1503 LBJ Freeway • Suite 400 • Dallas, Texas 75234 • 972.647.6700
txi.com

Kent Wilkins

March 19, 2014

Oklahoma Water Resources Board
3800 N. Classen Boulevard
Oklahoma City, OK 73118

Attn: Mr. Kent Wilkins

RE: TXI's Site Specific Water Management and Conservation Plan (mod 2)
Updated and Modified from 2/20/2014 Meeting

Dear Mr. Wilkins:

On February 20, 2014, TXI met with OWRB to discuss its January 14, 2014 revision to TXI's Site Specific Water Management and Conservation Plan. As a result of that meeting, TXI has made the changes requested by OWRB and submits its revised plan (mod.2). Specifically TXI has:

- Modified Figure 4 to show arrows for general water movements
- Modified the table on page 2 to include references to Figure 5
- Added a narrative section on page 10 discussing consumptive use of the groundwater component of pit water
- Added Figure 5.1 linking Appendix C of the Rules to Figure 5
- Inserted rules reference on Page 8

We look forward to receiving your letter of approval of TXI's Site Specific Water Management and Conservation Plan.

Sincerely

Bill Flanigan
Sr. Manager,
Geology and Mine Services
TXI

TXI MILL CREEK
SITE SPECIFIC WATER MANAGEMENT
AND
CONSERVATION PLAN (mod.2)

GENERAL

TXI's Mill Creek operation is located in Johnston County about 2 1/2 miles south of the Town of Mill Creek, Oklahoma. The quarry is located in portions of Section 26, 27, 34, and 35, of T 2 S, R 4 E. The processing plant and related features are located to the east of the Quarry in portions of Sections 19, 24, 25, and 35 of T2S R4E and portions of Section 1 T3S R4E. A general location map is shown as Figure 1. Figure 2 shows the location of the site with respect to the USGS 24K DRG labeled with section references TXI's Mill Creek site overlaps onto the Arbuckle Simpson Aquifer (ASA)

WATER RIGHTS INFORMATION

TXI has 1) a permit to Appropriate Stream Water from two diversion points including Mill Creek and also a tributary to Mill Creek, and 2) a groundwater permit. Both of these permits were applied for and granted by the Oklahoma Water Resources Board (OWRB) in 2000. A copy of these permits may be found in Appendix D

The Permit to Appropriate Stream Water is contained in Stream Water Permit No. 2000-013 for 783 Ac-Ft. TXI's permit to appropriate stream water authorizes two diversion points. These diversion points as described in the amended permit include one located in the NW SW SW of section 19, 2S, R5EIM (742 aft.) and the other, located on an unnamed tributary of Mill Creek in the SE SE SE* of Section 24 T2S, R4EIM (41 aft.). Both are located in Johnston County. The approximate locations of these diversions are shown on Figure 3. The permit and amendments can be found in Appendix D.

The Temporary Permit to Take and Use Groundwater is contained in Groundwater Permit Number 2000-253 for 640 Ac-Ft per year. The land dedicated to this permit totals 640 acres and is located as described in the permit as follows: 320 acs. in the W2 of Section 26 and 320 acs. in the E2 of Section 27, all in T2S R4EIM, Johnston County. To date, groundwater withdrawal

wells have not been installed pending resolution of outstanding pitwater issues. The approximate location of the land dedicated to the taking and use of groundwater is shown on Figure 3.

TXI WATER MOVEMENTS

In general, water is pumped from the quarry into a freshwater holding basin. Water is pumped from the freshwater holding basin to plant processes and recovered by various sumps throughout the facility. This recovered water is pumped to the recycle re-use and recharge facility (Troy) wherein a portion is recycled to the freshwater pond and a portion recharges the ASA aquifer. For the purpose of this plan we have included augmentation points which will be used to facilitate augmentation credits and /or surface water offsets.

A facility map depicting the General Water Flow Diagram for the site as it exists today is shown in Figure 4. More detailed maps of specific water balances around the quarry and its pitwater may be found in Figure 4.1; the freshwater pond in Figure 4.2; the plant in Figure 4.3; and the recycle re-use and recharge facility in Figure 4.4.

Estimates of Annual Water Quantities

Groundwater diverted from the Pit	1350 Ac-Ft	See Figure 5: A8
Stormwater and direct precipitation (PPT) diverted from the Pit	300 Ac-Ft	See Figure 5: A5+A6
Total Pitwater diverted	1650 Ac-Ft	See Figure 5: A1
Other Direct PPT and Stomwater runoff	350 Ac-Ft	See Figure 5: B5+B6+C5+C6
Water used for Surface Water Augmentation*	550 Ac-Ft *	See Figure 5: A 11
Water used for Groundwater Augmentation*	1150 Ac-Ft*	See Figure 5: C12

All quantities estimated from 2013 conditions.

* It is expected that, as surface water augmentation is fully implemented, surface water augmentation volumes may increase and groundwater augmentation volumes may decrease.

Methodologies for Measuring and Monitoring Water

TXI's On-Site Weather Station

TXIs onsite weather station measures rainfall and evaporation near the quarry. The data is recorded at intervals of less than 15 minutes and summarized and reported on a daily and monthly basis. The TXI weather station is operated and maintained by a third party consultant. The pan evaporation module will be emptied in winter months; the Tishomingo Mesonet site will be utilized during the winter months until the risk of freezing has subsided. If gauges are found inoperable during non-winter times, a local Mesonet site (Tishomingo) will be used until such time as gauge issues can be resolved.

Storm Water Runoff Models

Storm water runoff models have been analyzed and created by third party consultants. The models will utilize onsite daily rainfall (or the mesonet site if anomalous behavior is experienced). TXI has three model regions; one around the quarry, one around its freshwater pond and one around its recycle re-use and recharge facility (Troy). These models were prepared using the SCS Method, an appropriate and common hydrologic practice, and consistent with OWRB. These water runoff models will be used to estimate percentages of groundwater entering each process. Daily rainfall data will be used as input parameter to the runoff models. A typical representation of summary output is shown on Figure 6.

Water Monitoring and Estimation

Volumes pumped from the quarry to the freshwater pond will be measured or estimated. When possible and/or practical, water volumes pumped from one area to another will be metered. Otherwise, estimates will be used to provide a measure of quantities. Such quantities will only be estimated at times when measuring devices prove to be unavailable or operating in an unsatisfactory fashion. All gauges are planned to be calibrated by a third party subject to a timeline consistent of gauge manufacturer's recommendations. Monthly readings of gauges will be used to calculate or estimate water movements.

Evaporation

Evaporation from water bodies will be calculated using surface areas multiplied by lake evaporation rates. Pan Evaporation will be derived from onsite pan evaporation gauges which are recorded digitally. During winter periods, or if anomalous behavior is suspected, TXI will utilize pan evaporation data from the Mesonet station (Tishomingo). As prescribed by OWRB, lake evaporation from the quarry sump area will be taken as 70% of the pan evaporation as

measured on the site or taken from the Tishomingo Mesonet site. Consumptive use of pit groundwater will be calculated using actual evaporation multiplied by the percentage of pit groundwater involved in that process and only on ponds that have not demonstrated to recharge the Arbuckle Simpson Aquifer. The recycle, re-use and recharge facility at Troy is demonstrated to be recharging the aquifer, as discussed later.

Water Movements

A facility map depicting the General Water Flow Diagram for the site as it exists today is shown in Figure 4. More detailed maps of specific water balances around the quarry and its pitwater may be found in Figure 4.1; the freshwater pond in Figure 4.2; the plant in Figure 4.3; and the recycle re-use and recharge facility in Figure 4.4.

Water Movements will typically be measured and or metered unless meters are operating in an unsatisfactory fashion. Estimates of groundwater pumped will be the difference between total pumped from the quarry less the calculated runoff, direct rainfall, and diffuse water captured.

Water Movements around the Quarry

Water movements around the quarry are shown on Figure 4.1. Groundwater components of the water pumped from the pit is calculated as a percentage of the total volume as discussed below and in Figure 5.

Inputs to the system include direct precipitation (A6 on Figure 4.1), groundwater inflows, storm water inflows (A5 on Figure 4.1) or other return flows to the quarry (not currently used). Precipitation will be recorded by the weather station and summarized on a daily basis for water runoff calculations. The groundwater component (A8 on Figure 4.1) will be calculated. The calculations are represented on Figure 5, Table of Water Movements.

Outputs to the system will include water pumped from the quarry (A1 on Figure 4.1) and evaporation (A9 on Figure 4.1). The water leaving the quarry via the pump may end up either being used for quarry dust suppression, stream water augmentation (discharged to augmentation point number SW1A, as discussed later) or to the freshwater pond. The volumes

for dust suppression and stream augmentation will be metered or, in the case of suspected anomalous data, these volumes will be estimated.

Water Movements around the Freshwater Pond

Water movements around the freshwater pond are shown on Figure 4.2. The groundwater component of the water leaving the freshwater pond is calculated as a percentage of the total volume as discussed below and in Figure 5.

Five sources of water contributing to the volume entering the freshwater pond

1) Water from the quarry, a percentage of which is estimated groundwater resulting from the prior calculations. Some or all of the quarry volumes may be diverted to stream augmentation and/or dust control (A1, A4, and A11 on Figure 4.2).
2) Storm water inflows into the freshwater pond (B5 on Figure 4.2),
3) Direct precipitation into the pond (B6 on Figure 4.2),
4) Water pumped from a permitted diversion point (E1 on Figure 4.2), and
5) Water returned from the recycle, re-use and recharge facility (Troy) (C1 on Figure 4.2).

These various input sources of water into the freshwater pond serve to dilute the percentage of water in the pond that is pit groundwater. (Please see Figure 5)

Sources of water leaving the freshwater pond

1 Water pumped to plant processes (B1 on Figure 4.2),
2) Water that evaporates from the pond (B9 on Figure 4.2), and
3) Dust suppression (B4 on Figure 4.2)

Even though the freshwater pond is typically managed to facilitate not using the emergency spillway, an additional source for water leaving the freshwater pond would be to emergency spillway overflows during large or extended rainfall events.

Water Movements around the Plant

Water movements around the Plant shown are shown on Figure 4.3. Water is pumped to a variety of plant processes. The groundwater components of the water entering the plant are

essentially the same as the groundwater component leaving the plant. This is the same percentage as is present in the freshwater pond.

Plant Inputs

Water pumped to the plant (D7 on Figure 4.3) is metered and this water is collected through a variety of sumps then moved to the recycle, re-use and recharge facility (see D1 on Figure 4.3).

Plant Water Movement Outputs

Losses from moisture content shipped offsite (D14 on Figure 4.3) are calculated based upon actual shipments and measured moisture contents. Moisture content, by product, is tested and tracked at the facility. The average moisture content for each product will be used for the entire reporting quarter. The remaining difference is considered other losses (D13 on Figure 4.3). Other water losses through these processes can include dust control for roads and transfer points, and screening and washing which may not be completely captured through the collection and recycling process These losses combined are considered to be consumptive uses; however, only a portion of these are actually pit groundwater.

Volumes pumped to and from the Plant will be measured and recorded on a quarterly basis. Estimates will only be required when measuring equipment is out of service.

Water Movements around the Recycle, Re-Use and Recharge Facility

Water is pumped from the plant to the recycle re-use and recharge facility (Troy). This movement will be measured and/or estimated and recorded on a quarterly basis. Portions of the water delivered to Troy will be recycled to the freshwater pond. The remaining portions will serve as recharge to the Arbuckle Simpson Aquifer or held in storage at the recharge pit.

Water movements around the recycle, re-use and recharge basin are shown on Figure 4.4 and also in tabular form on Figure 5. This structure is a dedicated recycle, re-use and recharge facility, and qualifies as a Groundwater Augmentation Basin as defined in OAC 785:30-15-5(b).

Inflows into the facility include:

1. Water recycled from the plant (C7 on Figure 4.4),
2. Volumes from Runoff (C3 on Figure 4.4),

3. Direct Precipitation (onto area C6 of Figure 4.4)

Outflows from the recharge recycle and re-use basin include:

1. Water pumped (recycled) to the freshwater pond (C1 on Figure 4.4),,
2. Evaporation (from area D9 of Figure 4.4), and
3. Recharge to the Arbuckle Simpson Aquifer(C12 on Figure 4.4)

A major component of the water balance at Troy is the change in storage of the facility. Change in storage is calculated by measuring the level of the recycle pond. The elevation can be determined from pressure head, recorded electronically on a daily basis. Variations in elevation can result in variations in surface area which impact evaporation and direct precipitation. By tracking inflows, outflows and change in storage, we are able to calculate recharge of water into the Arbuckle Simpson Aquifer. The one-time demonstration of recharge (groundwater augmentation), in accordance with OAC 785:30-15-5(b)(4) is shown in Appendix A. This demonstration is based upon 3 months of data from the 1st quarter of 2013. This facility demonstrates a positive contribution to groundwater recharge; therefore, evaporation from this facility is not considered a consumptive use per OAC 785:30-15-5(b)(1).

Augmentation

"The beneficial discharge of water into a stream emanating from a Sensitive Basin or into a location that is likely to flow or percolate into a Sensitive Basin" (OAC 785:30-15-2. Definitions) is occurring. As discussed more below, groundwater recharge from the recycle re-use and recharge facility has been taking place in an ongoing manner at the facility. In 2013, water management strategies were adjusted so as to provide additionally for surface water augmentation at beneficial times. Thus, TXI's Mill Creek facility has been, and continues to contribute to the recharge of the Arbuckle Simpson Aquifer recharge for some time. Augmentation and Recharge Features are shown on Figure 3.

Groundwater Recharge (Augmentation)

Monitoring conducted by TXI shows that recharge to the Arbuckle Simpson Aquifer is occurring through the operation of the recycle re-use and recharge facility (Troy). The demonstration of recharge is contained in Appendix A using the equation contained in OAC 785:30-15-5(b)(4). The information in Appendix A is based upon 3 months of pumping and monitoring of water levels with a pressure transducer. As such, TXI will continue to operate, monitor, and send

water to the Troy facility for aquifer recharge. The location of this recharge area is shown on Figure 3. This facility is about 40 acres in size with a centroid of 364,300N and 2,318,300 E (US State Plane Coordinate System, Oklahoma 3502, Southern Zone).

Surface Water Augmentation

Continued review and analysis of process and water movements to seek opportunities to effectively manage TXI's water movements in a fashion which will enable stream augmentation when appropriate will be conducted at the Mill Creek facility. TXI has determined that, as water is moved around the site, the facility will be able to focus upon creating storage prior to high and/or extended rainfall events and releasing water during periods of lower flow. Continued analysis of water needs and movements will enable effective stream water augmentation under appropriate conditions. In general it is TXI's intent to normally augment surface water flows, for augmentation credits and for surface water use with respect to its stream water use permit, at stream flows equal to or less than the 50% exceedance flows. In accordance with OWRB guidance and as outlined in 785:30-15-5 TXI is relying upon the USGS Streamstats data from the Mill Creek gauge just west of the Town of Mill Creek to evaluate the 50% exceedance level. A copy of this flow status report is presented in Appendix B, and indicates that the median flow is 9.02 cubic feet per second (CFS); however, TXI may augment stream flows for such purposes under any situation allowed or contemplated by the statute. Augmentation Points 1 and 2 are shown on Figure 3

- Surface Water Augmentation Point 1 discharges through a diffuser to an unnamed tributary of Bee Branch which flows to Mill Creek. All coordinates are (US State Plane Coordinate System, Oklahoma 3502, Southern Zone)
    - The discharge point is located at about 373,850N and 2,314,650 E (shown as 1A on Figure 3).
    - Entry into Bee Branch occurs near 374,950N and 2,317,200E (shown as 1B on Figure 3)..
    - Bee Branch flows into Mill Creek at about 363,750N and 2,322,550E (shown as 1C on Figure 3).

- Augmentation Point 2 is currently not being utilized. All coordinates are (US State Plane Coordinate System, Oklahoma 3502, Southern Zone.
- The estimated discharge point is to an unnamed tributary located at about 363,200N and 2,317,800E. This area is near several unnamed intermittent springs (shown as 2A on Figure 3).

This tributary flows into Mill Creek at about 362,600N and 2,322,200E (shown as 2B on Figure 3).

Consumptive Use Of Groundwater

The consumptive use of piit groundwater will be reported upon Appendix C of the Rules. We have included a copy of this as Figure 5.1 of this Site Specific Water Management and Conservation Plan. This Figure refers directly to Figure 5 of the Table of Water Movements. It should be noted that the groundwater component of the water movements varies continuously due to reasons identified in this document as sources of storm water, direct precipitation, recharge, recycle and augmentation become part of the water balance in various steps of the process. These components are expressed on Figures 5 and.1. As shown the uses are primarily estimated around waters entering and leaving the plant process, but they also include other items such as the evapotranspiration components for non-recharge facilities and dust suppression uses. To groundwater component of the pitwater, is the product of the consumptive uses of water and the percentage of that water that is pit groundwater

Monitoring Groundwater Levels

Although exempt mines are not required to install monitoring wells, TXI has voluntarily installed OWRB Well ID number 133263 to a depth of 180 feet. The initial water level in this monitoring well was recorded by the driller to be 55.7 feet. The location of this well is shown on Figure 3. Monitoring Well completion and plugging reports may be found in Appendix C.

This well will be monitored with data logger at intervals of one hour or less. The data logger will be checked and downloaded on approximately a monthly basis. A graph of water levels at the end of each quarter will be reported.

Quality Assurance Plan

Meters and gauges will be checked on scheduled work days. If gauges and /or meters are found to be functioning inappropriately they will be serviced. Reasonable estimates will be made while meters and gauges are behaving anomalously. Third party calibration will be checked by appropriately qualified vendors and on routine intervals, consistent with industry practices and manufacturers recommendations.

Transducers used for monitoring of water levels in ponds and the well site will be monitored for battery anomalies. Water level readings will be visually inspected for anomalous readings. If anomalous readings are suspected, transducers will be removed and returned to the vendor for replacement and or repair. Data logs will be unavailable during this period.

TXI's onsite weather station is monitored and maintained by a third party consultant. Data is compared with the Tishomingo mesonet site for anomalous behavior. As mentioned previously, if anomalous behavior is suspected, TXI will use the Tishomingo mesonet site in lieu of on-site station during anomalous periods

Moisture content analyses are performed periodically on material that is shipped from the plant. The actual method is prescribed by the end user; however, the method is consistent with ASTM, OKDOT, TXDOT or other similar applicable specifications. Data is recorded by product type and a running average used for the reporting period.

WATER CONSERVATION

The TXI Plant is designed and operated to conserve water through recycling and reuse in plant processes. Water conservation is facilitated through operation of the freshwater holding pond and the recycle re-use and recharge facility (Troy).

During initial permitting operations in 2000, TXI identified a need for about 1423 Acre-feet of water that it would require on an annualized basis to meet it's near term market demand to process aggregates. Although state law provided for an exemption to the permitting and use of

pit water at existing sites, including TXI, the recent passage of SB 288 and SB 597 have elevated the awareness of water use in the Arbuckle Simpson Aquifer. Despite the decline in market demand for aggregate products over the past several years, TXI looks forward to returning to planned demand levels for which the plant was designed. Due to the nature and magnitude of water movements, water conservation and recycling efforts as described above have been implemented by TXI. Water movement and management is critical for TXI's mining and processing operation, as is TXI's continued efforts to optimize re-use and recharge at the facility. The ability to capture and reuse water from the variety of processes has improved over time and continues to do so. In fact, initial information suggests that over 80 percent of the water moved to plant processes is recycled to the freshwater pond. Continued monitoring may allow TXI to identify further opportunities for economical water conservation efforts.

FIGURE 1
TXI
GENERAL LOCATION MAP

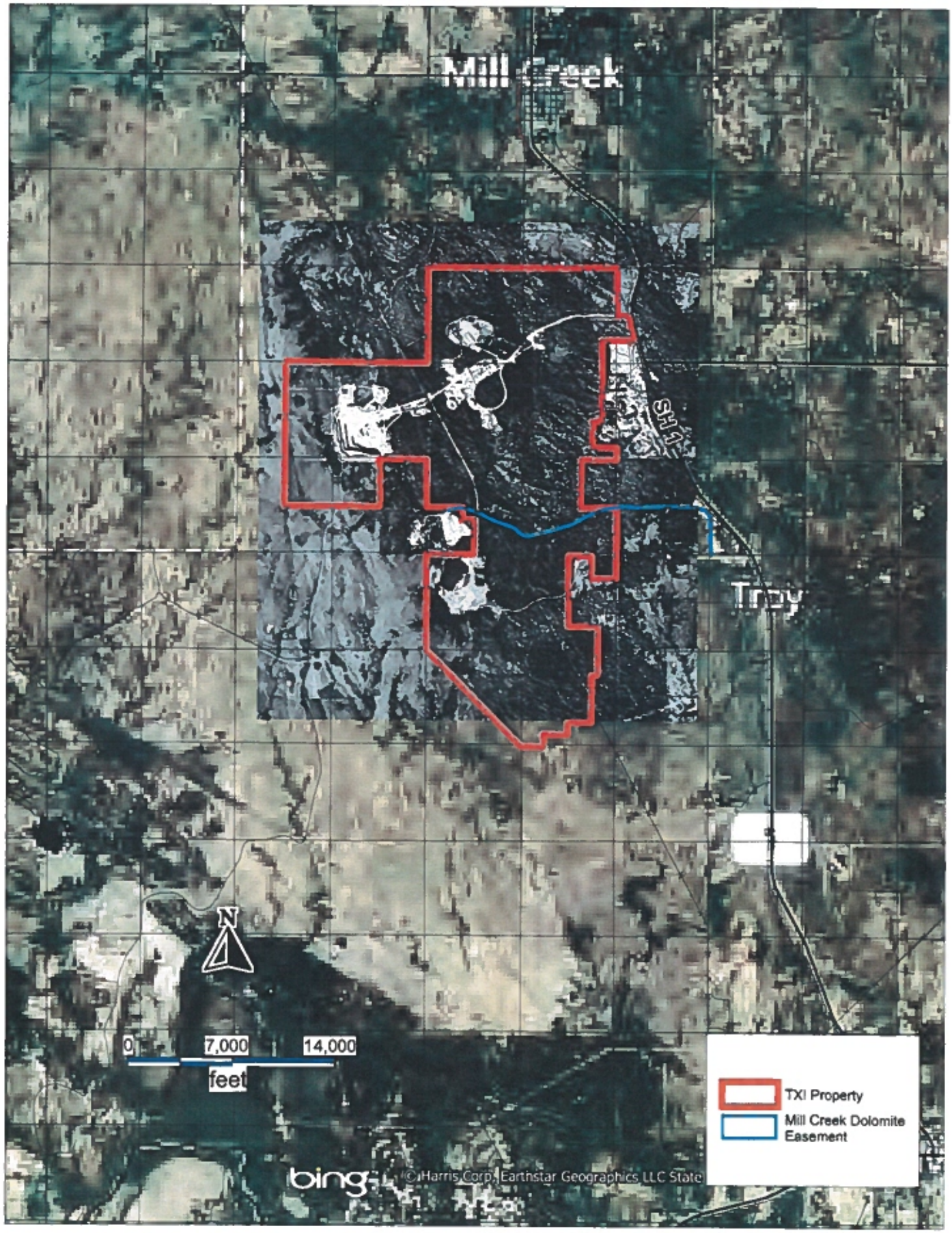


FIGURE 2
GENERAL LOCATION MAP W/
USGS TOPOGRAPHY WITH SECTION LABELS

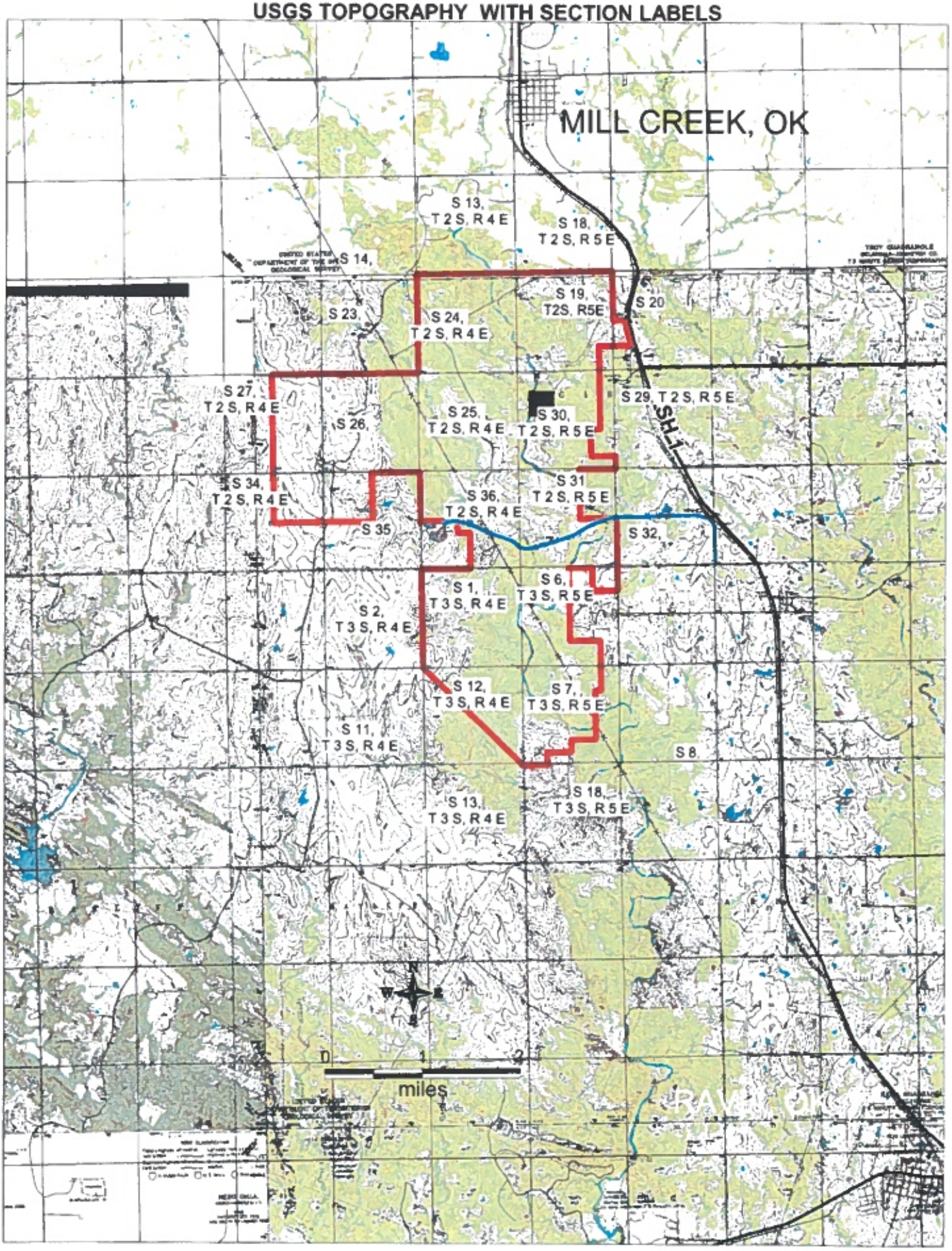


FIGURE 3
ALLOCATION AND AUGMENTATION LOCATIONS
FOR SURFACE WATER AND GROUNDWATER

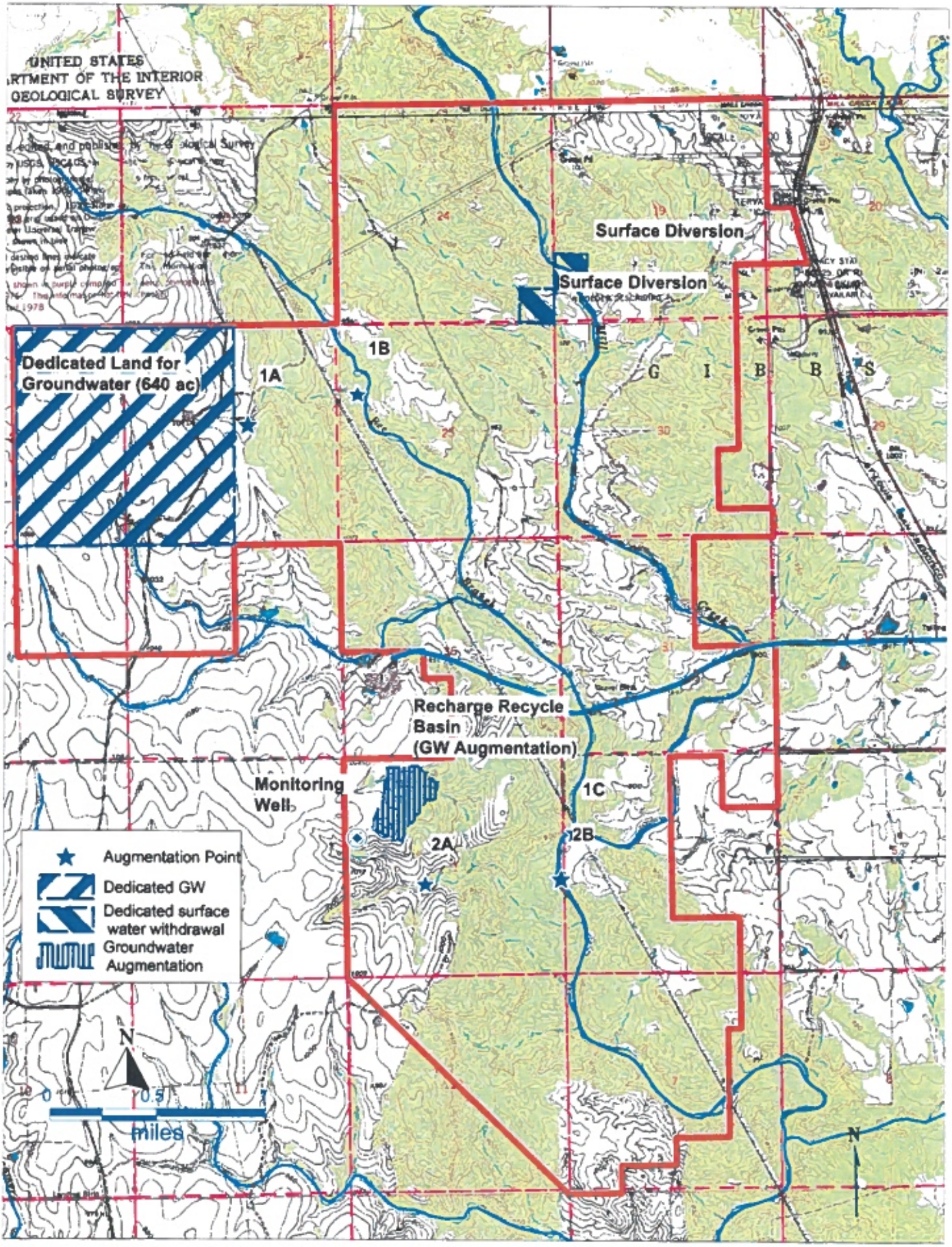


FIGURE 4
GENERALIZED SCHEMATIC OF WATER MOVEMENTS

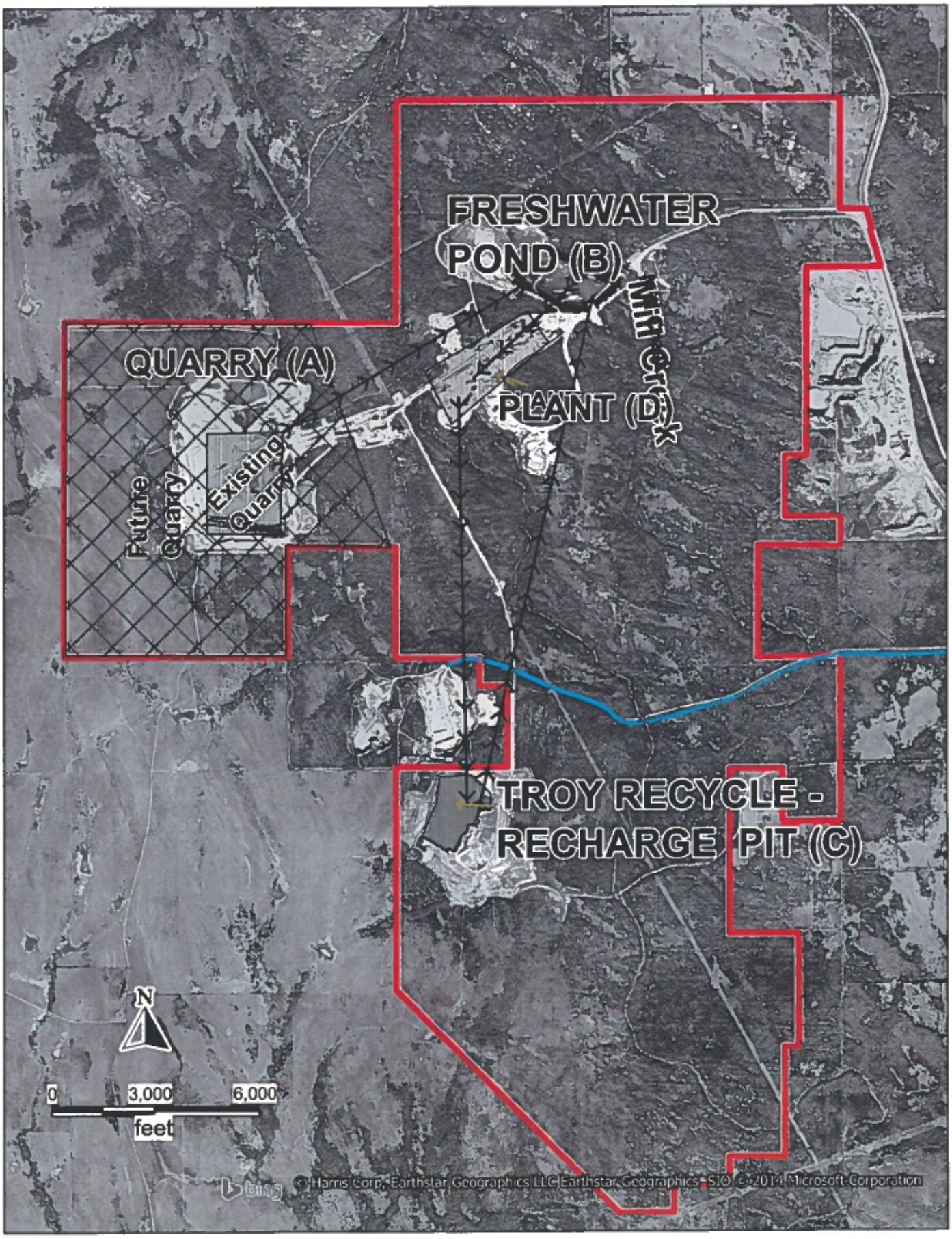


FIGURE 4.1
QUARRY WATER MOVEMENTS

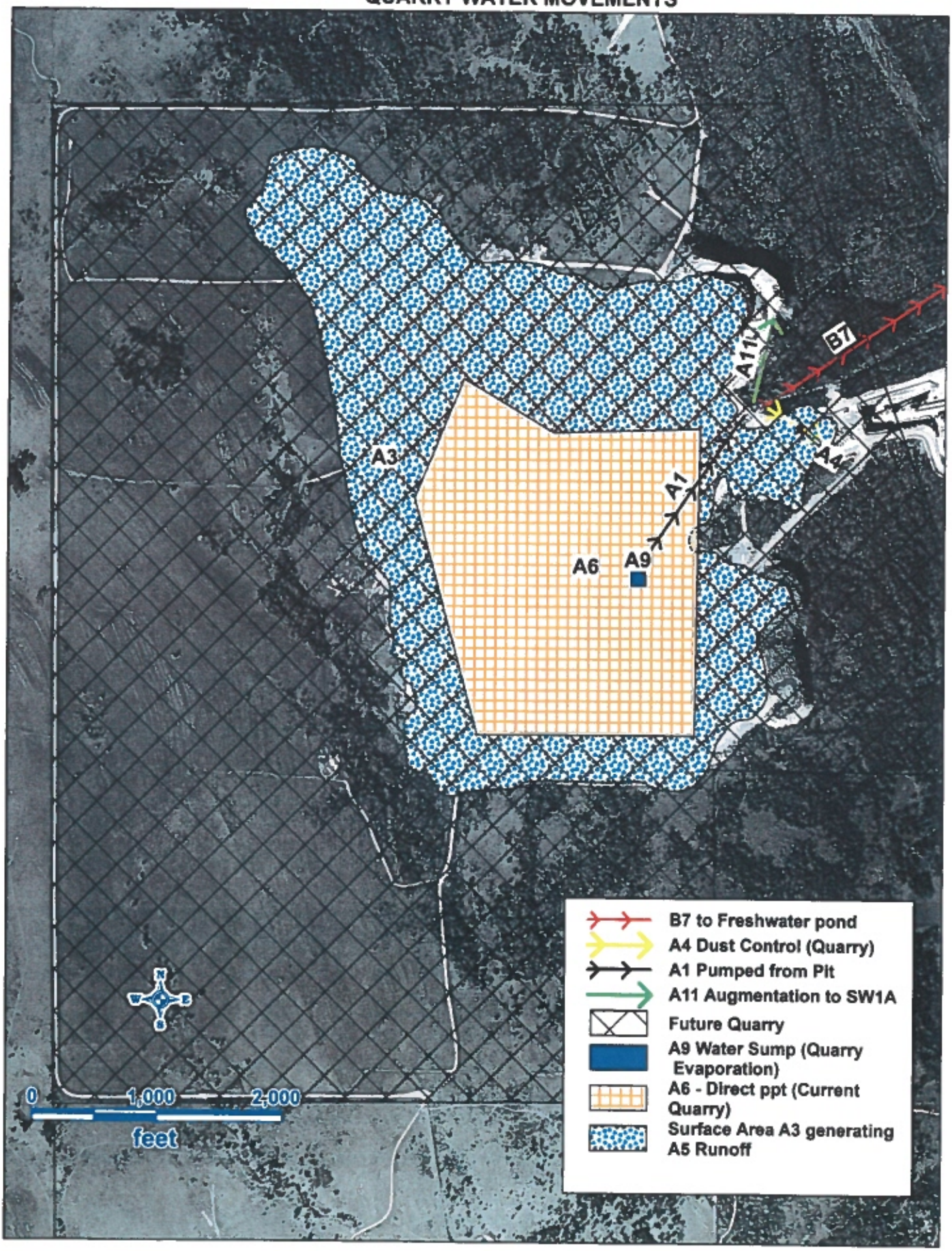


FIGURE 4.2
FRESHWATER POND WATER MOVEMENTS

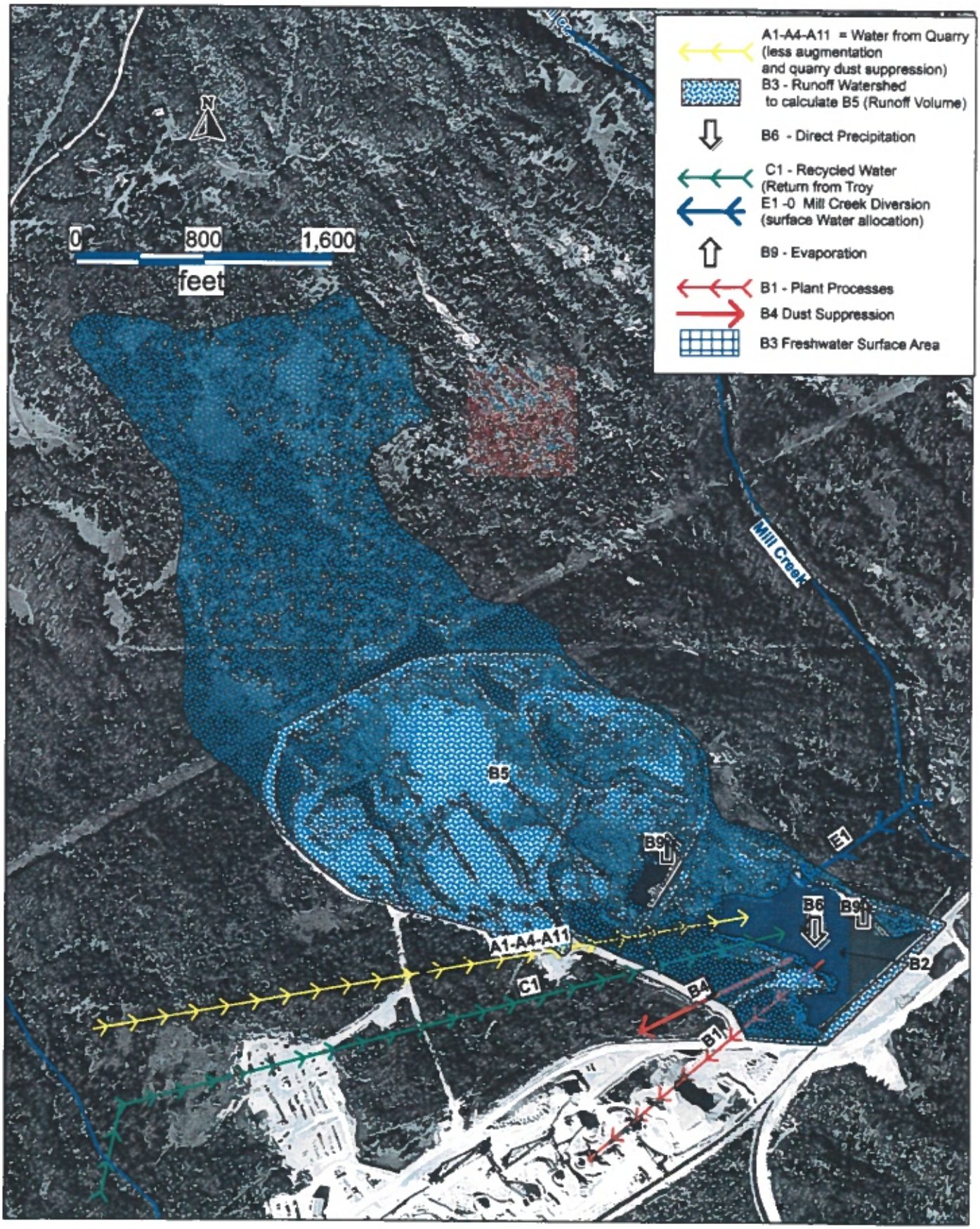


FIGURE 4.3
PLANT WATER MOVEMENTS

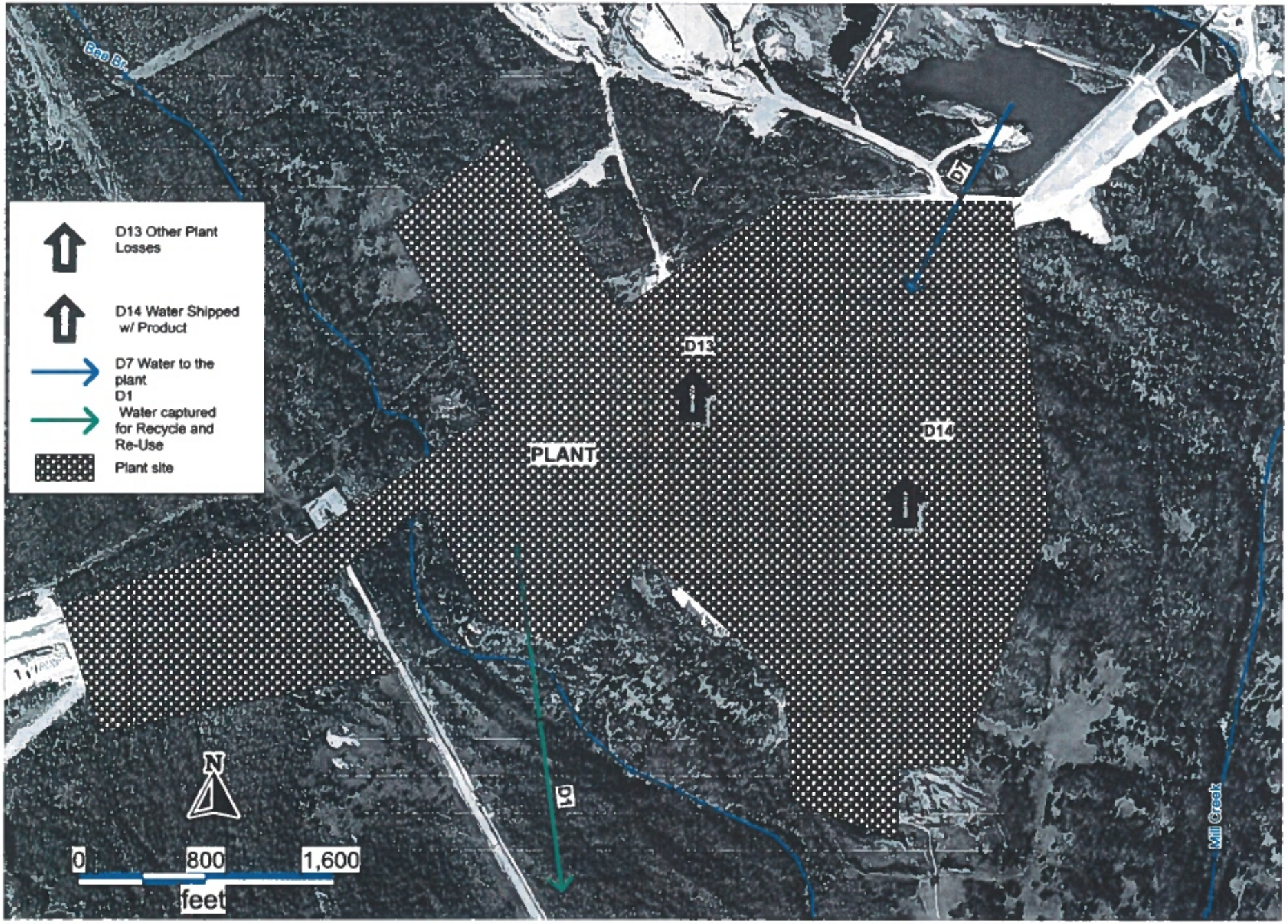


FIGURE 4.4
TROY RECYCLE AND RECHARGE FACILITY

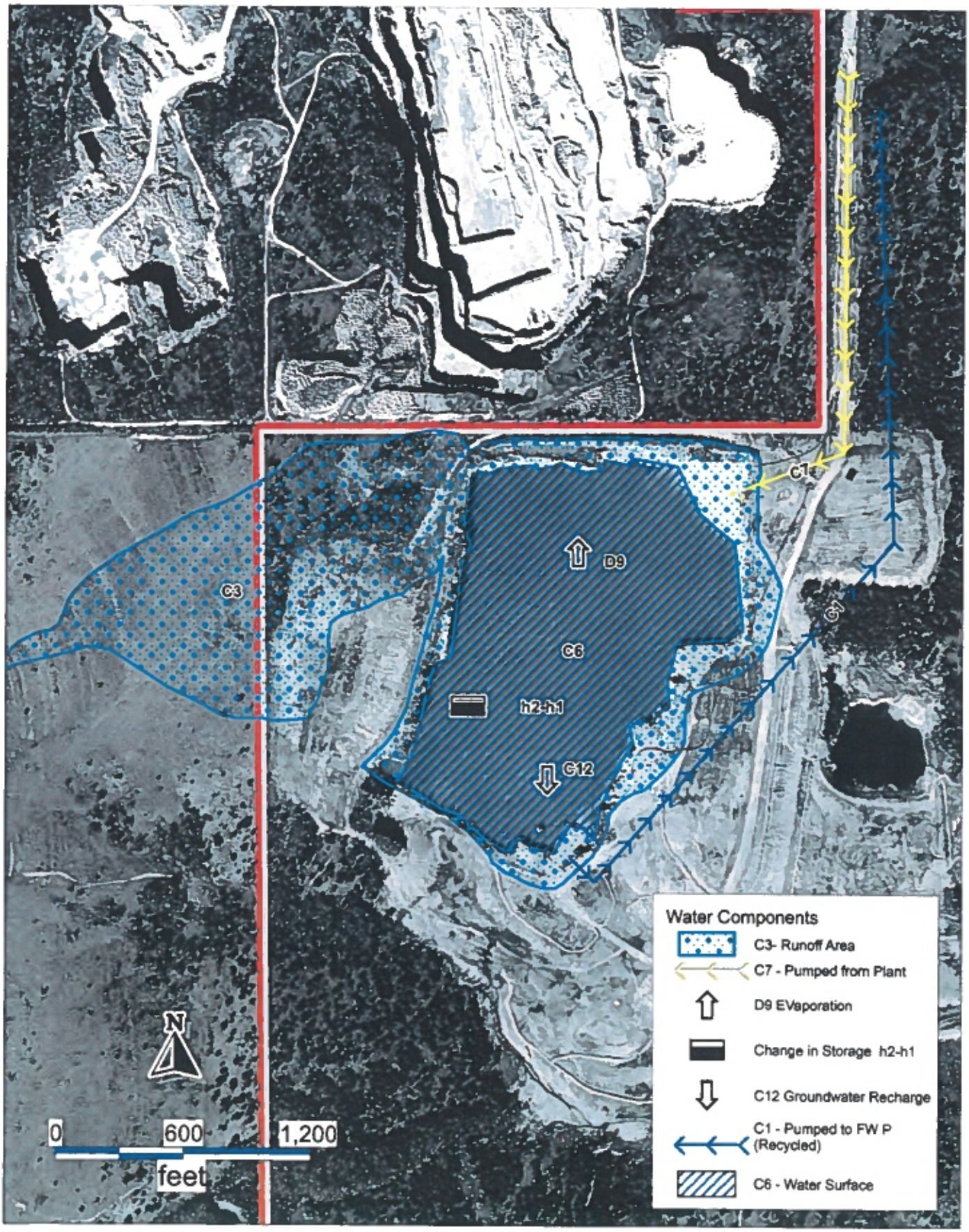


FIGURE 5

Table of Water Movements

		A - Quarry	B (Freshwater Pond)	C- Recharge and Recycle Facility	D - Plant	E -Surface water allocation (Mill Creek)
1	Water pumped away (Ac-Ft)	A1	B1	C1	D1	E1
2	Surface area of water (Ac)	A2	B2	C2		
3	Surface area of runoff (Ac)	A3	B3	C3		
4	Water diverted for dust suppression (Ac-Ft)	A4	B4			
5	Volume of runoff (Ac-Ft)	A5	B5	C5		
6	Volume of direct Precipitation (Ac-Ft)	A6	B6	C6	D6	
7	Water Pumped into the Area (Ac-Ft)	A7	B7= (A1-A4-A11) +C1+E1 +B5+B6	C7 = D1	D7=B1-B4	
8	Groundwater volume (Ac-Ft)	A8 = A1-(A5+A6+A7)	B8 = ((A1-A4)*A10)	C8= (B10*C7)	D8=C8= (B10*C7)	
9	Evaporation (Ac-Ft)	A9	B9	C9	D9	
10	%GW	A10= A8/A1	B10 = A8/ B7	C10=(D1*B10)/ (D1+C5+C6)	D10= B10	
11	Augmentation -Surface Water	A11				
12	Groundwater Recharge			C12		
13	Other losses				D13=D7-D1-D14	
14	Water shipped w Product				D14	

see Figure 5.1 for Consumptive Use of Pitwater

A1, B1, C1, D1, E1	metered and or measured
A2, B2, C2	measured
A3, B3, C3	measured
A4, B4	metered and/or measured
A5, B5, C5	From SCS Runoff Model - and weather station mesonet* input
A6, B6, C6, D6	From SCS Runoff Model - Quarry
A7	metered and or measured
A8	metered or measured
A9, B9, C9	A sum of daily pan evaporation values from TXI's weather Station and/or mesonet site (in feet) times the water area
A11	All or a portion of A1
C12	from Recharge Balance Sheet

Mesonet date will come from Tishomingo site , if working appropriately until TXI's site becomes fully functional. **Note:** if evaporation data is not available, data will be an avg. of the data 2 days before and 2 days after the subject time frame.

Figure 5.1

TXI Mill Creek

(from Appendix C of Rules) . Consumptive use of Pitwater

The values in this Refer to Figure 5.0

PIT GROUNDWATER VOLUME			
1	Total volume pumped from producing mine pit(s) (AC-FT)		A1
2	Volume of precipitation that falls onto the surface of producing Mine Pits (AC-FT)		A6
3	Portion of total precipitation that flows over the land surface that drains into the mine pit water (AC-FT)		A5
4	other non pit waters pumped from the producing mining pit (AC-FT)		A7
5	add lines 2 through 4		A7+A6+A5
6	**Pit Groundwater Volume (AC-FT)** (line 1 minus Line 5)		
DEFINED ELEMENTS OF CONSUMPTIVE USE			
7	Vol. of pit groundwater that is driven off (by drying) the mined material transp. off of the mine site (AC-FT)		NA
8	Vol. of pitwater that is carried away with the the mined material transp. off of the mine site (AC-FT)		D14 x D10
9	Vol. of pit groundwater that evaporates from producing mine pits, process ponds and lined ponds (excluding structures used for augmentation) (AC-FT)		A9 x A10
10	Volume of pit groundwater that is used for other beneficial uses off of the mine site (AC-FT)		4.13
11	**DEFINED ELEMENTS OF CONSUMPTIVE USE** of Pit groundwater (AC-		**#VALUE!**
PIT GROUNDWATER BALANCE			
12	Lines 6 minus 11		#VALUE!
13	**Groundwater Augmentation** Volume of pit groundwater returned to returned to GW Basin or subbasin. (Troy Recharge AC-FT)	**Credits**	C12 =
14	**Stream Augmentation** volume of pitwater discharged to a definite Stream, during flow conditions that are less than or equal to the accepted exceedance level (AC-FT)		A11
15	**PPT and Runoff** Volume of Precipitation and surface runoff into a recharge pit or holding pond (AC-FT)		C6
16	**Recycled Pit Groundwater** - Volume of ground water returned to the mine pit or holding basin (AC-FT)		C1*C10
17	**Other Non-Consumptive Losses** Including pit GW returned to the land surface from which surface runoff flows into a mine pit and other losses (AC-FT)		(D7-D1-D14)* D10
18	add lines 13 through 17		#VALUE!
19	**OTHER CONSUMPTIVE USE** Line 12 minus Line 18		#VALUE!
TOTAL REPORTED CONSUMPTIVE USE (AC-FT)			
	TOTAL NET CONSUMPTIVE USE (AC-FT) Line 11 plus line 19		#VALUE!

FIGURE 6
TYPICAL RESULTS FORMAT FROM RUNOFF MODELLING

2013		Quarry Monthly Totals		FW Pond Monthly Totals		Re-cycle Recharge (Troy) Monthly Totals		TXI-Mill Creek Totals	
	PPT.	Direct ppt	Runoff	Direct ppt	Runoff	Direct ppt	Runoff	Direct ppt	Runoff
	Inches	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
January	2.30	0.03	13.26	4.18	0.27	7.80	1.95	12.00	15.48
February	3.26	0.04	27.83	5.93	2.64	11.05	7.86	17.01	38.32
March	1.16	0.01	3.69	2.11	0.01	3.93	0.25	6.05	3.95
Q1 Subtotal	6.72	**0.08**	**44.78**	**12.22**	**2.91**	**22.78**	**10.06**	**35.07**	**57.75**
April	2.11	0.02	8.15	3.84	0.04	7.15	0.63	11.01	8.82
May	7.34	0.09	103.44	13.35	28.19	24.88	49.80	38.31	181.44
June	3.53	0.04	27.92	6.42	2.03	11.96	6.62	18.42	36.57
Q2 Subtotal	12.98	**0.15**	**139.51**	**23.60**	**30.27**	**43.99**	**57.05**	**67.74**	**226.83**
July	3.85	0.04	32.33	7.00	2.25	13.05	8.04	20.09	42.63
August	2.21	0.03	14.17	4.02	0.47	7.49	2.42	11.53	17.07
September	0.76	0.01	3.27	1.38	0.01	2.58	0.23	3.97	3.51
Q3 Subtotal	6.82	**0.08**	**49.77**	**12.40**	**2.73**	**23.11**	**10.70**	**35.59**	**63.21**
October	4.21	0.05	39.93	7.66	5.96	14.27	13.92	21.97	59.80
November	2.68	0.03	22.86	4.87	2.29	9.08	6.66	13.99	31.81
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q4 Subtotal	6.89	**0.08**	**62.78**	**12.53**	**8.25**	**23.35**	**20.58**	**35.96**	**91.61**
ANNUAL TOTALS	**33.41**	**0.39**	**296.84**	**60.75**	**44.17**	**113.23**	**98.39**	**174.37**	**439.40**

Figure 5 Cell = **A6** **A5** **B6** **B5** **C6** **C5**

These are estimates based upon 2013 data note December missing

APPENDIX A

RECHARGE DEMONSTRATION

ATTACHMENT 2

Demonstration of TXI's Recharge at its recycling and recharge facility

mass balance basis applicable equation is:

$GWa = Ba * [(h2 - h1) - (E * 0.7)] + (I - O)$

Where:

GWa the volume of water exiting the bottom and sides of the augmentation basin;

Ba the surface area of the augmentation basin (assumes vertical sides);

h1 the elevation of the water level in the basin at the beginning of the applicable time period determined using the installed staff gage;

h2 the elevation of the water level in the basin at the end of the applicable time period;

0.7 the lake evaporation coefficient applied to pan evaporation;

E the calculated pan evaporation rate determined at the nearest Mesonet station determined as the sum of daily values for the applicable time period;

I the total inflow volume of water to the basin from all sources (including rainfall) for the applicable time period (it may be zero (0)) determined by measurement or reasonable estimation; and

O the total outflow volume of water from the basin

Ba= 40.67 Acres
h1= 964.6 ft
h2= 966.5 ft
E= 10.89 inches = 0.9075 ft.
I= 2,079.48 Ac-ft pumped to the recharge facility
O= 2,046.64 Ac-ft pumped away from the recharge facility

GWA 84.27238 Ac Ft

Recharge Test data supports recharge-

Evaporation from Recharge/ Recycle Facility is not a consumptive use

APPENDIX B

USGS STREAMSTATS SITE REPORTS

FOR

MILL CREEK GAUGING STATION

WEST OF MILL CREEK, OKLAHOMA

USED FOR ESTIMATING MEDIAN FLOWS

USGS
Oklahoma StreamStats

Streamstats Ungaged Site Report

MILL CREEK AT USGS GAGE West of the Town of MILLER OK.

Date: Tue May 28 2013 07:53:33 Mountain Daylight Time
Site Location: Oklahoma
NAD27 Latitude: 34.4052 (34 24 19)
NAD27 Longitude: -96.8630 (-96 51 47)
NAD83 Latitude: 34.4052 (34 24 19)
NAD83 Longitude: -96.8633 (-96 51 48)
Drainage Area: 46.67 mi2
Percent Urban: 3.27 %
Percent Impervious: 0.18 %

Peak-Flow Basin Characteristics

100% Peak Statewide Unregulated 2010 5137 (46.7 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Contributing Drainage Area (square miles)	46.7	0.1	2510
Stream Slope 10 and 85 Method ft per mi (feet per mi)	11.3	1.98	342
Mean Annual Precipitation (inches)	41.66	16.6	62.1

Floodwater Retarding Structure Regulated Peak-Flow Basin Characteristics

51% Peak Statewide NRCS Regulated 2010 5137 (23.9 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Unregulated Drainage Area (square miles)	23.9	0.1	2510
Stream Slope 10 and 85 Method ft per mi (feet per mi)	11.3	1.98	342
Mean Annual Precipitation (inches)	41.66	16.6	62.1

Flow-Duration Basin Characteristics

100% Duration Region 2 2009 5267 (46.7 mi2)

Parameter	Value	Regression Equation Valid Range	
		Min	Max
Contributing Drainage Area (square miles)	46.7	4.02	7159
Jun to Oct Gage Precipitation (inches)	18.7 (above max value 17.9)	13	17.9
Stream Slope 10 and 85 Method ft per mi (feet per mi)	11.3	2.07	27
Elevation of Gage (feet)	992	518	1190
Nov to May Gage Precipitation (inches)	22.9 (above max value 19.2)	12.5	19.2
Mean Annual Precip at Gage (inches)	41.6	33.7	45.6

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Peak-Flow Streamflow Statistics

Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	2590	47	2		
PK5	5020	35	5		
PK10	7300	32	8		
PK25	11000	35	9		
PK50	13900	34	11		
PK100	16800	36	12		
PK500	25400	43	12		

Floodwater Retarding Structure Regulated Peak-Flow Streamflow Statistics

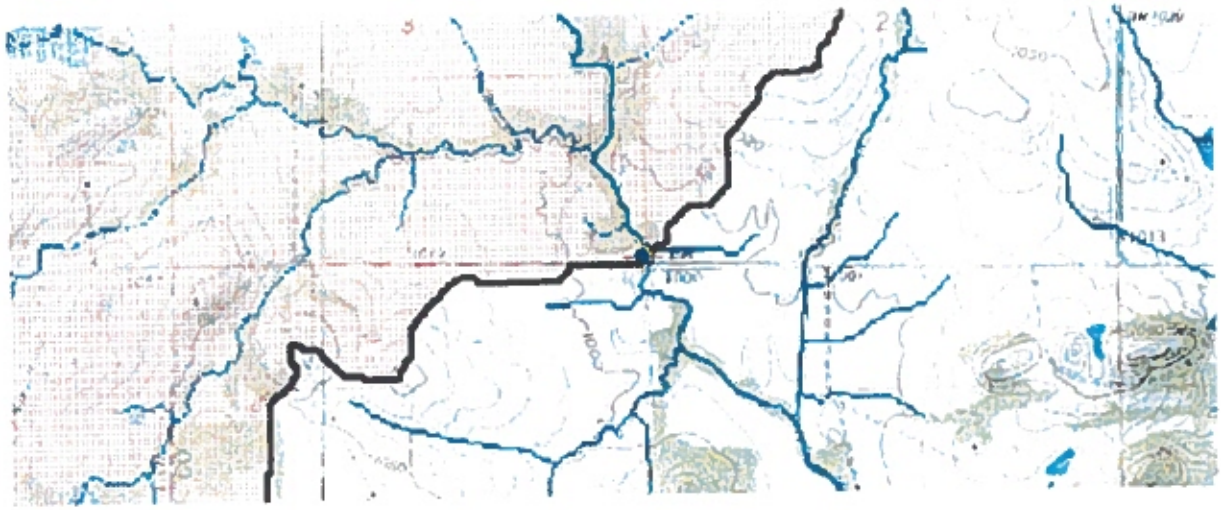
Statistic	Flow (ft^3/s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum

PK2C	1660	47	2		
PK5C	3230	35	5		
PK10C	4690	32	8		
PK25C	7090	35	9		
PK50C	8950	34	11		
PK100C	10900	36	12		
PK500C	16600	43	12		

Flow-Duration Streamflow Statistics

Statistic	Flow (ft^3/s)	Estimation Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
AVE_DV	29.9				
D20	32.3				
D50	9.02				
D80	2.32				
D90	1.21				
D95	1.04				
D20SUM	16.9				
D50SUM	4.32				
D80SUM	1.96				
D90SUM	1.56				
D95SUM	0.86				
D20WSP	41.3				
D50WSP	15.1				
D80WSP	4.01				
D90WSP	1.91				
D95WSP	1.39				
JAND20	32.1				
JAND50	11.3				
JAND80	3.38				
JAND90	1.68				
JAND95	1.74				
FEBD20	36.9				
FEBD50	14.5				
FEBD80	4.47				
FEBD90	2.97				
FEBD95	1.71				
MARD20	47.6				
MARD50	18.8				
MARD80	6.63				
MARD90	3.53				
MARD95	1.75				
APRD20	51.6				
APRD50	21.8				
APRD80	8.58				
APRD90	4.29				
APRD95	2.52				
MAYD20	43.7				
MAYD50	13.2				
MAYD80	4.63				
	2.4				

MAYD90					
MAYD95	1.22				
JUND20	36.6				
JUND50	8.84				
JUND80	2.9				
JUND90	1.76				
JUND95	0.86				
JULD20	11.7				
JULD50	4.87				
JULD80	0.94				
JULD90	0.76				
JULD95	0.51				
AUGD20	5.03				
AUGD50	2				
AUGD80	0.73				
AUGD90	0.54				
AUGD95	0.34				
SEPD20	8.55				
SEPD50	2.24				
SEPD80	0.69				
SEPD90	0.48				
SEPD95	0.026				
OCTD20	12.8				
OCTD50	2.92				
OCTD80	0.82				
OCTD90	0.37				
OCTD95	0.078				
NOVD20	30.3				
NOVD50	6.82				
NOVD80	2.09				
NOVD90	2.12				
NOVD95	1.27				
DECD20	30.9				
DECD50	9.33				
DECD80	3.1				
DECD90	2.17				
DECD95	2.06				



APPENDIX C

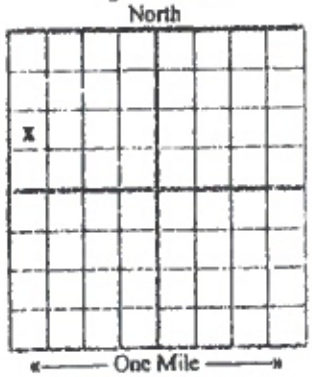
MONITORING WELL

COMPLETION & PLUGGING REPORT

MULTI-PURPOSE WELL COMPLETION & PLUGGING REPORT

Oklahoma Water Resources Board
3800 North Classen Boulevard
Oklahoma City, OK 73118
Telephone (405) 530-8800

Legal Location
North



WELL ID NUMBER: 133263

Quarters NW-SW-NW Section 01 Township 03S Range 04E

Latitude 34.32729 Longitude -96.84503

Date collected(latitude and longitude), if different from date the well was drilled: 12/08/2010

Method latitude and longitude was collected: GPS - uncorrected data

County Johnston

Variance Request No. (if applicable) n/a

WELL OWNER - NAME AND ADDRESS

Well Owner TXI

Phone ____

Address/City/State MILL CREEK OK

Zip ____

Finding Location ____

Well Name 10-3gmw

Water Rights #: ____

TYPE OF WORK: Groundwater Well

USE OF WELL: Piezometer

NEW WELL CONSTRUCTION DATA

Date Well or Boring Was Completed 12/08/2010

Number of wells or borings represented by this log 1

* (Borings are within the same 10 acre-tract and with the same general depths and lithologies)

Hole Diameter 6 inches to a depth of 180 ft.

CASING INFORMATION *Note: If surface casing is used please indicate that on the appropriate well casing information line.

Surface Pipe Material: __ Surface Pipe Diameter __ inches Surface Pipe From __ ft to __ ft

1) Well Casing Material PVC Casing Diameter 2 inches Casing From 0 ft to 180 ft

SCREEN OR PERFORATION INFORMATION

Type of Screen: PVC Type of Slots or Openings: Factory Slotted - 20 slot (0.020 inch) From 65 ft to 95 ft.

Type of Screen: PVC Type of Slots or Openings: Factory Slotted - 20 slot (0.020 inch) From 125 ft to 175 ft.

FILTER PACK INFORMATION

Filter Pack Material: Coarse Sand

Filter Pack Interval: From 40 ft to 180

WELL SEAL INFORMATION

Type of Surface Seal Cement Grout — Surface Seal Interval: From 0 ft to 20 ft

Type of Annular Seal n/a — Annular Seal Interval: From n/a ft to n/a ft

Filter Pack Seal Material n/a — Filter Pack Seal Interval: From n/a ft to n/a ft

TYPE OF COMPLETION: Above Ground

HYDROLOGIC INFORMATION

Depth to water at time of drilling 55.7 ft — Estimated yield of well 3 gpm — First water zone 65 ft

LITHOLOGY DESCRIPTION

MATERIAL	ENCOUNTERED FROM (ft.)	TO (ft.)	SATURATED
white lime rock	0	20	N
red lime rock	20	40	N
white lime rock	40	95	Y
blue lime rock	95	100	N
white lime rock	100	140	N
red lime rock	140	165	Y
white lime rock	165	180	N

WELL LOCATION TO POTENTIAL SOURCES OF POLLUTION

Has this well been disinfected after completion of work? Yes

Are than any potential sources of pollution or wastewater lagoons within 300 ft. of the well? n/a

Distance of Well is n/a from possible source. Type of possible source: n/a

PLUGGING INFORMATION

Date Well or Boring Was Plugged n/a — Total Depth of well being plugged __ ft.

Was the well contaminated or was it plugged as though it was contaminated? n/a

If the well or boring was plugged as if it was contaminated, was the casing removed or perforated? n/a

Was the grout tremied? n/a

Backfilled with n/a — Backfilled from ___ ft. to ___ ft.

Grouted with n/a — Grouted from __ ft. to __ ft.

Grouted with Cement — Grouted from __ ft. to __ ft.

Firm Name WILLIAMS DRILLING CO., INC. — D/PC No. DPC-0229

Operator Name TERRY WILLIAMS — OP No. OP-0358

Date 12/27/2010

Comments: bentonite plug from 20 to 40 ft. 6 in. steel sleeve with locking cap 3 ft. above ground surface. 3 by 3 concrete slab

APPENDIX D

WATER RIGHTS INFORMATION

OKLAHOMA WATER RESOURCES BOARD
PERMIT TO APPROPRIATE STREAM WATER

Stream System: Lower Washita River Number: SS 1-8-1 County: Johnston
Permit No.: 2000-013 Date Filed: May 2, 2000

The OKLAHOMA WATER RESOURCES BOARD hereby issues regular stream water permit number 2000-013 in the name of TXI Operations, LP whose address is 1341 West Mocking Bird Lane, Dallas, Texas 75247. The regular permit authorizes the taking and use of 783 acre-feet of water per calendar year for mining (operating quarry) purposes. Quarry operations are located on 80 acres as follows: 40 acs. in the NW NE and 40 acs. in the NE NW of Section 25, T2S, R4EIM. The water is to be diverted from one diversion point on Mill Creek in the NW SW SW of Section 19, T2S, R5EIM, Johnston County, at a rate not to exceed 3,000 gallons per minute.

The permit holder is authorized to proceed with the construction of the project in compliance with the application and permit, and subject to the following terms, conditions and limitations:

1. The use of water authorized under this permit shall not interfere with domestic or existing appropriative uses;

2. Construction on the proposed project must be started by the 11th day of July, 2002, and the permit holder has until the 11th day of July, 2007, to complete the project;

3. Upon completion of the project, permit holder must file with the Oklahoma Water Resources Board a Notice of Completion of Project;

4. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days. Wilful failure to complete and return the report with the file maintenance fee may be considered by the Board as nonuse of water under this permit; and

5. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven continuous year period to retain the authorized amount.

Acceptance of this permit shall be an acknowledgment and agreement that permit holder will comply with all the terms, conditions and limitations embodied in this permit and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board.

Date approved: July 11, 2000

OKLAHOMA WATER RESOURCES BOARD

Duane A. Smith

Duane A. Smith, Executive Director

OKLAHOMA WATER RESOURCES BOARD
***AMENDMENT TO PERMIT TO APPROPRIATE STREAM WATER**

Stream System: Lower Washita River
Stream System Number: SS 1-8-1
Date Application Filed: May 2, 2000
Date Petition to Amend Filed: July 10, 2000

Permit No.: 2000-013
County: Johnston

The OKLAHOMA WATER RESOURCES BOARD hereby amends regular stream water permit number 2000-013 in the name of TXI Operations, LP whose address is 1341 West Mocking Bird Lane, Dallas, Texas 75247. The regular permit authorizes the taking and use of 783 acre-feet of water per calendar year for mining (operating quarry) purposes. Quarry operations are located on 80 acres as follows: 40 acs. in the NW NE and 40 acs. in the NE NW of Section 25, T2S, R4EIM, Johnston County. The water is to be diverted from two* diversion points located as follows: one on Mill Creek located in the NW SW SW of Section 19, T2S, R5EIM (742 a.f.) and one located on an unnamed tributary of Mill Creek in the SE SE SE* of Section 24, T2S, R4EIM (41 a.f.), both located in Johnston County, at a rate not to exceed 3,000 gallons per minute.

This allocation is subject to the following terms, conditions and limitations.

1. The use of water authorized under this permit shall not interfere with domestic or existing appropriative uses;

2. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days. Wilful failure to complete and return the report with the file maintenance fee may be considered by the Board as nonuse of water under this permit;

3. The authorized amount of water is subject to forfeiture and must be beneficially used in a calendar year within any seven continuous year period to retain the authorized amount.

Acceptance of this amended permit shall be an acknowledgment and agreement that permit holder will comply with all the terms, conditions and limitations embodied in this permit and all applicable laws of the State of Oklahoma and Rules, Regulations and Modes of Procedure of the Board.

Date originally approved: July 11, 2000
Date last amended: August 8, 2000

OKLAHOMA WATER RESOURCES BOARD

Duane A. Smith

Duane A. Smith, Executive Director

OKLAHOMA WATER RESOURCES BOARD
TEMPORARY PERMIT TO TAKE AND USE GROUNDWATER

Permit No: 2000-533 Date of filing: May 2, 2000
County: Johnston Groundwater Basin: Arbuckle Formation

THE OKLAHOMA WATER RESOURCES BOARD hereby issues temporary groundwater permit number 2000-533 in the name of TXI Operations LP whose address is 1341 West Mockingbird Lane, Dallas, Texas 75247. The permit authorizes the taking and use of 640 acre-feet of groundwater per calendar year from three well(s) located as follows: one each in the NW NW SW and NE NW SW of Section 26 and one in the NW NE SE of Section 27, all in T2S, R4EIM, Johnston County for the purpose of mining (quarry operations) purposes. The land dedicated to this permit totals 640 acres and is located as follows: 320 acs. in the W2 of Section 26 and 320 acs. in the E2 of Section 27, all in T2S, R4EIM.

This allocation is subject to the following terms, conditions and limitations:

1. This permit shall lapse unless it is duly revalidated annually by the permit holder. Timely return of the completed water use report, which is mailed by the Board is January of each year, revalidates the temporary permit for that year;

2. This permit shall lapse upon issuance of a regular permit after completion by the Board of the applicable groundwater basin study and determination of the maximum annual yield of the basin;

3. Changes in well locations from those listed above must be approved by the Board and may, in the future, be subject to well spacing orders of the Board;

4. If a proposed well is not drilled and completed within one year of approval of the well location, groundwater will no longer be authorized to be withdrawn from that location;

5. Water use reports mailed to the permit holder during January of each year shall be completed and returned to the Board within 30 days.

All other terms and provisions set forth in the application shall be incorporated and made a part of this permit.

Acceptance of this permit shall be acknowledgment and agreement that the permit holder will comply with all the terms, conditions and limitations required by Oklahoma law including the Oklahoma Water Resources Board rules concerning the taking and use of fresh groundwater and will allow Oklahoma Water Resources Board staff to enter the property described in this permit during reasonable business hours for well and water use inspections.

Date permit approved: October 10, 2000

OKLAHOMA WATER RESOURCES BOARD

Duane A. Smith, Executive Director