously with the other two

existing tanks, and when all three tanks are full, the turn-off of the pump would be initiated. If the elevations are different and if the pump turn-off is initiated by a lower tank, then there would be storage in the higher tanks that would be wasted; conversely if the turn-off would be initiated by a higher tank there would be continuous overflow of the lower tanks, until the water levels of all three tanks is equalized, consequently, a large volume of water would be wasted. Therefore, it is quite apparent that all of the tanks must be operated simultaneously requiring that the HWL elevation of the proposed tanks be precisely equal to the existing tanks. Based on survey of the existing tanks, this high-water level elevation has been determined to be 1,171.68-feet.

Once the elevation of the storage tank is determined, then its position has to be fixed in space, at that elevation, by the construction of legs that support the tank from the ground level. These legs can be of any length that would be required to reach from the tank to the ground, therefore, the higher the ground elevation - the shorter the legs that will be required to support the tank. However, the longer the legs, the more expense, due to increased material and labor required to meet the increased strength design. The proposed Switzer tank has been designed and is based on a leg height of 110-feet. Consequently, any evaluation of alternative site must take into account the differential height of the proposed alternate and that of the proposed Switzer storage tank.

Another crucial item that the PhotoScience Siting Study did not account for was the archaeological and environmental requirements associated with a tank site. Any ground disturbance construction within the Commonwealth of Kentucky is evaluated during Clearinghouse and SRF review to determine whether or not a study survey would be required to determine if the proposed activities would be in conflict with an existing

archaeological site or environmental issues (i.e., endangered species). The Commonwealth of Kentucky has determined that the proposed Switzer tank site did require an archaeological study and that study was conducted, but the review did not require an environmental study. Consequently, it can be correctly inferred that should the site be moved to an alternate site, then this study and possibly an environmental study would also have to be conducted on the proposed sites.

The PhotoScience Siting Study did not evaluate other criteria that are not specifically engineering specifications, but nonetheless are associated with site feasibility and selection. Those criteria among others are: (a) land cost, (b) land availability, (c) hydraulics, (d) location at usage centroid, (e) time loss, and (f) redesign, all of which are significant in regards to relocating the proposed tank to an alternate site, and should be accounted for in the selection process.

EVALUATION OF PHOTOSCIENCE METHODOLOGY

Figure 5, Built Environment with Viewshed, is an accumulation and indication of the results of the methodology employed by PhotoScience. The implication of the figure and the written explanation is that any area within the 1 ¼ mile radius that is not shown as red is a potential tank site with the implication being in the prior discussion that location there would not be visible to the residences in the Forest Hills Subdivision. This is in error because it appears that the basic presumption of the modeling methodology does not stipulate at what eye-height the observer is at the residence, and also it does not insert a 145-foot high structure in the equation. For example, the area immediately east and adjacent of the Switzer tank site is shown as green (i.e., not shown as red), and the

Switzer Site is clearly in red (i.e., visible). This means that if the tank was moved 50' to the east on the other side of the fence row trees, it would not be visible. Is it reasonable to believe the fence row trees are 145-feet tall?

It is quite apparent that when a 145-foot high structure is placed in the equation that essentially the entire circle would become red and there is no potential unseen site that a water tower can be located. The Photo Science Siting Study implies that its methodology has a high degree of precision, whereby specific areas can be located on which a constructed water storage tank cannot be seen by an observer. This has been refuted in the discussion of Site B (Brown Site), by demonstrating that the indicated "NO VIEW AREA" in fact has a clear and unobstructed view of the existing 50,000 gallon storage tank, Site B (Brown Site).

It is apparent that the gist and direction of the entire PhotoScience Siting Study is nothing more than an effort to demonstrate that there are other sites away from the Intervenors that they would not be able to see, not an attempt to locate a site that would be invisible to the public. This effort demonstrates a complete disregard to the thoughts and consideration of other residents in the area and is a classic illustration of the NIMBY syndrome. Again, it should be noted that when this site was purchased there were few if any residences in the area that would have direct observation of the Switzer site which is demonstrated by Figure 7.

The PhotoScience Siting Study states in 7. Site C (Switzer Site), "There are 16 residences that will **likely** have a view of the tank if constructed at this location" (emphasis added). This statement then poses numerous questions that beg an answer,

1. What is likely? Will they or won't they?

2. View - is this all of the tank, bottom, top, finial, one leg, etc.?
3. Since the impetus of this study is based on Forest Hills residents, how many constitute the 16?

According to Figure 7, there are six (6) residences inside the one (1) mile diameter circle that are not located in Forest Hills. Per the study count, this would result in ten (10) residences in Forest Hills "likely" to view the proposed storage tank. There are 32 lots in Forest Hills Subdivision; therefore, those residences "likely" to view the tank are in the minority (31%).

The driving factor of the PhotoScience Siting Study, as well as the opposition of the Intervenors is, that if the proposed tank is constructed, it will be visible to them and it will diminish desirability and value of their property. The gist of their allegations and presentation is that this hypothesis is universally accepted and applied.

Based on this author's fifty (50) years of experience, not as a real estate appraisal expert, but as an engineer who has designed subdivisions for developers encompassing the majority of residential lots (in excess of 1,500) developed in Jessamine County and as project engineer for utilities who designs water distribution and sanitary and storm sewer systems, it has been my experience and observation regarding viewshed importance that viewshed is not the driving force as regards desirability and value of a lot. There is no universal acceptance and agreement of what constitutes acceptable or desirable viewshed. If it were, there would be only one (1) lot in the world and mass revolution to possess that utopian lot.

My fifty (50) years of engineering experience that includes extensive knowledge of real estate development in the area has demonstrated that there are a multitude of factors that dictate desirability of a lot above that of viewshed. Some of those are:

- Lot shape
- Slope (i.e., walkout basement)
- South exposure
- Street alignment
- Access
- Location
- School district
- Topography
- Lotting scheme

The argument by the Intervenors of diminished desirability and property values due to an elevated storage tank being visible to a lot owner is incorrect. Fortunately, there exists a situation to test the validity of this argument.

Situated immediately west of Forest Hills Subdivision is the Harrods Ridge Subdivision, which was designed by the author. When this subdivision was designed, there existed a 500,000 gallon elevated storage tank in the southwesterly corner of the property.

Eagle Drive was designed to follow the ridge line going generally southeasterly from its intersection with Golf Club Drive. Photo 7 is a picture of this intersection with the elevated storage tank clearly visible. In fact, the tank is visible throughout the length of Eagle Drive with Photo 8 taken at the southerly end and showing a view of the entirety of the tank full and unobstructed. Interestingly, those residences at the southerly end of Eagle Drive have a view not only of the 500,000 gallon tank, but also the 50,000 gallon tank as demonstrated by Photo 6. The bulk of the remainder of the homes in Harrods

Ridge have a view of both or one or the other of the two tanks, both of which existed before the development of Harrods Ridge Subdivision.

Following are tables showing the cost and sales history of each lot for both Forest Hills Subdivision and Eagle Drive in Harrods Ridge Subdivision and from this data, some interesting facts emerge.

Forest Hills Subdivision:

- The average size home is 8,170 SF.
- The average original residence value was $854,951.
- The average current residence value is $815,574.
- The current value represents a 3.5% drop in value thru the housing bubble.
- The 2013 average assessment is $842,369.

Eagle Drive:

- The average size home is 8,342 SF.
- The average original residence value was $846,398,
- The average current residence value is $830,991.
- The current value represents a 1.8% drop in value thru the housing bubble.
- The 2013 average assessment is $846,980

PHOTO NO. 7

PHOTO NO. 8

FOREST HILLS SUBDIVISION

(See Note 3)

Address	Sale Date	Sale Amount	Deed Book/Page	Lot/Tract No.	2013 Assessment	Status as of 01-15-2013	Square Footage of Residence
5784 Harrodsburg Road (See Note 2)	10/30/2007	$1,200,000	589/369	Tract 1 (Residual)	$60,885	(See Note 4)	
405 Burr Oak (See Note 1)	12/30/2010	$250,000	646/606	Lots 23 & 30		Under Construction	
	6/15/2012	$120,000	671/424	Lot 30	$120,000		
500 Burr Oak	2/22/2006	$150,000	556/683	Lot 29	$154,064	Occupied	4178
505 Burr Oak (See Note 1)	3/14/2007	$225,000	578/466	Lot 31	$0	Occupied	12525
Burr Oak (See Note 1)	4/25/2007	$225,000	580/682	Lot 32	$225,000	Vacant	
600 Burr Oak (See Note 1)	4/18/2006	$175,000	560/241	Lot 28		Vacant	
	7/30/2009	$165,000	623/707		$100,000		
604 Burr Oak	4/18/2006	$175,000	560/229	Lot 27		Occupied	9156
	10/10/2007	$1,260,615	591/224				
	7/30/2009	$1,495,000	623/709		$1,225,000		
608 Burr Oak	4/14/2006	$340,000	560/237	Lots 7 & 26		Occupied	9077
	7/24/2006	$160,000	566/177	Lot 26			
	6/2/2008	$400,000	CD18/25 **				
	10/3/2008	$340,000	611/335		$750,000		
612 Burr Oak	4/26/2006	$170,000	560/522	Lot 25		Occupied	6643
	11/23/2011	$635,000	661/582		$757,500		
618 Burr Oak (See Note 1)	5/1/2006	$170,000	561/212	Lot 24	$170,000	Vacant	
619 Burr Oak	4/22/2006	$170,000	560/453	Lot 1		Occupied	12329
	8/9/2007	$1,450,000	588/40				
	7/10/2009	$1,265,000	622/605		$1,265,000		
622 Burr Oak	12/30/2010	$250,000	646/606	Lots 23 & 30		Occupied	
	5/16/2012	$84,000	669/274	Lot 23			
	11/20/2012	$718,500	679/191		$718,500		
623 Burr Oak	2/7/2006	$170,000	556/169	Lot 2		Occupied	8281
	5/25/2007	$950,000	582/628		$950,000		
626 Burr Oak (See Note 1)	12/1/2006	$170,000	573/385	Lot 22		Vacant	
	6/29/2009	$153,000	623/106		$170,000		
627 Burr Oak	4/13/2006	$170,000	560/75	Lot 3		Occupied	8342
	1/18/2007	$500,000	575/694		$835,000		
631 Burr Oak	4/13/2006	$340,000	560/64	Lots 4 & 22		Occupied	7492
	3/10/2007	$183,845	578/315	Lot 4			
	12/23/2009	$971,000	633/01				
	4/9/2010	$775,000	636/392		$775,000		
635 Burr Oak	7/17/2006	$170,000	565/632	Lot 5		Occupied	8039

FOREST HILLS SUBDIVISION

	2/24/2010	$885,000	635/72		$835,000		
639 Burr Oak	3/15/2006	$170,000	558/140	Lot 6		Occupied	8798
	10/13/2006	$937,324	571/50				
	8/30/2007	$862,500	589/266				
	7/30/2009	$855,000	625/77		$855,000		
701 Chinkapin	4/18/2006	$340,000	560/237	Lots 7 & 26		Occupied	7127
	7/21/2008	$265,000	CD18/448 **	Lot 7	$560,000		
704 Chinkapin	3/31/2006	$170,000	559/193	Lot 21		Occupied	7710
	12/7/2007	$815,000	594/295		$750,000		
705 Chinkapin (See Note 1)	3/13/2006	$660,000	557/684	Lots 8, 9, 10 & 19		Under Construction	
	4/3/2008	$697,000	600/323 ***	Lots 8, 10 & 19			
	4/9/2012	$92,000	667/221	Lot 8	$92,000		
708 Chinkapin	3/6/2006	$165,000	557/400	Lot 20		Occupied	
	3/5/2012	$95,000	665/542				
	3/15/2012	$95,000	666/173				
	10/31/2012	$627,105	679/54		$627,105		
709 Chinkapin	3/13/2006	$660,000	557/684	Lots 8, 9, 10 & 19		Occupied	8730
	2/13/2007	$180,900	577/126	Lot 9			
	2/27/2008	$1,185,802	596/46				
	3/28/2011	$805,000	651/407		$805,000		
712 Chinkapin (See Note 1)	3/13/2006	$660,000	557/684	Lots 8, 9, 10 & 19		Occupied	
	4/3/2008	$697,000	600/323	Lots 8, 10 & 19			
	9/1/2009	$145,000	625/436	Lot 19	$145,000		
713 Chinkapin (See Note 1)	3/13/2006	$660,000	557/684	Lots 8, 9, 10 & 19		For Sale	7409
	4/3/2008	$697,000	600/323	Lots 8, 10 & 19			
	8/25/2009	$145,000	625/164	Lot 10	$748,000		
720 Chinkapin	6/5/2006	$330,000	563/194	Lots 11 & 18		Occupied	8519
	6/11/2008	$809,243	607/229	Lot 18	$809,243		
721 Chinkapin	6/5/2006	$330,000	563/194	Lots 11 & 18		Occupied	7429
	11/8/2007	$82,500	593/40	Lot 11			
	10/3/2008	$810,000	610/37		$700,000		
724 Chinkapin (See Note 1)	8/10/2006	$170,000	567/289	Lot 17		Occupied	6720
	1/16/2007	$175,000	575/550		$620,000		
725 Chinkapin (See Note 1)	8/28/2007	$170,000	589/319	Lot 12		Occupied	
	7/30/2010	$90,000	CD20/69**				
	3/23/2012	$83,000	666/481		$83,000		
728 Chinkapin	8/4/2006	$170,000	567/73	Lot 16		Occupied	7001
	8/17/2009	$705,000	625/62		$788,000		

FOREST HILLS SUBDIVISION

729 Chinkapin (See Note 1)	5/8/2006 5/4/2012	$170,000 $100,450	561/412 668/597	Lot 13	$100,450	Occupied	
732 Chinkapin (See Note 1)	8/28/2007 7/30/2010	$160,000 $90,000	589/323 CD20/65**	Lot 15	$90,000	Vacant	
733 Chinkapin	3/21/2007 2/8/2008 5/5/2010	$170,000 $874,917 $1	579/55 597/209 640/389	Lot 14	$874,917	Occupied	7892
Chinkapin	10/12/2010	$10	646/602	Green Space*	$0		
						AVERAGE	**8170**

* Property conveyed to Forest Hills Residents' Association, Inc. - *Transfer appears to be in violation of Zoning Ordinance.*

** Commissioner's deed resulting in foreclosure

*** Deed in lieu of foreclosure

TOTAL ORIGINAL VALUE OF RESIDENCE **$14,534,506** **AVERAGE** **$854,971**

TOTAL CURRENT VALUE OF RESIDENCE **$13,864,765** **AVERAGE** **$815,574**

TOTAL CURRENT ASSESSMENT VALUE **$14,320,265** **AVERAGE** **$842,369**

Note 1 - Excluded from summaries since lot is currently vacant or original sale was for the land only.

Note 2 - Non-buildable residual - not included.

Note 3 - Sale date, sale amount, title source, 2013 assessment and square footage or residence information obtained from Jessamine County PVA office and/or Jessamine County Clerk's office.

Note 4 - Status determined by visual inspection.

EAGLE DRIVE - HARRODS RIDGE SUBDIVISION

				(See Note 2)		(See Note 3)	
Address	Sale Date	Sale Amount	Deed Book/Page	Lot/Tract No.	2013 Assessment	Status as of 01-15-2013	Square Footage of Residence
201 Eagle Drive	5/25/2005 12/30/2005	$179,000 $728,320	539/611 554/82	Lot 33	$800,000	Occupied	7158
203 Eagle Drive	7/5/2005 3/23/2007 2/25/2011	$179,000 $825,000 $652,000	542/501 579/145 649/366	Lot 34	$752,000	Occupied	9154
205 Eagle Drive	4/18/2005 6/30/2006	$179,000 $1,074,000	537/456 564/620	Lot 35	$1,134,000	For Sale	8345
207 Eagle Drive	12/12/2005	$925,902	552/511	Lot 36	$925,900	Occupied	7733
208 Eagle Drive	12/2/2010	$850,000	645/710	Lot 40	$890,000	Occupied	8342
209 Eagle Drive	9/14/2006	$995,000	569/374	Lot 37	$995,000	Occupied	8786
210 Eagle Drive	6/25/2010 11/8/2012	$724,843 $724,843	640/44 679/84	Lot 39	$724,843	Occupied	6796
211 Eagle Drive	6/17/2005 8/21/2007 9/21/2010	$169,000 $660,000 $690,000	541/202 588/494 643/02	Lot 38	$735,000	Occupied	8091
300 Eagle Drive	2/21/2006 1/28/2010	$189,000 $677,000	556/600 633/353	Lot 62	$641,000	Occupied	9238
301 Eagle Drive (See Note 1)	11/5/2010 7/12/2012	$140,000 $150,000	644/715 672/466	Lot 46	$140,000	Vacant	
302 Eagle Drive	3/30/2006 7/31/2012	$189,000 $829,000	559/120 673/334	Lot 61	$829,000	Occupied	8427
303 Eagle Drive	9/27/2006 9/21/2009	$189,000 $774,917	570/157 626/594	Lot 47	$774,916	Occupied	7398
304 Eagle Drive	11/22/2010 9/20/2012	$225,000 $699,000	645/353 676/41	Lot 60	$699,000	Occupied	
305 Eagle Drive (See Note 1)	11/5/2010 10/12/2011	$140,000 $95,000	544/715 659/391	Lot 48	$95,000	Under Construction	
306 Eagle Drive (See Note 1)	11/5/2010 7/12/2012	$140,000 $150,000	644/715 672/466	Lot 59	$140,000	Vacant	
307 Eagle Drive	11/2/2007	$950,000	592/431	Lot 49	$950,000	Occupied	9308
308 Eagle Drive	5/30/2007 8/22/2012	$200,000 $720,000	583/79 674/647	Lot 58	$720,000	Occupied	8945
309 Eagle Drive	11/18/2009 9/6/2012	$768,867 $768,867	629/477 676/662	Lot 50	$760,000	Occupied	9174

EAGLE DRIVE - HARRODS RIDGE SUBDIVISION

310 Eagle Drive (See Note 1)	11/5/2010 4/11/2011 6/30/2012	$140,000 $100,000 $152,000	644/715 651/305 671/577	Lot 57	$152,000	Vacant	
311 Eagle Drive	6/30/2006 6/4/2010	$196,000 $918,000	564/691 639/147	Lot 51	$918,000	Occupied	7910
312 Eagle Drive (See Note 1)	11/22/2010	$225,000	645/350	Lot 56	$225,000	Vacant	
313 Eagle Drive (See Note 1)	11/22/2010	$225,000	645/347	Lot 52	$225,000	Vacant	
314 Eagle Drive	11/21/2007 3/5/2010 1/2/2011	$1,268,917 $1,150,000 $1,150,000	593/540 635/102 648/427	Lot 55	$1,150,000	For Sale	8065
315 Eagle Drive (See Note 1)	11/24/2010	$140,000	646/132	Lot 53	$567,500	For Sale	
316 Eagle Drive (See Note 1)	12/30/2005	$219,000	554/24	Lot 54	$864,000	For Sale	8941
						AVERAGE	**8342**

** Commissioner's deed resulting in foreclosure

*** Deed in lieu of foreclosure

TOTAL ORIGINAL VALUE OF RESIDENCE $14,388,766 **AVERAGE** $846,398

TOTAL CURRENT VALUE OF RESIDENCE $14,126,849 **AVERAGE** $830,991

TOTAL CURRENT ASSESSMENT VALUE $14,398,659 **AVERAGE** $846,980

Note 1 - Excluded from summaries since lot is currently vacant or original sale was for the land only.

Note 2 - Sale date, sale amount, title source, 2013 assessment and square footage or residence information obtained from Jessamine County PVA office and/or Jessamine County Clerk's office.

Note 3 - Status determined by visual inspection.

From the facts shown above, it is readily apparent that the presence of an elevated storage tank(s) does not impact the value or desirability of a residential structure, as evidenced by Eagle Drive.

COSTING OF PROPOSED ALTERNATES

The cost of any project is a significant factor in the selection of that project. For that purpose, this portion of the evaluation will direct the evaluation toward determining a preliminary estimate of the costs that would be associated with developing the alternate tank sites, as proposed by the PhotoScience Siting Study.

The following categories will be evaluated as to the associated additional costs to the District, should the existing site be changed from the proposed Switzer Site to one of the proposed alternatives.

- Survey and platting
- Change in leg height
- Access road
- Piping costs
- Piping upgrade
- Geotechnical Survey
- Archaeological Study

Following is a brief discourse on the derivation of the applicable cost that will be applied uniformly to each of the alternatives.

SURVEY AND PLATTING – This cost is difficult to ascertain depending on what the current situation is with the title and description of the parent tract. However, for the purposes of this report, a realistic price would be $7,000.

CHANGE IN LEG HEIGHT – The ground elevation of the location of the tank site has a significant impact on the cost differential between that of the current proposed Switzer tank and the tank that would have to be constructed on the alternate site. As previously discussed, wherever the tank is located the high-water level of the tank must be maintained at 1,171.68-feet. The Switzer tank is based on a footer elevation of 1,023-feet, which then gives a leg height of 110-feet. When the leg height is changed from the 110-feet dimension, as it increases it also requires an increase in the foundation footers and reconfiguration of the leg segments that make up the total height. Also, it should be realized that there are eight individual legs on the tower requiring approximately $1,500 per vertical foot/per leg, resulting in a cost of $12,000 per vertical foot change in the tower height.

ACCESS ROAD – The tanks site must be accessible to a public road and the access road must be capable of supporting vehicular traffic. The typical access road is a 12-foot gravel road. The minimum pavement design for the access road should consist of 6-inches of #2 stone and 4-inches of DGA. Based on costs of prior and similar roads, one would expect the per foot cost of the access road to be:

Grading	$10.00/per lineal foot
Gravel	$19.00//per lineal foot
Drainage	$ 1.00/per lineal foot
Total Cost	$30.00/per lineal foot

PIPING COSTS – The storage tank must be connected to the existing distribution system via constructed piping. Due to the size of the tank, the minimum pipe size to be employed between the proposed tank site and the existing system is 12-inch PVC pipe. Based on prior records of similar bidding on the new installation of 12-inch PVC pipe the cost can be expected to be $30.00/per lineal foot.

PIPING UPGRADE – A predominate number of the alternates proposed are located in areas that are far removed from the existing distribution system and the most feasible point where they could be connected to an existing main would be at a point in the system where the mains are inadequately sized to furnish adequate delivery flows to the proposed tank. Therefore, these sites would require upgrading of the existing system by constructing parallel mains back to the point that would be able to furnish adequate and sufficient flows to efficiently operate the proposed alternate tank. The precise sizing and configuration of these mains would be determined by a detailed hydraulic analysis of the system, but for the purposes of this evaluation, the experience of the author indicates that the connection point should be at a point that is equivalent to the delivery of a 12-inch main, and for those areas that are less than 12-inch in size would require paralleling with a 12-inch to a point equivalent to a 12-inch main. Although not determined by the PhotoScience Siting Study, nor included in the Table 15 summary, and based on the author's some 40-years' experience with the

Jessamine-South Elkhorn Water District, the distances were scaled from a base map on which the proposed alternate sites were located.

The determined unit price budget cost for pipe upgrade should be:

12-inch PVC main - $45.00.per lineal foot.

GEOTECHNICAL SURVEY – There are other cost factors associated with a geotechnical survey such as location access, terrain, etc., however, one could expect that the geotechnical survey cost would be uniform to all the proposed alternates and that a figure of $4,750 would be realistic. This is based on the cost for the proposed Switzer Site.

ARCHAEOLOGICAL STUDY – The Commonwealth of Kentucky required that for the proposed Switzer tank site, that an archaeological study would be required. The environmental study was not mandated, due to the size and location of the proposed site. However, this is not to assume that some of the other sites, based on their location, may be required to have an environmental study. However, for purposes of this evaluation, it is assumed that only an archaeological study would be required for the proposed alternative sites, and based on the history of the Switzer tank site, that cost is projected at $2,600.

Utilizing the above derived unit cost and based on the statistics supplied in Table 15 of the PhotoScience Siting Study, following is a compilation of the additional cost required by the alternate sites.

ALTERNATE SITE COSTING

	Site A	Site B (Brown)	Site C (Switzer)	Site D	Site E	Site F	Site G	Site H
Piping	$165,000	$4,500	0	$90,000	$78,000	$7,500	$3,000	$6,000
($30/LF)	5,500 (3)	150 (4)	0	3,000 (5)	2,600 (7)	250 (9)	100 (12)	200 (15)
Pipe Upgrade	0	0	0	$126,000	$126,000	$126,00 0	$135,00 0	$67,500
(12" - $45/LF)	0	0	0	2,800 (6)	2,800 (8)	2,800 (10)	3,000 (13)	1,500 (16)
Access Road	$102,450	0	0	$115,620	$128,220	$6,750	0	0
($30/LF)	3,415	0	0	3,854	4,274	225	0 (14)	0 (17)
Leg Height	$60,000	$24,000	0	-$168,000	-$120,000	$276,00 0	$444,00 0	$432,00 0
($12,000/VF)	5	2	0	-14	-10	23 (11)	37	36
Others (1)	$14,350	$14,350	0	$14,350	$14,350	$14,350	$14,350	$14,350
Land (2)	$40,000	$40,000	0	$40,000	$40,000	$40,000	$40,000	$40,000
TOTAL	**$381,800**	**$82,850**	**0**	**$217,970**	**$266,570**	**$470,60 0**	**$636,35 0**	**$559,85 0**
Residences in Viewshed	0	30	16	5	6	15	6	9
Residences .5 mi Radius	1	46	26	6	8	25	6	16
Percentage in Viewshed	0	65	62	83	75	60	100	56

(1)	Archaeological	$ 2,600
	Survey	$ 7,000
	Geotech	$ 7,000
		$14,350

(2) Purchase price of Switzer site

(3) Site A south to 12" main at Forest Hills

(4) Connect to 12" main and loop to 10" main and 6" main west of Barbaro Lane

(5)(7)(9) South to Catnip Hill Pike

(6)(8)(10) West along Catnip to 12" main

(11) Study is in error, elevation is 1,000-feet

(12) Connect to Rhineheimer loop

(13) North along Rhineheimer to Catnip 12" main

(14) Assuming site adjacent to Rhineheimer Lane

(15) From Veterinary Lane upgrade

(15) Upgrade looping from Barbaro Lane to Mathews Lane

(16) Assume adjacent to Veterinary Lane

The decision maker tool currently in vogue is the matrix. In order to balance the weight of viewshed vs. cost, the number of viewers was reduced to percentage and the cost was relegated to one (1) point per $1,000. Following is the resultant matrix with

summary ranking based on matric value with the most obvious winner being the proposed Switzer site.

	Site A	Site B	Site C	Site D	Site E	Site F	Site G	Site H
% in viewshed	**0**	**65**	**62**	**83**	**75**	**60**	**100**	**56**
Piping	**165**	**4**	**0**	**90**	**78**	**8**	**3**	**6**
Pipe upgrade	**0**	**0**	**0**	**126**	**126**	**126**	**135**	**68**
Access Road	**102**	**0**	**0**	**116**	**128**	**7**	**0**	**0**
Leg height	**60**	**24**	**0**	**-168**	**-120**	**276**	**444**	**432**
Others	**15**	**15**	**0**	**15**	**15**	**15**	**15**	**15**
Land	**40**	**40**	**0**	**40**	**40**	**40**	**40**	**40**
TOTAL	**382**	**144**	**62**	**302**	**342**	**532**	**737**	**617**

	Matrix Ranking	Cost Differential	Matrix Value
#1	Site C (Switzer)	-0-	62
#2	Site B (Brown)	$82,850	144
#3	Site D (Strohl)	$217,970	302
#4	Site E (McMillen)	$266,570	342

EVALUATION OF PROPOSED ALTERNATE SITES

Following is a listing of errors and deficiencies which were revealed in the evaluation and review of the alternate sites proposed under the PhotoScience Siting Study. This evaluation was coupled with the individual viewshed as listed in that study and the statistics stated under Section 15 of that study.

Located in Appendix B is a prepared composite map of the various sites contained in the PhotoScience Siting Study on which is indicated the one half-mile viewshed study area, as well as the property owner's name of the proposed alternate site. Included on this composite map is the existing Jessamine-South Elkhorn Water District distribution system color-coded as to size and where applicable, the boundary of the Jessamine-South Elkhorn Water District. All of this information has been overlain on aerial photography obtained from the internet.

#7. Site C. (Switzer site)

(a) This review was unable to confirm the total residences in the viewshed which is listed as 26 in the statistics table. However, it is very interesting to note that of the 26 residences listed for the study area that only 16 noted as are within the viewshed, and of those, only 11 are within approximately a quarter-mile of the tank site with the majority of those being between 600-1,200 feet radius. Also, based on the graphics shown it appears that there are a number of homes that have been accounted for as being in the viewshed when only a very small portion of red is indicated on the residence. It is safe to say that based

on the scale as used there will be only a very narrow window that a person would be "likely" to view the entirety of the tank proposed on the Switzer site.

(b) The statistics table notes that the proposed tank is 301 feet from the existing distribution line and 316 to the proposed distribution line. If the authors of the study had completed their due diligence and the Intervenors had furnished the information that had previously been forwarded, it would be quite evident from the construction plans that the tank site is located such that an existing 12-inch main fronts on the north and easterly side of the site. It is difficult to understand how the PhotoScience Siting Study can show an existing watermain in this position on 2. Engineering Criteria and yet note the Switzer site as being several hundred feet from an existing main.

(c) As stated earlier in the report, the symbol line denoting a proposed water project is in error and should not have been considered or contemplated in the evaluation of the tank site.

#8. Site B. (Brown site)

(a) This is the site that the Intervenors proposed in their initial negotiations with Jessamine-South Elkhorn Water District and is located immediately adjacent to the existing 50,000 gallon tank site.

(b) There is no question that the Intervenors are aware of the deficiencies of this tank site, insofar as it was discussed in detail and also that the information regarding that analysis of this site was furnished in the information request sent to the Intervenors. Suffice it to say that because of the inherent legal ramifications, it is apparent that this site is not available.

(c) The statistics indicate that this site is 65-feet from a public road. However, the site is immediately adjacent to an existing county road which is the Old Harrodsburg Road (US-68).

(d) The statistics indicate that the proposed site is 78-feet from an existing distribution line and also it indicates that it is 490-feet from a proposed waterline. Again, the information shown on the site is in conflict with the distribution map that the Jessamine-South Elkhorn Water District furnished the Intervenors. The proposed site is immediately adjacent to a 12-inch main that was constructed during the development of the Forest Hills Subdivision and is immediately opposite a 6-inch and an 8-inch main located on the westerly side of Barbaro Lane.

(e) Suffice it to say that based on the inaccuracies of access, and the distribution main, it is apparent that persons preparing the PhotoScience Siting Study either failed to do due diligence on the existing infrastructure system or were lax in the review of the accessibility both as to access and existing water mains.

(f) The table 15.Statistic lists residences within viewshed as 30. However, the study is remiss in not noting that the proposed tank at Site B (Brown Site) would be within approximately 400-feet of US-68, a four-lane highway having an ADT count of 15,593[(a)] VPD, which would offer a completely unobstructed view of the entire tank. This huge number of viewers would certainly skew the hypothesis of, **"an important concern of the public is siting the tank in an area that has the least visual impact to the community."** (emphasis added).

[(a)] 15,593(08) STA 750, KYTC Traffic Station Counts, Nicholasville, Jessamine County, Kentucky, July 2011

#9. Site A.

(a) This site is located on the A.J. Baker Properties, LLC Farm which is located and fronts on Brannon Road.

(b) During the 2006 design of the water tank on the Switzer site, there was a proposal to extend a waterline from the tank site northerly along the McMillen/Strohl/Baker property line and connect to the existing mains on Brannon Road. However, in discussion with the property owners along this route, they were vehemently against providing an easement.

Because of, and subsequent to, the watermain reinforcement that was provided by the US-68 project (2008), this routing was abandoned.

(c) Consequently, it is safe for one to anticipate that a request to purchase a tank site in the area of a tobacco field would not be acceptable to the owner, insofar as he refused to provide an easement for a watermain.

(d) Because this proposed waterline is no longer required, service to this site would require construction of a new watermain from the proposed site to a point in the existing distribution system that would provide adequate flows to service the tank. This required piping would be southerly to the existing 12-inch main at the Switzer site - the distance being a total 5,500-feet.

(e) Putting a tank at this site would be further exacerbated by issues of access to the tank site. The nearest point of access would be from Brannon Road and would result in the construction of an access road of 3,415-feet in length.

#10. Site D.

(a) This site is located in the southeasterly corner of the Teddy Rucker and Timothy D. Strohl property located westerly of Windom Lane.

(b) This farm has operated as a sod farm for the past 20+ years and the proposed site is located in one of the sod fields.

(c) Access to the tank site would be very difficult, insofar as it would require locating an accessible alignment along and around the existing sod fields.

(d) As stated in Site A response, this property owner was approached in 2006 regarding an easement for a watermain along the westerly boundary, to which they were vehemently opposed. Therefore, it is safe to assume that this site is unavailable.

(e) The statistics indicate that the proposed site is located within 3,100-feet of an existing watermain and 2,781-feet from an existing distribution main, when in fact the property is being served by Jessamine County Water District #1 and that the closest watermain to this property would be a 6-inch main at the end of Cassity Way which is located in that part of the existing distribution system that is insufficient to serve a 1,000,000 gallon tank.

(f) In order to serve a tank at this site, it would require construction of a new 12-inch main to the Catnip Hill Pike area which would require 3,000-feet of piping, and upgrade along Catnip Hill Pike to the existing 12" main would require construction of an additional 2,800-feet of piping upgrade.

(g) Again, the PhotoScience Siting Study indicates a proposed watermain along the general area from Catnip Hill running north and terminating at some undisclosed point. And, as previously noted, this is completely in error, since there has never been an intended project in this location and of this nature. Also, as previously noted the information shown on the Kentucky Infrastructure website (Appendix A) does not show a proposed project anywhere near this area. Consequently, any references to distance to proposed mains are in error.

#11. Site E.

(a) This site is located in the northeasterly corner of Chaumiere Des Prairies Farm which is termed the McMillen Farm in the PhotoScience Siting Study.

(b) As with Site D, this study suggests that there is a proposed main in close proximity to this site, when in reality there is no proposed main and the nearest existing distribution main is located along Catnip Hill Road. However, this is a 4-inch main and would require substantial upgrade along Catnip Hill Road in order to service this site. The reference given in the statistics table as regarding distance to existing mains, public roads, etc. are in error. The scaled distance being a requirement of 2,600-feet of 12-inch main from the tank site to Catnip

Hill Road and then an upgrade along Catnip Hill Road of 2,800-feet. Access would naturally be from Catnip Hill Road and the most direct access being along the easterly property line consisting of 4,274-feet.

(c) The negotiations with the Forest Hill residents and McMillan that were conducted early on, suggested a tank site that is located approximately midway between Sites E and F. During the negotiations with these parties it was not recorded that this Site E or Site F was ever proffered.

#12. Site F.

(a) This site is located in the southeasterly corner of the Chaumiere Des Prairies Farm.

(b) From the indicated location of this site on the map and from a field observations based on the direction of the property line, it appears that this site is located in or on the edge of a large sink-hole. (See Photo 9)

(c) The site is located on Catnip Hill Road, and although not indicated to be adjacent to the road, one would assume that if utilized, it would be located adjacent to the road. Therefore, the access distance would be negligible. However, the site statistics indicates a distance of 225-feet from the public road to the site. Therefore, this distance shall be used for purposes of cost comparisons.

PHOTO NO. 9

(d) Again, the site is located on an existing 4-inch distribution main and would require upgrade of the existing Catnip Hill Pike main from this point to the Switzer site which would require 2,800-feet of upgrade piping.

(e) Based on the 5. Built Environment with Viewshed in the PhotoScience Siting Study, it is very probable that not only would a tower at this site be seen by the residents of Forest Hills Subdivision, but all the other subdivisions within this general area.

(f) The elevation determined in this study and as listed in 15.Statistics which I assume is based on the "most accurate terrain map of Jessamine County that has ever been created", indicates the elevation of the site as being 1,066-feet. Review of the USGS Quad of this area indicates that the elevation of the proposed site is closer to 1,000-feet or at best since it is indicated at the edge of the sink-hole at 1,010-feet. Certainly not 1,066-feet. For purposes of cost evaluation, this report will use an elevation of 1,000-feet.

#13. Site G.

(a) This proposed site is located in the southwesterly corner of the Juanita H. Baker Farm which is located in the southeasterly quadrant of the intersection of Rhineheimer Lane and Catnip Hill Pike.

(b) As shown by the existing watermain that traverses the southerly portion of the farm, Ms. Baker has granted an easement to the Jessamine-South Elkhorn Water District for construction of a distribution main. However, this is not indicative of the fact that she would be willing to sell a one-acre tank site.

(c) Regardless of whether or not the tank site would be available, it should be noted that based on the elevation of 986-feet as shown on the statistics chart, that this would require an additional 37-feet of leg height in order to construct a usable tank on this site which would be costly as discussed below.

(d) Although the preliminary estimate for the extension of the 8-legs is $12,000/vertical foot, this was based on a range of elevation from 1-10 feet. Consequently, with a greater height of 37-feet the cost would be substantially greater due to the fact of increased stability and strength due to the increased height. However, this report will utilize the $12,000/vertical foot. Using this conservative unit price, construction of a tank at this site would require an additional $444,000, just for the increased length of the tank legs.

(e) Although the tank site is located adjacent to existing mains, they are 4-inch and 6-inch in size and consequently will require upgrade from the site northerly to the existing 12-inch main at the Switzer tanks site, a distance of 3,000-feet.

#14. Site H.

(a) This site is located in the southerly portion of a farm owned by Sarah Katherine Ramsey who is the wife of Ken Ramsey and together they own and operate The Ramsey Farm which is a thoroughbred racing operation consisting of several thousand acres.

(b) Mr. Ramsey was approached during the evaluation of tank sites that was conducted in 2004 and was not receptive to granting a tank site on another portion of his farm.

(c) The location suggested here is northerly of Veterinary Drive which is a county road that connects Old US-68 and Relocated US-68. Consequently, access to this site would be no problem. Although the PhotoScience Siting Study indicates a 143-feet.

(d) However, it would require construction of 1,500-feet of piping to connect the existing mains located on Barbaro Lane (Old US-68) and Relocated US-68 in order to provide adequate service to the proposed tank.

(e) It should be noted that the proposed tank site is adjacent to an existing electrical substation and consequently it may be in violation of the electrical and safety codes.

(f) The table 15.Statistic lists residences within viewshed as 9. However, the study is remiss in not noting that the proposed tank at Site H would be within approximately 100-feet of US-68, a four-lane highway having an ADT count of 15,593[(a)] VPD, which would offer a completely unobstructed view of the entire tank. (See Photo 10) This huge number of viewers would certainly skew the hypothesis of, **"an important concern of the public is siting the tank in an area that has the least visual impact to the community."** (emphasis added).

[(a)] 15,593(08) STA 750, KYTC Traffic Station Counts, Nicholasville, Jessamine County, Kentucky, July 2011.

(g) Regardless of the other factors mentioned, this site has an elevation of 987-feet which would require a lengthening of the legs of the tank by 36-feet. As previously discussed in Site G, this would be prohibitive from a cost standpoint.

PHOTO NO. 10

CONCLUSIONS

The PhotoScience Water Tank Siting Study states that it uses the same detailed and rigorous methodology that is inherent to and contained within the EPRI-GTD Overhead Electric Transmission Line Siting Methodology, when in fact the method employed is a cursory evaluation of siting that is almost solely viewshed driven. The study is rife with errors, mistakes, void of applicable engineering principles, and in the final analysis does not proffer a concluding answer. Following is a listing of some factors that demonstrate this opinion.

- Sites were proposed near future projects that did not exist.
- The proposed sites were not evaluated in conjunction with the other two (2) existing tanks.
- 2. Engineering Criteria section contains numerous errors.
    - Future projects which did not exist.
    - Springs indicated in wrong locations.
    - Wells and springs not shown.
    - Incorrect base elevation.
    - Incorrect pipe size indicated.
    - District boundary omitted.
- Study disregarded availability of site acquisition.
- Disregards flow availability at proposed alternates.
- PhotoScience Siting Study does not consider any costing relative to existing Switzer site.

- The PhotoScience Siting Study and proposed alternates do not reflect the consideration of even the most basic engineering hydraulic design principles.
- The PhotoScience Siting Study appears to be totally viewshed driven.
- 8. Site B (Brown Site) visibility map is in error. There are several points on the non-red areas from which the tank is visible (i.e., Photos 4, 5, & 6).
- A basic principle of the EPRI-GTC methodology is to combine all databases into a composite map. The PhotoScience Siting Study did not combine all existing and alternate site viewshed mapping; therefore it was not able to indicate a tank site area that would not have a visible tank.
- Winter opacity was not considered in the viewshed limits determination.
- The PhotoScience Siting Study stated, "an important concern of the public is siting the tank in an area that has the least visual impact to the community". Then proposing to locate two (2) sites (Sites B and H) adjacent to a four-lane divided highway having an average daily traffic count (ADT) of 15,593 vehicles per day (VPD).

In conclusion, this report has demonstrated that the PhotoScience Siting Study does not contain one scintilla of the EPRI-GTC Overhead Electric Transmission Line Methodology, is not based on sound engineering principles and methodology or cost evaluation, and did not conclude with a recommended alternative site. In contrast, application of these evaluations basics to the alternates proposed by PhotoScience Siting Study demonstrates that the Proposed Switzer Site is the most obvious and desirable location for the proposed 1.0 MG elevated storage tank.

APPENDIX A

Kentucky Infrastructure Authority

Proposed Project Website

January 7, 2013

Q:\SCCESWORK\WO3569\PVA MAPPING.dwg, 1/11/2013 7:53:03 AM

KIA > WRIS > WRIS Portal > **Project Data**

Reload < Click here to reload the last saved version of this page.

User Login: Password: **Login**

WRIS Project Data

Search the WRIS for drinking water or waste water projects by entering any combination of the following fields:

Regulatory Framework: Safe Drinking Water Act (Water)
Area Development District: Bluegrass View Map
Legislative District:
Planning Unit:
Primary County:
Project Status:
Funding Source:
Funding Status:
Applicant: Jessamine-South Elkhorn Water District
Project Administrator:
Project Engineer:
Project Engineering Firm:
Project Number*:
DOW Permit ID*:
Project Title*:

Clear Query **Submit Query**

Legislative District Options	
District Type:	Sort Option:
(•) Kentucky House	(•) By District Number
( ) Kentucky Senate	( ) By Legislator
( ) Congressional	

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Download Clean Water Pre-Application Form
Download Drinking Water Pre-Application Form

7 records found. Click here to view results.

* Indicates a fuzzy search will be performed on these fields.

7 records found. **Download PDF** **Download Excel**

PNUM	Applicant	Project Status	Funding Status	Schedule (yrs)	Project Cost	Project Title	Primary County	Profile Modified	GIS Modified
WX21113001	Jessamine-South Elkhorn Water District	Constructed	Fully Funded	Constructed	$1,750,000	Keene Reconstruction & Northwest Hydraulic Reinforcement	Jessamine	12-07-2010	08-02-2010

WX21113004	Jessamine-South Elkhorn Water District	Constructed	Partially Funded	Constructed	$1,600,000	Southeast Rural Jessamine Unserved Areas	Jessamine	12-07-2010	08-02-2010
WX21113016	Jessamine-South Elkhorn Water District	Approved	Partially Funded	0-2 Years	$2,192,000	Catnip Hill Pike 1.0 MG Elevated Storage Tank	Jessamine	11-05-2012	08-02-2010
WX21113029	Jessamine-South Elkhorn Water District	Approved	Not Funded	0-2 Years	$3,025,300	Jessamine S. Elkhorn Northwest Watermain Replacement and Hydraulic Looping	Jessamine	11-27-2012	12-04-2012
WX21113031	Jessamine-South Elkhorn Water District	Approved	Not Funded	0-2 Years	$709,000	Fort Bramlett/Camp Nelson Waterline Extension	Jessamine	12-02-2012	12-27-2010
WX21113036	Jessamine-South Elkhorn Water District	Approved	Not Funded	3-5 Years	$125,000	Water Asset Management and Cost of Services Survey Jessamine South Elkhorn	Jessamine	02-22-2012	09-21-2010
WX21113038	Jessamine-South Elkhorn Water District	Under Construction	Partially Funded	0-2 Years	$623,531	Jessamine - South Elkhorn Water District - Southeast Rural Jessa	Jessamine	03-06-2012	09-07-2010

Back to top

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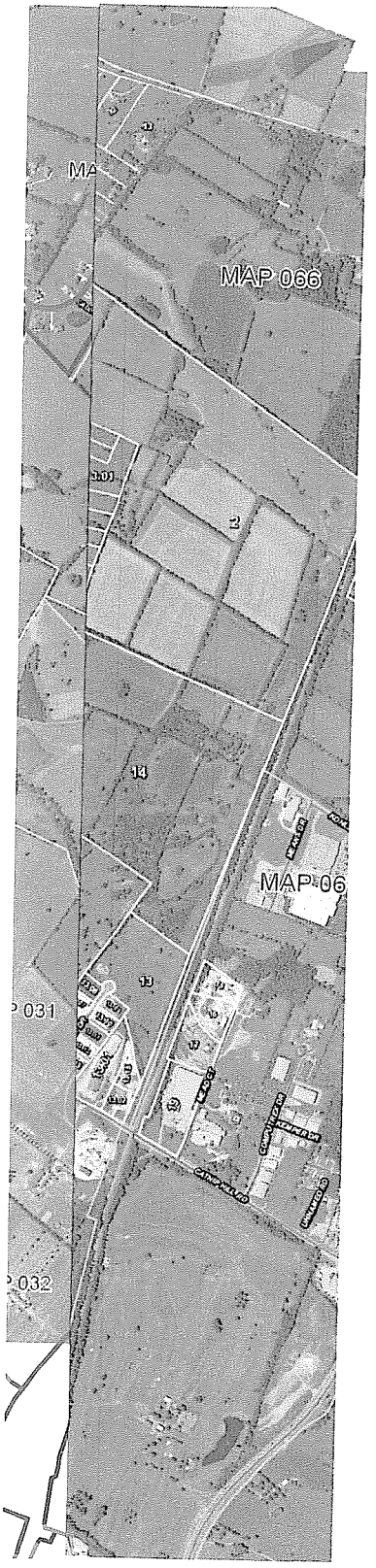
APPENDIX B

Composite Map of Study Sites

January 9, 2013



LEGEND

- STUDY AREA OF PROPOSED TANK SITE (1.25 MILE RADIUS)
- DISTRICT BOUNDARY
- STUDY AREA OF PROPOSED TANK SITE (0.5 MILE RADIUS)
- PROPOSED TANK SITE
- STUDY AREA OF ALTERNATE TANK SITES (0.5 MILE RADIUS)
- ALTERNATE TANK SITES

--WATERLINES--

- 2", 3" ORANGE
- 4" GREEN
- 6" RED
- 8" MAGENTA
- 10" CYAN
- 12" BLUE