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DEPARTMENT OF
WATER RESOURCES

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of Direct Testimony by Scott N. King and Opinions in
Reports**

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Scott N. Mr. King PE, SPF Water Engineering, LLC, for Idaho
Ground Water Appropriators, Inc, December 29, 2005**

and

**Estimate of Non-Irrigated Areas within the Twin Falls Canal
Company Service Area, Scott N. Mr. King PE and Christian R.
Petrich P.E. PG, SPF Water Engineering, LLC, for Idaho
Ground Water Appropriators, Inc, March 20, 2007**

by

**Charles E. Brockway, PE. PhD, Brockway Engineering PLLC.
and David B. Shaw P.E. ERO Resources Corp**



**November 6, 2007
For
Surface Water Coalition**

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The stated purpose of the review was 'to identify and quantify those claimed acres that are not irrigated, or those areas potentially irrigated from sources other than from the irrigation district's or company's surface water distribution and delivery system'. An additional report in 2007 was prepared by SPF to 'improve earlier estimates of non-irrigated acreage within the TFCC's claimed areas'. Essentially the purpose of the 2007 report was to provide some on-site data to verify earlier estimates of non-irrigated areas.

Mr. King did not analyze the irrigated acres for A&B, AFRD#2, Milner, or NSCC. Accordingly, the estimates for irrigated acres for those entities that were used in the SWC Expert Report have not been addressed below. Significant to this evaluation of Mr. King's reports are:

1 Mr. King utilized the .shp files provided by IDWR for GIS analysis

The .shp files are computer generated files of specific areas portrayed on aerial photos. The .shp files used were working versions of the SRBA recommendations provided by IDWR and

are not final recommendations. It was represented that these were 'agreed upon' .shp files. No statement was made as to why only three of the SWC entities were selected for this evaluation except that IGWA specified the three irrigation entities.

2. Mr. King assumed that the 'agreed upon' .shp files were correct.

Mr. King did not perform any GIS analysis of the 'agreed upon' .shp files to determine whether or not his analysis of total acres agreed with the IDWR determination of total acres. Significant differences can be determined based on the technician performing the analysis, aerial photo quality, and assumptions made relative to non-irrigated areas.

3. Delineation of non-irrigated areas

Mr. King attempted to identify parcels 'not irrigated, partially irrigated or likely irrigated from sources other than the entity's surface water distribution and delivery system' but failed to state the criteria for these categories, especially the 'other sources' category.

4. On-site verification of non-irrigated areas

Determination in the 2005 report was made only by interpretation of aerial photos with no on-site verification. Subsequent on-site analysis by ERO and Brockway Engineering show significant errors in classification of lands as non-irrigated.

5. Miscellaneous lands

The category of 'miscellaneous lands' identified by Mr. King attempted to delineate access roads, parking areas, out buildings, and homes from traditional farmsteads and areas including irrigated trees and lawns that may receive district or company water or that may instead be irrigated with domestic ground water or water from a source other than the district or company. All of these determinations were made by image interpretation only in 2005 with no on-site verification. The scale and quality of the compressed NAIP aerials photos which Mr. King utilized limit the accuracy of those determinations without on-site verification.

6. Determination of percent of miscellaneous and subdivision lands irrigated

Mr. King states that ' a maximum of 60 percent of these miscellaneous areas are irrigated using district or company surface water' based on '---our experience investigating actually-irrigated acreage in such areas' (Exhibit 4300 P5, 2005 report) However, no references or citations of the experience cited was offered.

Similarly an estimate was made that 40 to 60 percent of the area of identified subdivisions are actually irrigated with no on-site verification. The 2007 report was apparently performed to substantiate the 'estimates' of irrigated land in miscellaneous areas and subdivisions.

7. Potential double-counting of non-irrigated areas.

Mr. King states that 'Lands were first digitized based on 1987 imagery, then digitized based on

2004 imagery. The digitized areas of 1987 and 2004 do not overlap. Lands identified in 2004 but not in 1987, usually appeared irrigated in 1987 (Exhibit 4300 P6, 2005 report). This statement would appear to assume that a parcel determined to be non-irrigated in 1987 but irrigated in 2004 would be assumed for Mr. King's determination to not be irrigated in 2006. Therefore any resumption of irrigation between 1987 and 2004 would be discounted.

Surface Water Coalition Analyses

An evaluation of the procedures utilized by Mr. King in the 2005 report was prepared and on-site inspections made of selected sites to verify whether, in fact, the classifications of non-irrigated or partially irrigated parcels were correct. Field visits were performed by ERO on selected sites identified by Mr. King on the MID and BID districts and on the Twin Falls Canal Company by Brockway Engineering.

Twin Falls Canal Company

Nineteen sites on the Twin Falls Canal Company project which had been identified by Mr. King in the 2005 report were selected for on-site visits by Brockway Engineering. These sites were identified and selected by Jay Barlogi, East End Watermaster for the Twin Falls Canal Company and were visited by Amy Runser, GIS technician and graphics analyst for Brockway Engineering, Jay Barlogi (TFCC) and Kay Puschel, (Water Records Specialist for TFCC). These 19 sites visited consisted of 13 sites identified by Mr. King as non-irrigated and 6 sites identified as subdivisions. Digital ground-based photographs were taken of each site to include the irrigation systems and land use (grazing, irrigation, other).

Aerial photos of each of the sites were secured for 1987 and 2004 with the identified sites outlined and compared and the 1/9/2006 ground-based photo included. Determinations were made from the aerial photos of whether the parcel was irrigated in 1987 and 2004.

Figure 1 is a map of the TFCC evaluation sites. Figures 2 through 14 are ground-based photographs of each of the sites and Figures 15 through 33 are aerial photographs of each site along with typical ground-based photos and site description.

Table 1 Comparison of Selected Parcels Designated as Non-irrigated by King.

<u>Area #</u>	<u>Description</u>	<u>Acres</u>	<u>Mr. King</u>		<u>SWC (Brockway)</u>		
			<u>IGWA Class</u>	<u>Irrigation</u>	<u>Irrigation Determination</u>		
					<u>1987</u>	<u>2004</u>	<u>2006</u>
1	Farmed ground, there is current road construction in area effecting ability to harvest area. other portion of area is horses pasture currently in use	18.3	non-irrigated	0	YES	YES	YES
2	Horse pasture currently under construction to improve the delivery system, new piping and risers visible Currently animals at graze and irrigation evident	1.7	non-irrigated	0	YES	YES	YES
3	Land previously tied up in estate dispute, now under new ownership to resume use of land, pivot in place. land currently used as livestock pasture, animals grazing	46.4	non-irrigated	0	YES	YES	YES
4	Obvious farmed ground, crop stubble visible, as well as corrugation and piping.	34.6	non-irrigated	0	YES	YES	YES

5	Animal pasture currently used, irrigation system not the most effective but water still used.	11	non-irrigated	0	YES	NO	YES
6	Windmill Heights Subdivision - Developing area, majority effectively irrigated distribution to all residence. Large yard and mature trees on all lots	33.5	subdivision	13.4	YES	YES	YES
7	Bushwood Subdivision - New development distribution system in place, irrigation, ditches, and pumps visible yard and landscaping in place.	42.3	non-irrigated	0	YES	YES	YES
8	Lorey Land Sub. - Percent of Sub. Is current livestock pasture, uses and irrigation system clearly visible	58.4	Subdivision	23.4	YES	YES	YES
9	Historically farmed land, currently used as silage storage, can be resumed	3.7	non-irrigated	0	YES	NO	NO
10	Treasure Ridge Sub - Canal Irrigation system clearly visible to all residence large yard and trees, typical. all lots.	30	Subdivision	12	YES	YES	YES
11	S93 Sub - Canal delivery system clearly visible numerous trees and large yard irrigation RV park beside with aesthetic pond, numerous trees and large grassy areas	38.4	Subdivision	15.4	YES	YES	YES
12	Tree farm - Canal watering system pond, pumps and piping visible	2.9	non-irrigated	0	YES	YES	YES
13	Number not used	-					
14	Obvious farmed ground, cut crop laying in field	7.1	non-irrigated	0	YES	NO	YES
15	Farm land irrigation system clearly visible	18.9	non-irrigated	0	YES	YES	YES
16	Portion of field at base of butte clearly farmed left un-harvested for potential wildlife refuge	7.6	non-irrigated	0	YES	YES	YES
17	Livestock pasture - Irrigation system and irrigation visible livestock currently grazing	4.5	non-irrigated	0	YES	YES	YES
18	Large pasture with irrigation system grazing evident as well as cultivation	91.9	non-irrigated	0	YES	YES	YES
19	Golf course - obviously Irrigated snow covered	38	Subdivision	15.2	YES	YES	YES
20	Historically farmed land to be developed into residence, soil test holes visible.	4.2	Subdivision	1.7	YES	NO	NO

Results:

Of the 13 sites selected by Brockway Engineering which Mr. King defined as non-irrigated, 13 of them (100%) were determined to have been irrigated in 1987 and 3 were not irrigated in 2004. Of the 13 sites (290.9 acres) identified by Mr. King as non-irrigated only one (1) was not irrigated in 2006 (3.7 acres, or 1.2%) as evaluated by Brockway Engineering. Therefore 287.2 acres actually irrigated in 2006 were identified by Mr. King as non-irrigated and subtracted from the TFCC .shp file acreage. Even the one site verified as non-irrigated in 2006 (stack yard) could be irrigated in the future since the TFCC shares remain on the land.

Of the 6 sites which Mr. King defined as subdivisions, it was determined that all of them were irrigated in 1987 (100%). Four (4) of these sites were determined to have been developed or developing subdivisions in 2004. However, all of these sites included pumps and pipe distribution systems to utilize canal water for irrigation during the Brockway Engineering site

visit in 2006 and four (4) of the parcels designated subdivisions were either developed or under development.

Table 1 is a summary of the general description of the site evaluation for each of the 19 parcels evaluated by Brockway Engineering and shows the designation by Mr. King and the determination of Brockway Engineering in 1987, 2004 and 2006. Significant in the Brockway analysis is that all of 13 or 100 % of the sites designated non-irrigated by Mr. King and removed from the TFCC “agreed upon” acreage were actually irrigated in 1987 or 2004. Assuming that this sample of site verified non-irrigated areas is representative of the remainder of the TFCC irrigated area, the analysis by Mr. King severely over estimates the non-irrigated acreage and should not be relied upon.

This analysis indicates that of the sample of 13 sites, only 1.2% of the acres designated by Mr. King as non-irrigated were actually not irrigated in 2006. The field verifications by ERO and Brockway Engineering clearly question Mr. King’s estimated non-irrigated acreage for BID, MID, and TFCC and demonstrates that reviewing aerial imagery from one specific year at one point in time is not a positive showing as to whether or not the land is, in fact, irrigated that season or future irrigation seasons.

The assumption utilized by Mr. King (SPF) in the 2005 report and 2007 report was that if a parcel was identified in 1987 or 2004 as non-irrigated or partially irrigated, then that area was never irrigated again and that the canal shares applicable to those areas were not utilized somewhere else in the TFCC service area. Mr. King did acknowledge that ‘An additional source of error may result from irrigation water that was transferred from parcels identified in this analysis as non-irrigated to other areas within the TFCC service area’. and that ‘Identifying these transfers would require assistance from TFCC’ and therefore apparently could not be performed. Exhibit 4310 (King 2007 P 19)

Utilizing the records of the Twin Falls Canal Company and the services of Kay Puschel, water records specialist for the TFCC, the share chronology on each of two parcels identified by Mr. King as non-irrigated was determined.

Parcel N3

This parcel was identified correctly as non-irrigated by Mr. King in 2004 because it now included a partial cloverleaf intersection for U.S Highway 93 and U.S. Highway 30. The 38.88 TFCC shares on this parcel were originally owned by Harvey and Dorothy Maxim. Fifteen (15) shares were moved in 1997 to Jack and Lewella Schmidt to fill out an 80 acre parcel in Sec 16 T10S R16E and 23.88 were moved to non-irrigated land on the Cummins farm in Sec 9 T11S R19E. So most of the 38.88 shares were utilized on new land and no reduction in acreage for TFCC occurred for those acres.

Parcel N9

This parcel is a CAFO (Confined Animal Feeding Operation, dairy). Forty (40) shares were moved from this property by TFCC to Olga Butler in 1972 in Sec 27 T11S R 11E. leaving the property dry.

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The assumption utilized by Mr. King (SPF) in the 2005 report and 2007 report was that if a parcel was identified in 1987 or 2004 as non-irrigated or partially irrigated, then that area was never irrigated again and that the canal shares applicable to those areas were not utilized somewhere else in the TFCC service area. Mr. King did acknowledge that ‘An additional source of error may result from irrigation water that was transferred from parcels identified in this analysis as non-irrigated to other areas within the TFCC service area’. and that ‘Identifying these transfers would require assistance from TFCC’ and therefore apparently could not be performed. Exhibit 4310 (King 2007 P 19)

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Parcel N9

This parcel is a CAFO (Confined Animal Feeding Operation, dairy). Forty (40) shares were moved from this property by TFCC to Olga Butler in 1972 in Sec 27 T11S R 11E, leaving the property dry.

In 1990, 40 shares owned by Donley and Barbara Botoff were transferred to this dry property then owned by John Peterson when the Botoffs built a CAFO on the NE NE Sec 27 10S 14E.

There was therefore no net decrease in irrigated acreage on the TFCC lands.

An analysis was made of the sites visited by Mr. King for the 2007 report to determine the status of TFCC shares currently on each parcel. TFCC records were searched to determine the current status of shares on each of sites identified as M1-M11 and N1-N14 by Mr. King in his 2007 report

Table 2 shows the results of that evaluation.

Table 2 King Miscellaneous and Non-Irrigated Sites Visited 2007 TFCC Shares

Miscellaneous							
Page #	Misc. #	S-T-R	1/4 1/4	Acres	Shares	Name	Notes
40	M-1	17-10-16	SW NE	19.0	20.0	Moises Serrano	
	M-2		SE NW	40.0	40.0	Ruthe Abel Trust	
	M-3		NW SE	100.0	100.0	Annis & Drake	
	M-4		NE SW	40.0	40.0	Hancock, Reimer & Moon	
	M-5		SE SW	40.0	40.0	Florence Shank	
	M-8		E1/2 SE	76.0	76.0	Wanda, Gary, Sheila Allen	
	M-10		NE SE	3.0	3.0	John Matney	
			SE NE	3.9	3.9	Robert Hamilton	
	M-11		NE NE	40.0	40.0	Wanda, Gary, Sheila Allen	
40	M-9	16-10-16	NW SW	40.0	43.8	Wanda, Gary, Sheila Allen	
40	M-6	20-10-16	NE NW	22.3	22.3	Steve Slifer	
				3.0	3.0	Kenneth Nance	
				1.7	1.7	William Cosgrove	
				2.9	2.9	William Lincoln	
	M-7		NE NE	38.76	40.0	Randy Shank	
Non-Irrigated							
Page #							
53	N-1	26-10-17	SW NW	40.0	40.0	Amalgatmated Sugar	
54	N-2*	36-9-16	Runs thru the middle		No	Rock Creek Canyon	
		1-10-16			Shares		
55	N-3**	9-10-16	SE SE		No Shares	Highway 30 & 93	
		10-10-16	SW1/4		123.0	Ted Rea - Elk Farm	
		15-10-16	NW NW	65.0	65.0	Neil Kasbergen	Ex 15 A
		16-10-16	E1/2 NE	63.0	63.0	Blick & Eckert	Ex
	highway						
56	N-4	12/10/2015	SW SW Pt SE SW	40.0	40.0	Adrian Lekkerkerk Dairy	
57	N-5	15-10-15	NW1/4 Pt NE1/4	156.5	157.5	Steve Brown	
58	N-6	16-10-15	NE1/4 & SE1/4	320.0	320.0	Mark Tatarka	
59	N-7	21-10-15	NW1/4	160.0	160.0	Gerben Swager Trust	
60	N-8	26-10-14	NE1/4	152.5	152.5	Rick Vanderstelt	
61	N-9**	27-10-14	NE NE	40.0	0.0	Transferred off in 1990	
62	N-10	21-10-14	Pt SE1/4,	139.0	139.0	John Schilder	

			Pt Sec 1/4				
63	N-11	28-10-14	NW 1/4	120.0	120.0	Jack Petter	
			SW 1/4	120.0	120.0		
			NE 1/4	35.55	35.55		
64	N-12	22-10-17	NE 1/4			Highland View, Lots 1 & 32	
65	N-13	23-10-17	Pt NW 1/4		0.72	Amalgamted Sugar	Rented
			Pt NW 1/4		1.63	Amalgamted Sugar	Rented
			SW NW		10	Jeanne Sligar	Rented
66	N-14	22-10-17	Pt N 1/2 NE		4.92	Jeanne Sligar	
					1.25	J.D. McCollum	No record
					1.87	Donald Sunderland	
					0.87	Dale Stukenholtz	
					0.47	Ralph Hendrick	
					0.48	Keith Cummins	
					7.98	Whal Properties	
					1	Robert Leonard	
					0.5	Charles Newberry	
					0.46	John Brodeen	
					1.12	Otto Mason	
					1	Dyson Living Trust	

*N2 Rock Creek Canyon This is riparian area along Rock Creek and therefore has no TFCC shares appurtenant

** N3 The 38.88 TFCC shares on this parcel were originally owned by Harvey and Dorothy Maxim. Fifteen (15) were moved in 1997 to Jack and Lewella Schmidt to fill out an 80 acre parcel in Sec 16 T10S R16E and 23.88 were moved to non-irrigated land on the Cummins farm in Sec 9 T11S R19E. So most of the 38.88 shares were utilized on new land and no reduction in acreage for TFCC occurred for those acres

**N9 40 shares were moved from this property by TFCC to Olga Butler in 1972 in Sec 27 T11S R 11E. leaving the property dry. In 1990 the 40 shares owned by Donley and Barbara Botoff were transferred to this dry property owned by John Peterson when the Botoffs built a CAFO on NE NE Sec 27 10S 14E.

There was therefore no net decrease in irrigated acreage on the TFCC lands

In Table 2, most of the miscellaneous parcels are part of farmsteads where some of the historically irrigated area may have been developed or sold but the shares have remained on the parcel. If this sample of miscellaneous parcels is indicative of the remainder of the TFCC, BID, and MID lands identified by Mr. King, it is likely that water, formerly used on the non-irrigated acres identified by Mr. King, is now diverted and used on adjoining irrigated parcels or other irrigated parcels within the projects.

For example, in the area designated as M-4 (Exhibit 4330), Mr. King claims that of the 2.63 acres identified, only 0.08 is irrigated. However, based upon TFCC's records it is clear that the farmstead identified as M-4 is part of a 40 acre farm owned by a partnership Hancock, Reimer & Moon (see Table 2 above). The partnership owns 40 shares and are delivered water on that basis. If the partnership did not irrigate 2.5 acres of its 40 acre parcel it is still entitled to delivery of 40 shares for use on the remaining 37.5 acres that is part of their irrigated farm. TFCC records demonstrate delivery pursuant to the shares.

The same example goes for the area designated as M-5 (Exhibit 4331). Mr. King claims that of the 3.33 acres identified, only 0.62 acres are irrigated. Based upon TFCC's records it is clear that the farmstead identified as M-5 is part of a 40 acre farm owned by Florence Shank. Ms. Shank is entitled to delivery of 40 shares for use on the 37.7 acres that is part of her irrigated farm. TFCC records demonstrate delivery pursuant to the shares.

Mr. King acknowledged in his deposition that under such examples, the water appurtenant to non-irrigated acres on farmsteads could be beneficially used on the remaining acres. (King Deposition, p. 153, lns. 5-12).

Based on the Brockway Engineering and ERO analyses of the presence of canal shares on parcels identified by Mr. King, almost all of the parcels have shares appurtenant and are part of larger irrigated farms. Alternately, the shares have been transferred to other dry ground within the canal company service areas. Irrigation water is being delivered to these properties on the basis of valid shares and not assumed or measured irrigated acres.

Many of the smaller parcels designated by Mr. King as non-irrigated are part of larger parcels which have shares appurtenant to all acres and which are receiving water from the canal companies for all shares. It is not uncommon for a water user to dry up part of a farm or field to be used as a CAFO or sold dry but retaining the full historical number of shares on the remaining property, which, in most cases, is an adjacent irrigated farm. In addition, the Twin Falls Canal Company allows more than one share per acre to accommodate difficult-to-irrigate areas or reductions in area for other reasons. In order to equal one miner's inch per acre, which is the State standard for reasonable diversion rates, the diversion per acre would have to be 1.6 shares per acre. The Twin Falls Canal Company policy allows up to 1.5 shares per acre to accommodate these circumstances; however, not many water users have this many shares. This policy assures that no user will exceed more than 1.0 miner's inch per acre.

Continued diversion of historical numbers of shares to land with exclusions of irrigated acres does not violate the Idaho standard of 1 miner's inch per acre. There is no information available that would indicate that diversion of more than 5/8 inch per acre is not beneficial use of water.

ERO Analysis of MID and BID Evaluations by Mr. King

ERO evaluated the shape files prepared by Mr. King of SPF Water Engineering to assess the accuracy of the non-irrigated and partially irrigated determinations identified in the 2005 King report for the Minidoka Irrigation District and the Burley Irrigation District.(Exhibit 4130) Paul Drury, P.E. of ERO Resources Corp. field verified 32 parcels identified in the 2005 King report as non-irrigated, miscellaneous or subdivisions within the Minidoka Irrigation District and 26 parcels similarly identified as being within the Burley Irrigation District. None of the determinations in the 2005 King report were field verified by SPF Water Engineering.

Table 3 is a summary of the ERO field verification results for MID.

Table 3 Field Verification of Non-Irrigated Areas- ERO Minidoka Irrigation District

Township	Section	Current Label	Field Verification
T9SR22E	SW 34	1987 Miscellaneous	40 acres irrigated in 2004. 0% non irrigated.
	SWSW 27	1987 Miscellaneous	2 homes on 15 acres with 13.5 acres irrigated pastures. 10% non irrigated.
	NENE 36	2004 Miscellaneous	3 homes on 24 acres with 21.5 acres irrigated pastures. 10% non irrigated.
T10SR22E	SWNW 11	1987 Miscellaneous	23 acres irrigated in 2004. 0% non irrigated.
	SWSE 15	2004 Miscellaneous	33 acres fully irrigated. 0% non irrigated.
T9SR23E	SENE 13	1987 Miscellaneous	1 home on 10 acres with 9.5 acres irrigated. 5% non irrigated.
T10SR23E	SESE 1	2004 Miscellaneous	5 acre field is irrigated. 0% non irrigated.
	NESW 1	2004 Miscellaneous	22 acre parcel with 18 acres irrigated. 18% non irrigated.
	NWSE 8	1987 Non Irrigated	10 acre irrigated field between hotel and highway. 0% non irrigated
T9SR24E	SE 1	Non Irrigated	90 acres. City of Acequia is irrigated with MID water, streets are not within POU.
	SESW 2	1987 Miscellaneous	1 acre lots. 25% non irrigated.
	SESE 22	1987 Miscellaneous	2.5 acre subdivision. 20% non irrigated.
	NWNW 26	2004 Miscellaneous	30 acre parcel with 27 acres irrigated. 10% non irrigated.
	SENE 28	2004 Subdivision	5 acres lots with 4.5 acres irrigated. 10% non irrigated.
	NESE 28	2004 Miscellaneous	2.5 acre lots with large pastures. 20% non irrigated.
	NESE 29	2004 Miscellaneous	4 homes on 12 acres. 15% non irrigated.
	SWSE 30	2004 Miscellaneous	1 home on 10 acres with 8.5 acres irrigated. 15% non irrigated.
T10SR24E	SWSW 30	2004 Miscellaneous	1 home on 4 acres. 14% non irrigated.
	SENE 6	1987 Miscellaneous	15 acre field east of fertilizer plant is irrigated. 0% non irrigated.
T8SR25E	SESW 33	2004 Miscellaneous	4 homes on 22 acres with large irrigated pastures. 12% non irrigated.
	SESW 35	1987 Miscellaneous	12 acre parcel. 8% non irrigated.
T9SR25E	NWNW 2	2004 Miscellaneous	20 acres of irrigated horse pastures. 5% non irrigated.
	SESE 5	1987 Miscellaneous	47 acres of irrigated fields. 5% non irrigated.
	NWNW 7	2004 Miscellaneous	4 homes on 20 acres with irrigated pastures. 20% non irrigated.
	NWNW 16	Non Irrigated	Portions are being irrigated north of lateral. 3 acres irrigated indicated as non-irrigated.
	NENE 18	1987	1 home on 9 acres with 8 acre irrigated pasture.

		Miscellaneous	11% non irrigated.
	SWSW 18	2004 Subdivision	Subdivision with 1.5 acre lots. 1.25 acres irrigated on typical lot. 16% non irrigated.
	SWSE 19	2004 Miscellaneous	2 homes on 9 acres with irrigated pastures. 17% non irrigated.
	SENE 20	2004 Miscellaneous	Old dairy is being reclaimed. Irrigation is in place on 68 acres. 0% non irrigated.

Figures 34 to 36 show examples of parcels from Table 4 mischaracterized in the King Report. The summary shows errors in the King Report analysis resulting from:

- 1) Identifying acres as non-irrigated when all or part of those acres are irrigated with MID irrigation water.
- 2) Assuming, based upon unspecified criteria, that 40% of areas identified as miscellaneous are not irrigated while field verifications showed those parcels to be 75 to 100% irrigated using MID irrigation water.
- 3) Assuming, based upon unspecified criteria, that 40% of areas identified as subdivisions are not irrigated while field verifications showed those parcels to be 80 to 90% irrigated using MID irrigation water.

Current practice within MID is for larger farm operators to purchase smaller farms, many of which include a homestead, and incorporate those farms into the larger operation. When this occurs the old homestead is frequently removed or destroyed and the homestead site becomes part of the irrigated field. Thus, any analysis identifying homesteads as partially non-irrigated is subject to change with the next irrigation season as the common and ordinary practice is to remove homesteads and return the land to irrigated farm land.

In 2007 a gravel pit that had been non-irrigated during the mining operation was reclaimed and a pivot is installed upon the reclaimed area. The pivot was used to apply water in 2007 and should be fully operational in 2008.

Table 4 is a summary of the ERO field verification results for BID.

Table 4 Field Verification of Non Irrigated Areas-ERO Burley Irrigation District

Township	Section	Current Label	Field Verification
T10S R22E	SWSW 21	2004 Miscellaneous	Irrigated pastures along highway. 15 acre lot with 12 acres irrigated. 20% non irrigated
	NW 22	2004 Miscellaneous	Perimeter of center pivot is irrigated. 31 acre shape with 24 acres irrigated. 23% non irrigated.
	NE 25	2004 and 1987 Non Irrigated	Gravel pits. Reclamation plan is for irrigated agriculture.
	N 26	2004 and 1987 Non Irrigated	Gravel pits. Reclamation plan is for irrigated agriculture.
	SWSE 26	2004 Miscellaneous	5 acre irrigated corn field. 0% non irrigated.
	SESE 26	2004 & 1987 Miscellaneous	5 acre lots with irrigated pastures and ball fields. 22 acres with 19 acres irrigated. 14% non irrigated.
	SWNW 27	2004 Miscellaneous	One home with large irrigated yard. 2 acre lot with.

			1.5 acres irrigated, 25% non irrigated.
	SWNW 25	2004 Miscellaneous	12 acre lot with one home and 11 acres irrigated. 8% non irrigated.
	NESE 26	2004 Miscellaneous	6.5 acre lot with one home and 5 acres irrigated. 23% non irrigated.
	NESE 26	1987 Subdivision	17 acre large lot subdivision with 5 homes and 14 acres irrigated 18% non irrigated.
	NESE 26	2004 Subdivision	2.5 acre pasture is irrigated with no development. 0% non irrigated.
	SENE 36	2004 Non Irrigated	14 acre lot with 2.5 acre commercial development, remaining irrigated, 18% non irrigated.
T10SR23E	SWSW 32	2004 Miscellaneous	14 acre large lot subdivision with 4 homes and 12 acres irrigated. 14% non irrigated.
	SWSW 32	2004 Miscellaneous	5 acre lot with one home and 4 acres irrigated. 15% non irrigated.
	SESE 35	2004 Miscellaneous	4 acre irrigated parcel indicated as miscellaneous. 0% non irrigated.
T11SR23E	SWSW 4	2004 Miscellaneous	15 homes on 38 acres with 30 acres irrigated. 21% non irrigated.
	NENE 5	1987 Subdivision	1 acre lots with .75 acre irrigated landscaping. using BID water, 25% non irrigated.
	NWNW 5	1987 Subdivision	0.5 acre lots with .35 acre irrigated landscaping. 30% non irrigated.
T10SR24E	NWSE 27	2004 Miscellaneous	39 acre field is fully irrigated and is identified as miscellaneous.
	SESE 31	2004 Subdivision	7 homes on 15 acres with 13 acres of irrigated pasture. 13% non irrigated.
	SWSE 31	2004 Miscellaneous	3 homes on 7 acres with 6 acres of irrigated pasture. 14% non irrigated.
	SESE 32	2004 Miscellaneous	1 home on 4 acres with 3 acres of irrigated pasture. 25% non irrigated.
	SWSW 33	2004 Miscellaneous	1 home on 3.5 acres with 3 acres of irrigated pasture. 14% non irrigated.
T11SR24E	NWNW 6	2004 Miscellaneous	3 homes on 20 acres with 18 acres of irrigated pasture. 10% non irrigated.

Figures 37 to 39 show examples of parcels within BID from Table 4 mischaracterized in the King Report. The summary shows errors similar to those that occurred in the analysis of the MID lands. The percentages of acreage actually irrigated very slightly from the percentages within MID but none are as high as 40% non-irrigated. Additionally, Table 5 shows 2007 BID water deliveries to lands identified in the King Report as non-irrigated or partially non-irrigated. For example, the Care-Free Subdivision on the first line of the table and shown in Figure 37 took delivery of 97.7% of their entire water allocation in 2007 for irrigation within the subdivision. Figures 38 and 39 show the Johnson Subdivision and the Baptist Church, both of which are included in Table 5 indicating that water delivery for these areas in 2007.. These areas took 87.6% and 77.8%, respectively, of their available water supply in 2007, both significantly more than 60% apparently anticipated by the 2005 King Report.

The same examples regarding claimed “non-irrigated” acres on miscellaneous parcels applies to BID and MID as well. For example, BID and MID deliver water based upon assessed acreage and even 1 or 2 acres out of a 40 acre farm may consist of a farmstead the parcel is still delivered 40 acres of water. The landowner, as recognized by Mr. King, can beneficially use

that water on the remaining irrigated farm. (King Deposition, p. 116, lns. 13-25, p. 117, lns. 1-6).

2007 Report

This report was prepared by Mr. King and Dr. Petrich of SPF Engineering primarily to verify the photo-interpretation and assumptions regarding percentages of irrigation on the various categories of parcels identified in the 2005 report on the TFCC lands only. The analysis focused on verifying the estimates of irrigated (or non-irrigated) area within the categories utilized in the 2005 report except that lands classified as subdivisions were divided into urban and rural subdivision classes.. No additional analyses were performed on MID or BID lands and no explanation for only including TFCC lands was offered.

Analysis was performed first to determine the total designated irrigated area in the TFCC service area which was included in the 'agreed upon' .shp file. The .shp file used was defined in a memo from IDWR to Mr. King on September 16, 2005. The total area indicated in this .shp file using GIS procedures was 199,215.9 acres. Mr. King indicates that the area designated in the 'agreed upon' .shp file was 198,632 acres or a difference of 583.9 acres. This analysis questions whether or not the TFCC .shp file which Mr. King utilized is the correct 'agreed upon' .shp file.

Based on the review by Brockway Engineering of the 13 sites designated as non-irrigated by Mr. King, there was only one(1) site out of the 13 or 1.2% of the sampled areas which were not irrigated in 2006. If this sample is typical of the remainder of the non-irrigated sites identified by Mr. King on the entire TFCC service area, then the actual non-irrigated area in 2006 would be 1.2% of 9,026 acres or 108 acres. There is therefore, a significant potential error in the determination of non-irrigated area on the Twin Falls Canal Company project lands.

In addition, Mr. King made no estimates as to how the shares are delivered on the "miscellaneous" and "non-irrigated" lands to determine if the water represented by those shares are being used on the remaining irrigated acres of the farms

The errors in the estimate of net decreases in irrigated areas on the TFCC lands can be attributed to:

1. Significant errors in utilizing the IDWR .shp files without verification with SPF procedures
2. Inability to correctly identify non-irrigated acres using GIS techniques without field verification
3. The assumption that acres designated as non-irrigated are without canal shares or that the canal shares have been moved to other irrigated areas.
4. The inability to determine from aerial photos only, the source of irrigation water on lands classified as subdivisions or miscellaneous lands.

5. Errors in determining the percentage of miscellaneous and subdivision lands which are non-irrigated.
6. Errors in assuming a parcel that may be non-irrigated or partially irrigated in 1 year will never be fully irrigated in the future

Estimate of Diversion Requirement for King Non-Irrigated Area

Mr. King attempted to determine the diversion requirement reduction for Twin Falls Canal Company associated with his estimated non-irrigated acres. However, his analysis is not based upon actual recorded diversions or delivery practices. He assumed that, based on a diversion of $\frac{3}{4}$ miner's inch per acre that TFCC would divert $\frac{3}{4}$ miner's inch per acre for 212 days per year (Mr. King, 2007 report, page 18). The result of this calculation is that each irrigated acre would require a diversion from the Snake River of 7.41 acre feet per year. (Mr. King 2005, page 20) Based on this calculation and the claimed 'agreed upon' acreage on TFCC of 198,632 acres irrigated, the annual diversion would have to be 1,471,863 acre feet per year. Mr. King acknowledged the result of this analysis at his deposition. (King Deposition, p. 174, lns. 13-22).

Mr. King (2007 page 20) therefore assumed that the estimated non-irrigated acres on the TFCC project would require an annual diversion of 111,468 acre feet ($15,043 \times 7.41$) from the Snake River or that that volume should be deducted from the required TFCC diversion. This conclusion is not correct since Mr. King's analysis is not based upon actual reported diversions. Moreover, based upon Mr. King's total volume analysis it is clear that the volume associated with his alleged "non-irrigated" acres (111,468 af) would be deducted from 1,471,863 acre-feet (total annual diversion), not what TFCC actually diverts. Mr. King acknowledged this as well at his deposition. (King Deposition, p. 174, lns. 23-25).

Table 1, Appendix AS, Surface Water Coalition Report, 2007 shows the reported diversion volume for Twin Falls Canal Company for the period 1930 through 2006. The average total diversion for the period 1980-2006 is 1,073,127 acre feet per year or 5.40 acre feet per acre based on the claimed acreage of 198,632 acres. Mr. King's estimate is incorrect since he assumed that a fixed diversion rate per acre was effective over the entire irrigation season. TFCC management ramps up and down at the beginning and end of the irrigation season and does not divert from the Snake River at a constant rate. In addition, re-diversion of return flow on the Twin Falls Canal Company lands supplements required diversions from the Snake River.

If the errors in identifying non-irrigated areas as shown in Table 1 for Mr. King's sites evaluated by Brockway Engineering are typical of the remainder of the sites on Twin Falls Canal Company lands, the calculated area in the non-irrigated category is likely even smaller and could be as low as 108 acres. Regardless, the total diversion volume calculated by Mr. King has no relevance to actual diversion data.

If, in fact, the non-irrigated acreage is as low as 108 acres as indicated by the data in Table 2, and using a reported average Snake River diversion of 5.40 acre feet per acre for the period 1980-2006, a calculated annual volume attributed to the acres classified as non-irrigated acres

would be 583 acre feet (108 x 5.40). Even assuming that Mr. King's estimate of non-irrigated acres within subdivisions and miscellaneous sites is correct, the total estimated non-irrigated acres would be 6,600 acres instead of the 15,043 acres (Table 10 Exhibit 4310). This is a difference of 3.3 percent of the 198,632 acres reported as the 'agreed upon' acreage value. This difference of 3.3 percent of the reported Snake River diversion is not a significant volume and is well within the estimated accuracy of acreage and water diversion parameters.

Finally, Mr. King appears to have assumed that, with parcels containing non-irrigated areas scattered randomly throughout the 202,000 acre Twin Falls Canal Company service area, that a simple reduction in required Snake River diversion volume could be accomplished equal to the diversion volume for the non-irrigated acres. This assumption ignores the basic hydraulics and management requirements for a long open-channel distribution system. Water levels in all canals and laterals are maintained at operating levels to allow diversion to head gates. This hydraulic requirement therefore assures that canal losses do not change with any small decrease in diversion. Similarly, ditchriders do not have the ability or facilities on long distribution systems to regulate or control diversions rates and volumes to account for very small decreases in irrigated parcels. The fact that these parcels are scattered throughout the area precludes a block reduction in diversions which appears to be implied by Mr. King.

In summary, the 2005 King Report is not sufficiently accurate to be useful in determining whether an adjustment in IDWR's determination of irrigated acres for TFCC, MID and BID should be considered. IDWR's methodology for determining irrigated acreage to be recommended to the SRBA Court has been uniformly applied to irrigated lands throughout the SRBA and continuing to use those recommended acres treats all water users equally including junior ground water pumpers.

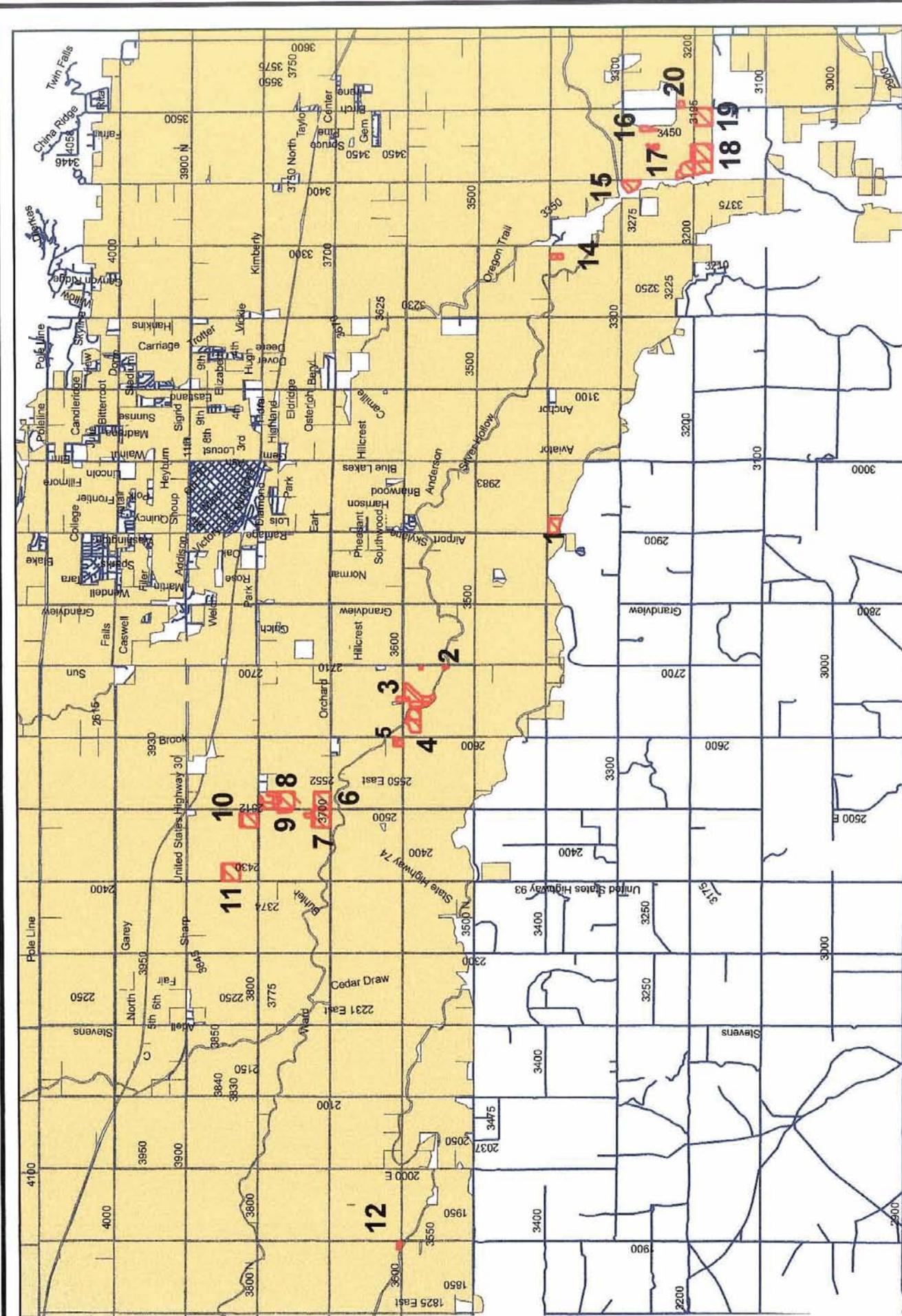
Errors remain in the TFCC analysis even with the limited field verification performed by SPF Water Engineers. Figures 43 to 45 show an example of each, non-irrigated, miscellaneous, and subdivisions in which the 2006 NAIP photography clearly shows the designation in the shape file accompanying the 2007 SPF report is in error.

Deliveries and water requirements for irrigation on the Twin Falls Canal Company, MID and BID projects have been developed with the homesteads in place, stackyards operating, and roads and miscellaneous areas integrated into the farm operations. Historical diversion requirements have therefore been tailored to include these minor exclusions from gross irrigated areas. Some excluded areas are so situated as to disrupt efficient water distribution and therefore can require additional diversion rates and volume to accommodate these irregularities. To attempt, at this late date, to predicate irrigation diversion requirements on minor exclusions from historical farmsteads is not justified.

In Mr. King's September 26, 2007 Direct Testimony he expresses the opinion that non-irrigated acreage should not be considered in calculating irrigation water-supply requirements. While Mr. King's opinion is fundamentally correct it is overly simplistic since irrigated acreage is but one element needed to calculate irrigation water supply requirements. For instance, as explained above, since the projects deliver water based upon assessed acres and shares, even if some parts of an irrigated farm are not irrigated, the landowners are able to use that water on the remaining irrigated acres. This is the common practice throughout BID, MID

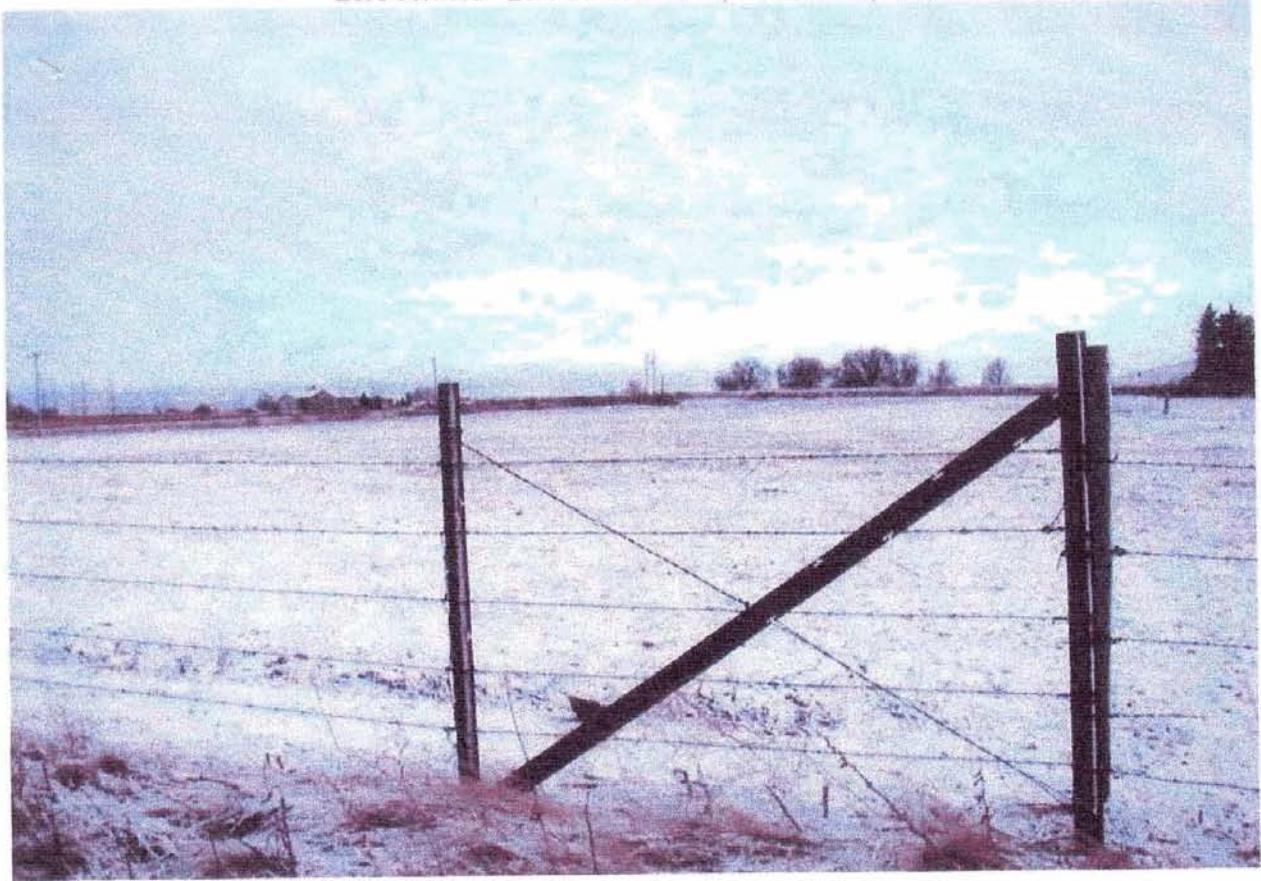
TFCC. In summary, Mr. King has not demonstrated an acceptable alternative to using the acreage recommended by IDWR to determine irrigation water supply requirements.

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**SURFACE WATER COALITION
TFCC IRRIGATION EVALUATION SITES**

FIGURE 1



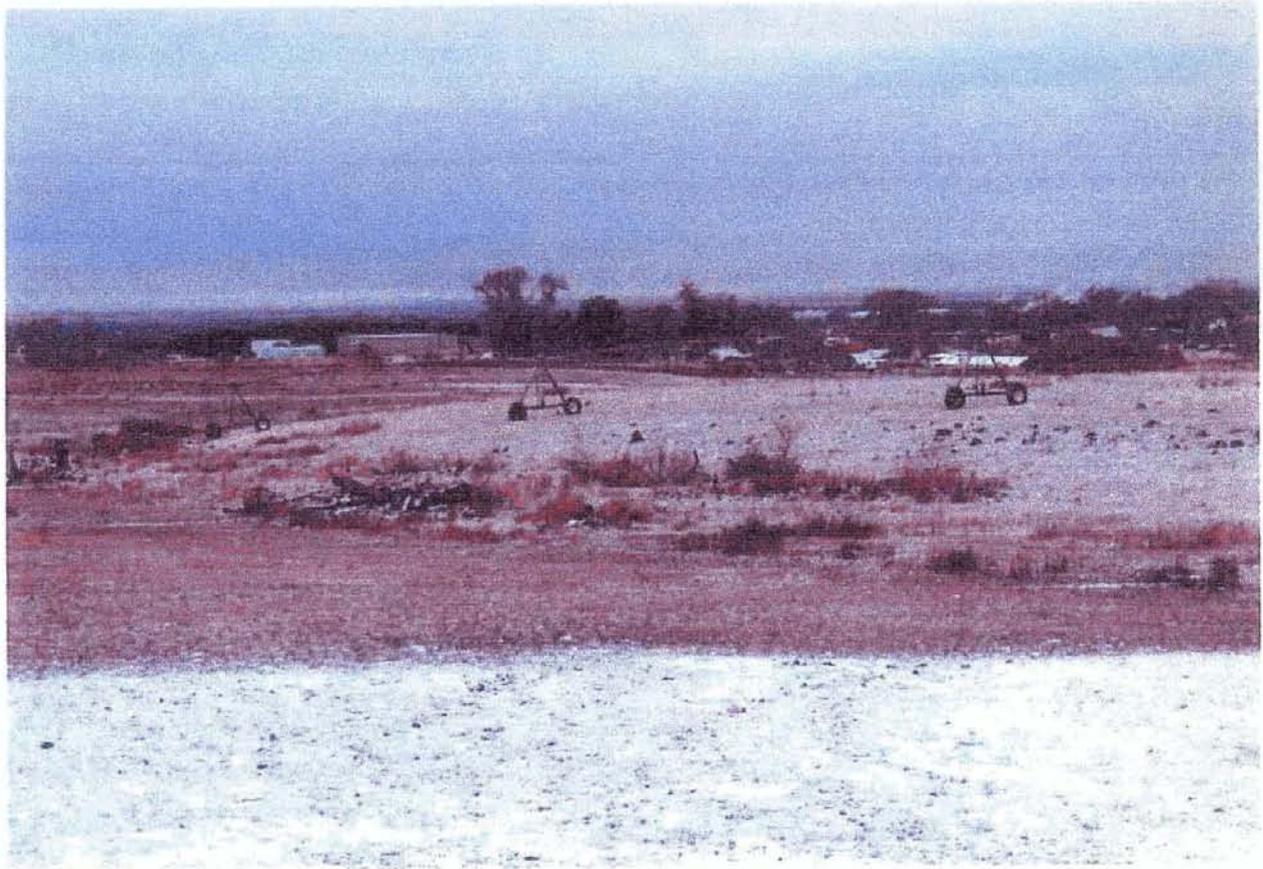
AREA 1 - LAND USED AS PASTURE WITH LAND DEVELOPMENT EVIDENT



AREA 2 – OWNERS CURRENTLY UPDATING IRRIGATION SYSTEM



AREA 2 – LAND IRRIGATED AND USE FOR LIVESTOCK PASTURE



AREA 3 – LAND PREVIOUSLY FARMED EVIDENT WITH EXISTING PIVOT



AREA 3 –LAND CURRENTLY USED AS PASTURE HORSES AT GRAZE



AREA 4 –OBVIOUSLY FARMED GROUND CROP STUBBLE VISIBLE.



AREA 3 –WEST END OF FIELD, VISIBLE CORRIGATION LINES



AREA 5 – LAND CURRENTLY USED AS PASTURE, HISTORICALLY FARMED



AREA 5 – CANAL IRRIGATION SYSTEM WIDTH AND CORRIGATION LINES



AREA 6 – MATURE SUBDIVISION LARGELY IRRIGATED WITH MATURE TREES



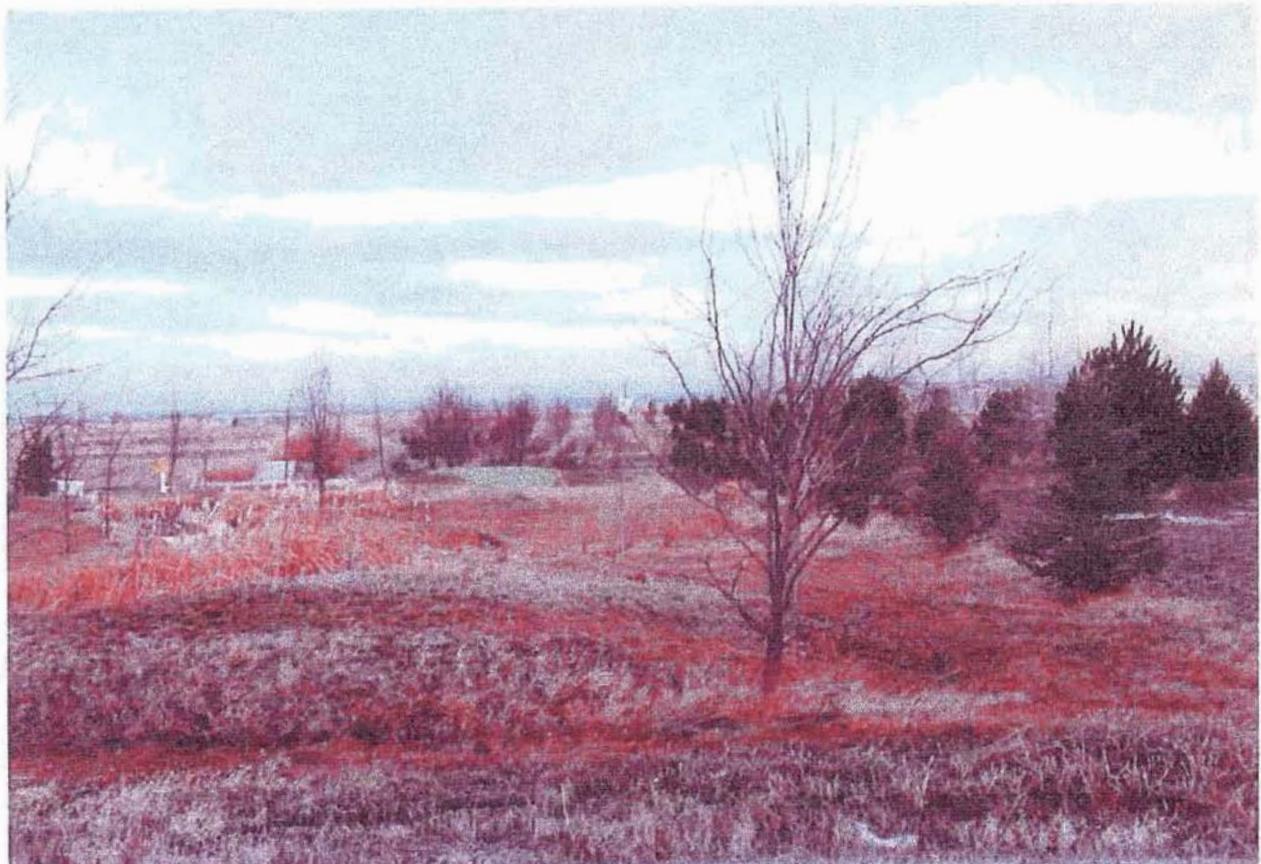
AREA 6 – CANAL DISTRIBUTION SYSTEM & USE EVIDENT



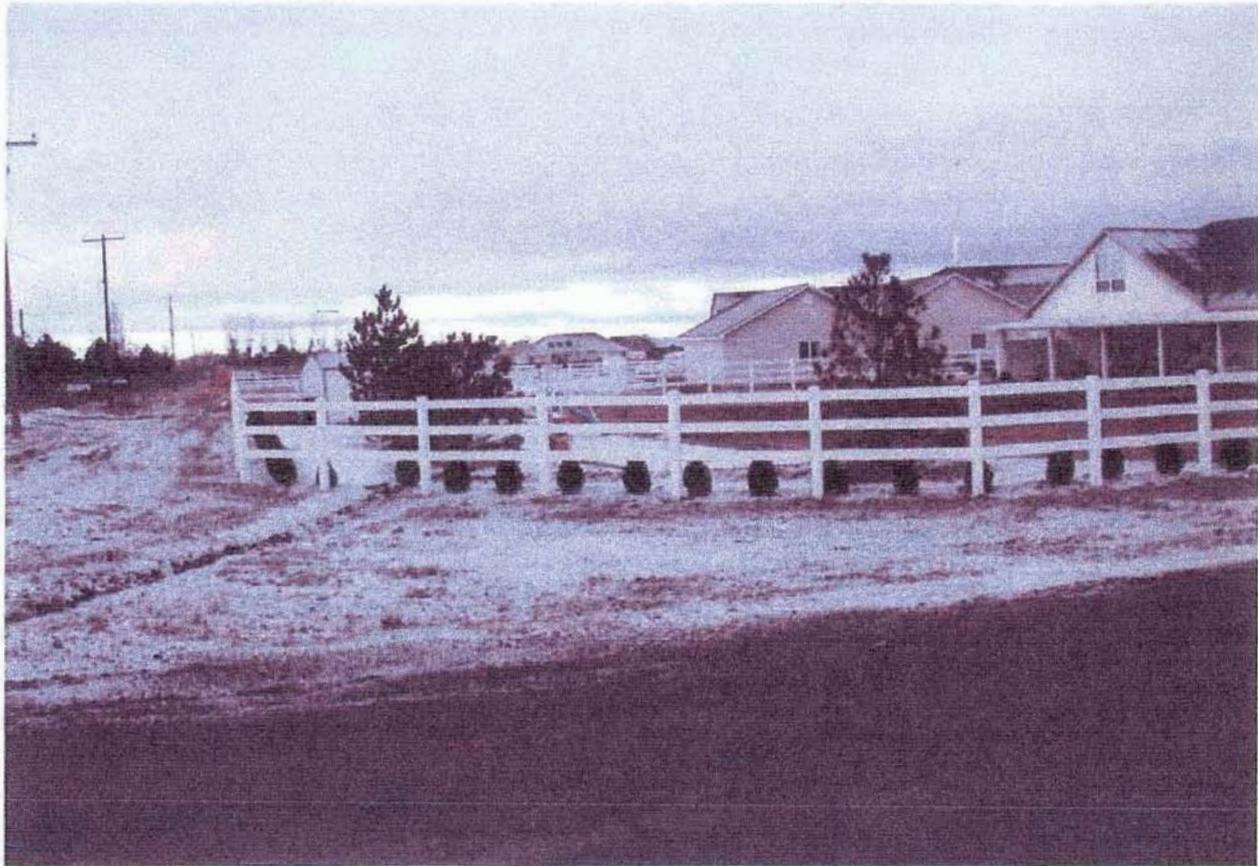
AREA 8 – SUBDIVISION WITH SEVERAL LARGE AREAS OF WELL IRRIGATED PASTURES. LIVESTOCK AT GRAZE IN SEVERAL PASTURE AREAS THREW OUT THE SUBDIVIONS.



AREA 11 – SUBDIVISION WITH VERY LARGE LAWN AREA IRRIGATED WITH CANAL WATER



AREA 11 – RV PORTION WITH AESTHETIC POND, TREES, AND LARGE GREEN AREAS



AREA 7 – DEVELOPING SUB., CODED AS UN-IRRIGATED, SEVERAL HOMES WITH LANDSCAPING



AREA 7 – CANAL WATER DELIVERY AND IRRIGATION SYSTEM TO ALL RESIDENCE



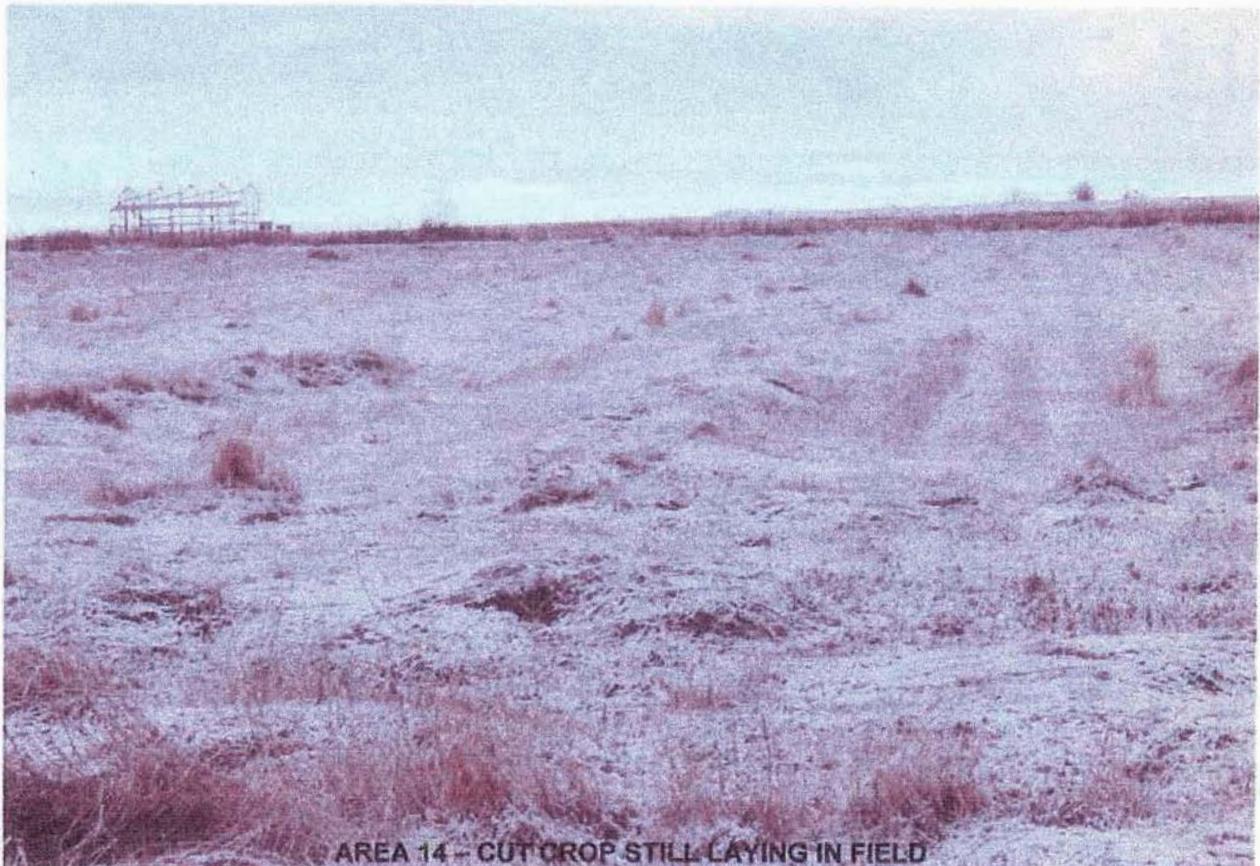
AREA 12 – TREE FARM, CODE AS UN-IRRIGATED



AREA 12 – CANAL WATER IRRIGATION SYSTEM



AREA 14 FARMED GROUND PORTIONS OF CROP STILL IN FIELD



AREA 14 – CUT CROP STILL LAYING IN FIELD



AREA 16 – GROUND AS BASE OF BUTTE FARMED AND LEFT UN-HARVESTED



AREA 17 – PASTURE LAND WITH IRRIGATION AND LIVESTOCK AT GRAZE



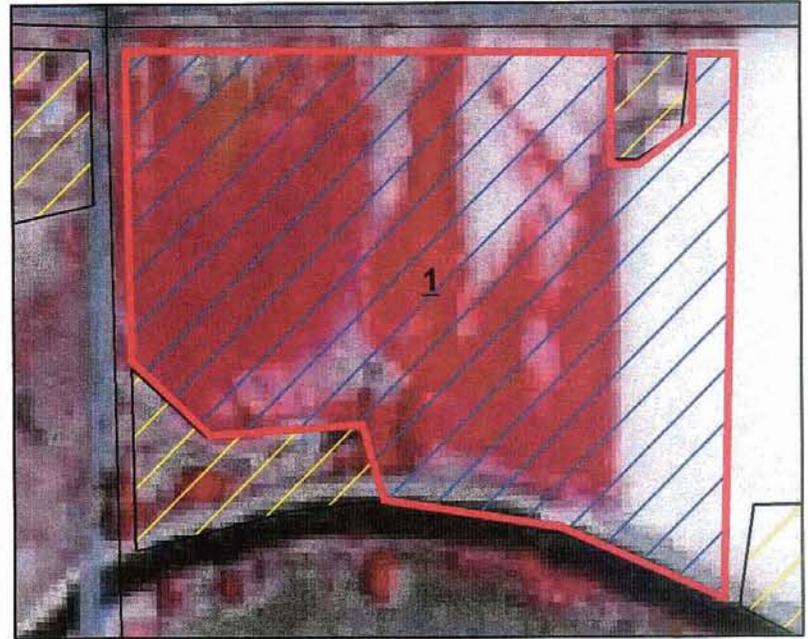
AREA 18 – GROUND CURRENTLY USED AS LIVESTOCK PASTURE WITH IRRIGATION IN PLACE



AREA 18 – GAZEING EVIDENT WITH WATERING TROUGH AND LIVESTOCK PATHS



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06

SITE 1

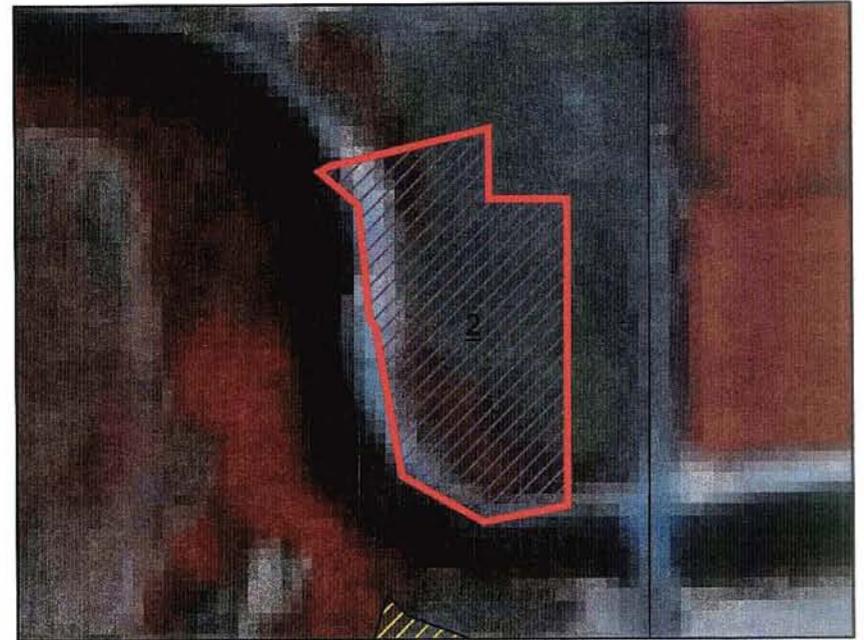
THIS SITE WAS CLEARLY IRRIGATED IN 1987, PORTIONS OF THE AREA AND MAYBE ALL WERE IRRIGATED IN 2004, DURING THE SITE VISIT THERE WAS ROAD CONSTRUCTION OCCURING WITH HEAVY EQUIPMENT PRESENT. THIS MAYBE THE REASON FOR THE LACK OF CROP. THE LAND APPPEARED TO BE USED FOR PASTURE AT THE TIME. (2006)

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #1**

- IGWA_SITE_VISIT_AREAS
- IGWA REV-TFCC CLAIMS
- code
- Not - Irrigated
- Miscellaneous
- Subdivision



NAIP 2004 AERIAL PHOTO



1987 INFRARED AERIAL PHOTO

SITE 2

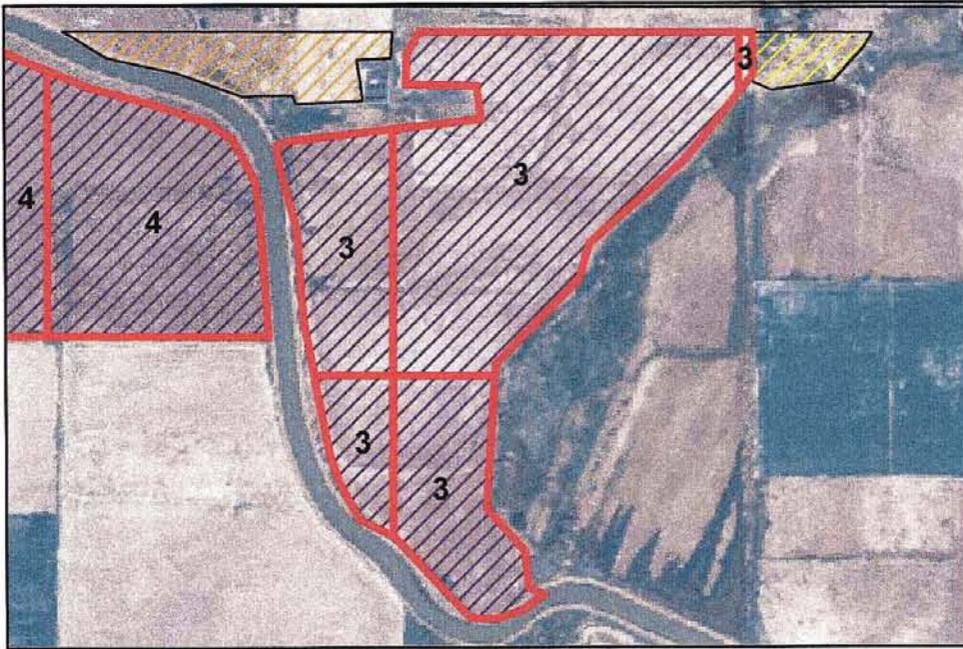
THIS SITE IS USED FOR HORSE PASTURE AND IS ACTIVELY GRAZED, A NEW IRRIGATION SYSTEM WITH RISERS HAD JUST BEEN INSTALLED FOR IRRIGATION OF PASTURE.



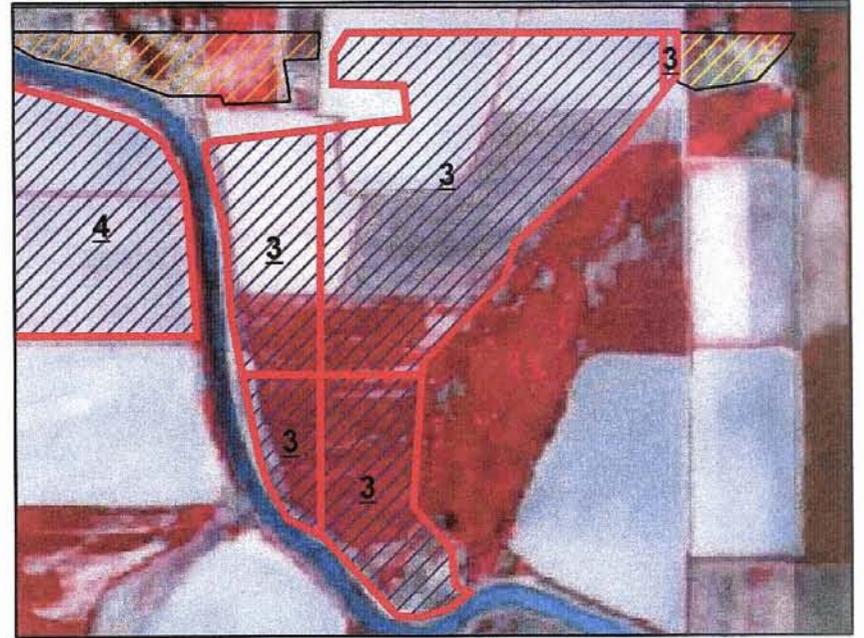
DIGITAL SITE PHOTO 1/19/06

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #2**

- Legend**
-  IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 -  SUBDIVISION 2004
 -  SUBDIVISION 1987
 -  MISC. 2004
 -  MISC. 1987
 -  NON-IRR. 2004
 -  NON-IRR. 1987



NAIP 2004 AERIAL PHOTO



1987 INFRARED AERIAL PHOTO



SITE 3

DIGITAL SITE PHOTO 1/19/06

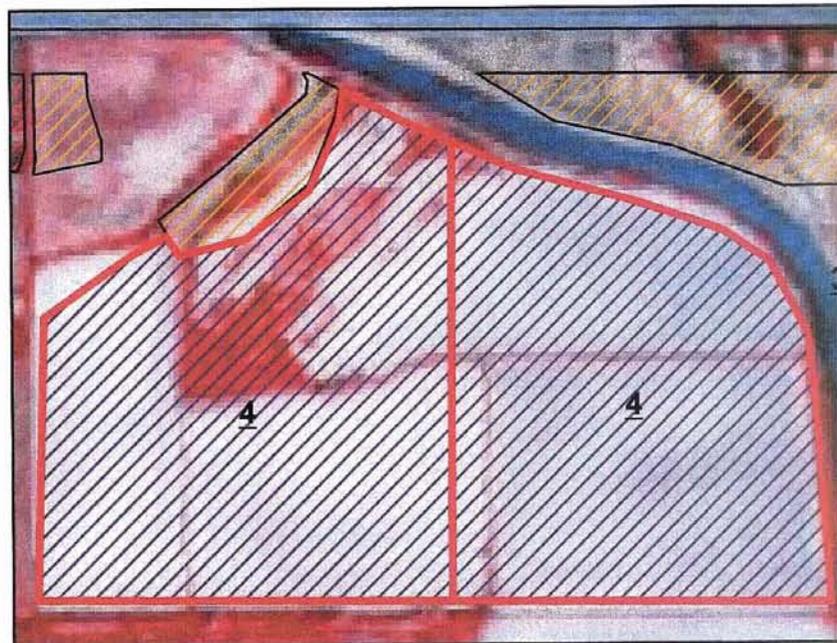
AREA WAS HISTORICALLY IRRIGATED IN 1987.
 2004 AERIAL DOESN'T SHOW MUCH IRRIGATION.
 THE LAND HAS BEEN TIED UP IN AN ESTATE DISPUTE.
 USEIS TO BE RESUMED. THERE IS A PIVOT INSTALLED ON
 THIS PARCEL OF LAND NOW WITH CORRIGATES VISIBLE
 AND ANIMAL CURRENTLY GRAZING.

**SURFACE WATER COALITION
 TFCC - IGWR - REVIEW AREAS
 BROCKWAY REVIEW AREA #3**

- Legend**
- IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 - code, year**
 - SUBDIVISION 2004
 - SUBDIVISION 1987
 - MISC. 2004
 - MISC. 1987
 - NON-IRR. 2004
 - NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFRARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06



SITE 4

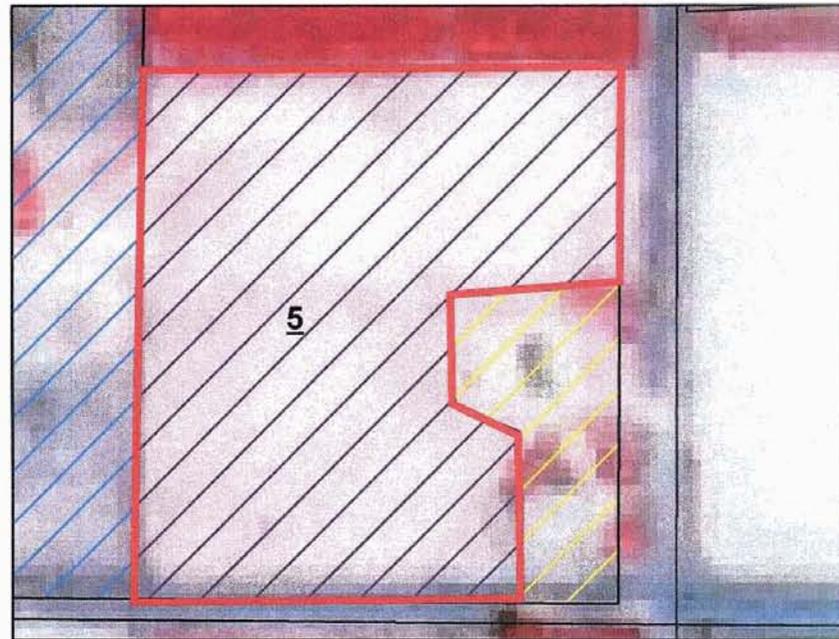
AREA WAS IRRIGATED IN 1987. LAND MAY HAVE BEEN RESTED OR IN GRAIN IN 2004. THERE DOESN'T APPEAR TO BE MUCH IRRIGATION THIS YEAR. THE SITE VISIT IN 2006 CLEARLY SHOW THAT THE LAND HAS BEEN IRRIGATED/FARMED WITH CANAL WATER.

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #4**

- Legend**
-  IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS code, year**
 -  SUBDIVISION 2004
 -  SUBDIVISION 1987
 -  MISC. 2004
 -  MISC. 1987
 -  NON-IRR. 2004
 -  NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

SITE 5

LAND WAS IRRIGATED IN 1987. IRRIGATION IS NOT CLEARLY EVIDENT IN THE 2004 AERIAL PHOTO. SITE VISIT IN 2006 REVEALS WORKED PASTURE GROUND WITH WELL ESTABLISHED CANAL WATER IRRIGATION SYSTEM.



DIGITAL SITE PHOTO 1/19/06



**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #5**

- Legend**
- IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 - code, year**
 - SUBDIVISION 2004
 - SUBDIVISION 1987
 - MISC. 2004
 - MISC. 1987
 - NON-IRR. 2004
 - NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

SITE 6

AREA WAS VERY WELL IRRIGATED IN 1987. A LARGE LOT SUBDIVISION WITH VERY LARGE GREEN AREAS IN 2004. SUBDIVISION CLEARLY USES THE CANAL WATER SHARES TO IRRIGATE. LOT SIZES AND YARD SIZES ARE MUCH LARGER THAN ANY TYPICAL SUBDIVISION



DIGITAL SITE PHOTO 1/19/06

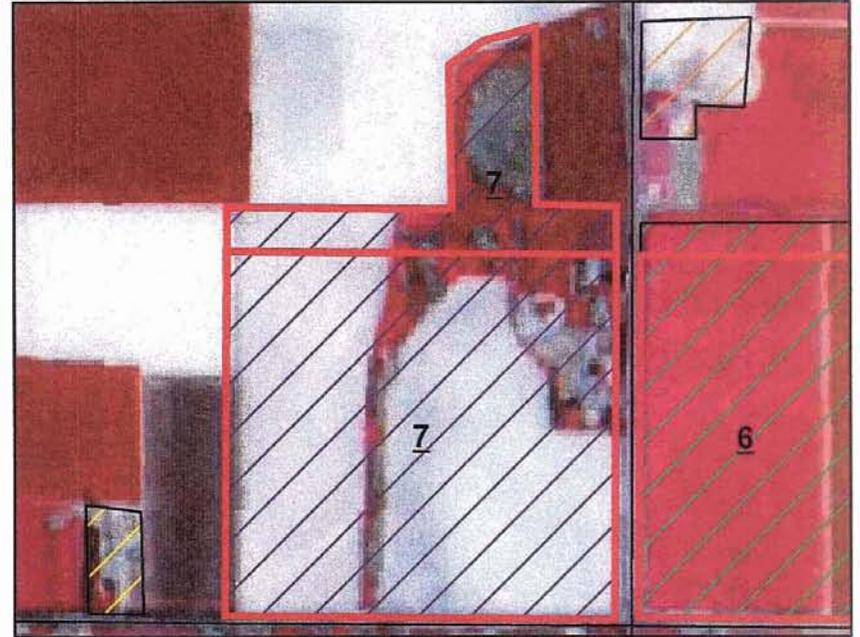
**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #6**

Legend

-  IGWA_SITE_VISIT_AREAS
- IGWA REV-TFCC CLAIMS code, year**
-  SUBDIVISION 2004
-  SUBDIVISION 1987
-  MISC. 2004
-  MISC. 1987
-  NON-IRR. 2004
-  NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

SITE 7

THIS AREA WAS DETERMINED BY KING TO BE NON IRRIGATED 2004. THE 1987 PHOTO CLEARLY SHOWS IRRIGATION. THE 2004 PHOTO REVEALS CLEARLY A LARGE LOT SUBDIVISION UNDER WAY WITH AN OBVIOUS CANAL WATER IRRIGATION DISTRIBUTION SYSTEM.



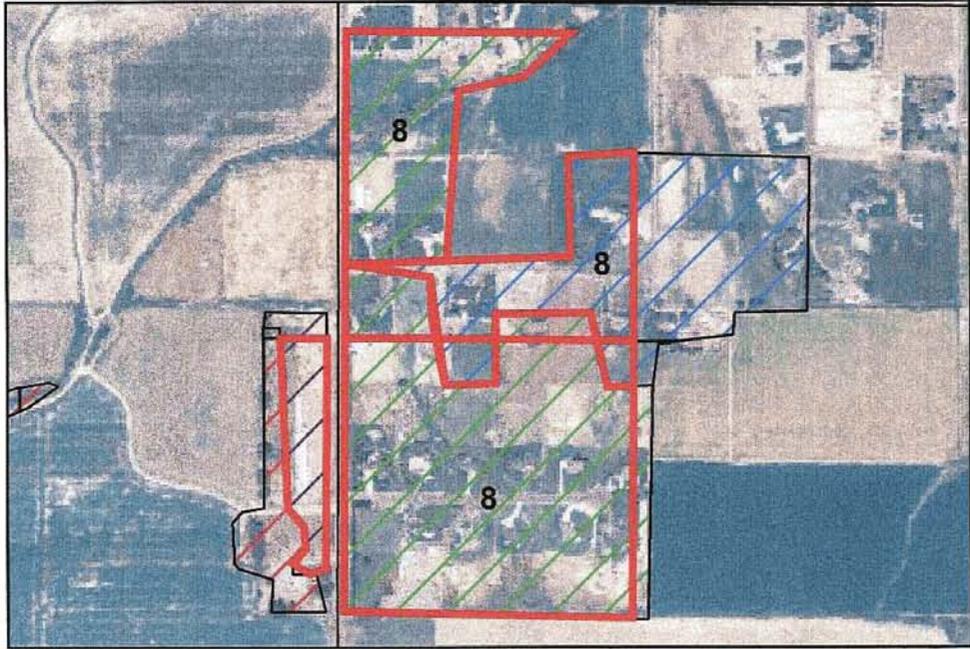
DIGITAL SITE PHOTO 1/19/06



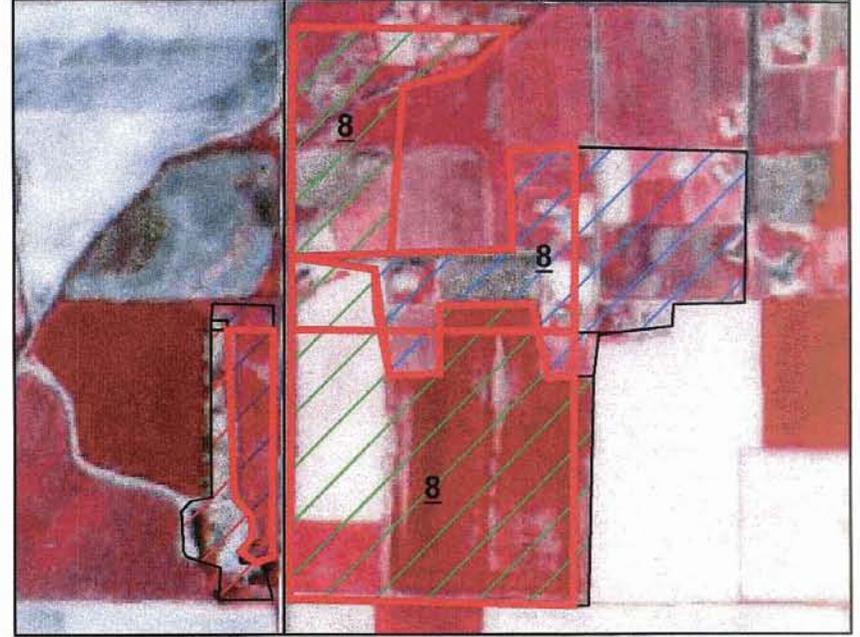
**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #7**

Legend

- IGWA_SITE_VISIT_AREAS
- IGWA REV-TFCC CLAIMS**
- code, year**
- SUBDIVISION 2004
- SUBDIVISION 1987
- MISC. 2004
- MISC. 1987
- NON-IRR. 2004
- NON-IRR 1987



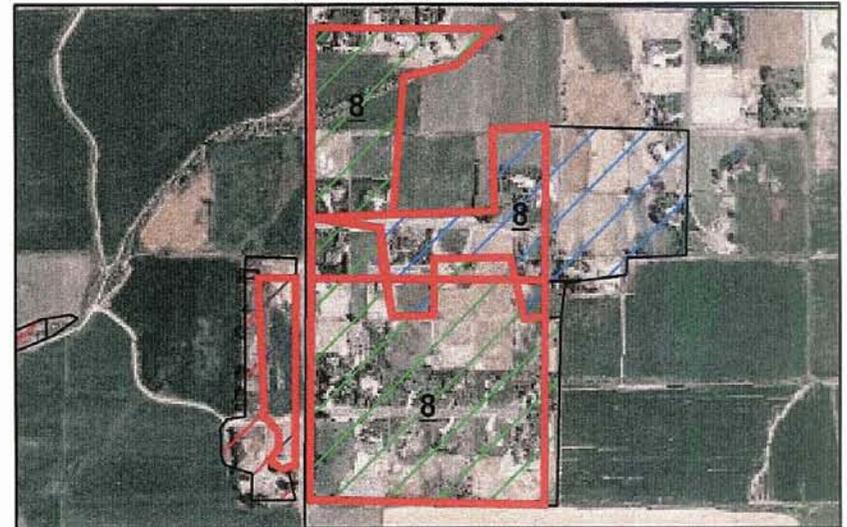
NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06



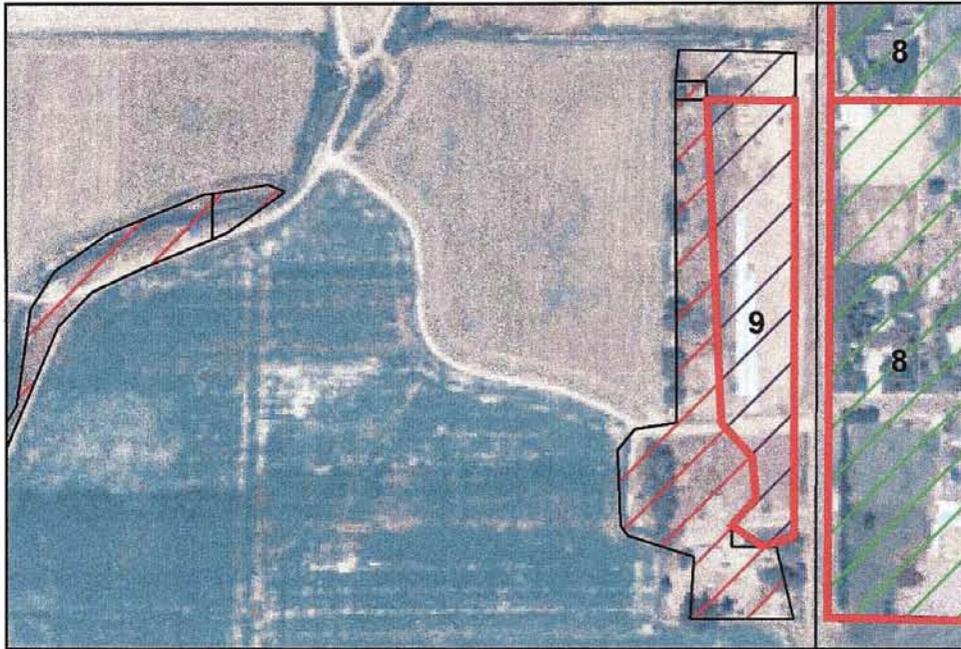
NAIP 2006 AERIAL PHOTO

SITE 8
 AREA IS IRRIGATED EFFECTIVELY IN 1987. IN THE 2004 AERIAL SOME OF THE LAND IS RESIDENTIAL BUT CLEARLY A MAJORITY OF THE LAND IS USED AS PASTURE. A CANAL WATER DISTRIBUTION SYSTEM IS VISIBLE. ALSO NOTE, THE BLUE HATCH DELINIATING A SUBDIVISION. IN 1987 JUST EAST OF SITE 8, DOES NOT APPEAR TO BE A SUBDIVISION AND IS MOSTLY IRRIGATED IN 1987, AND 2004.

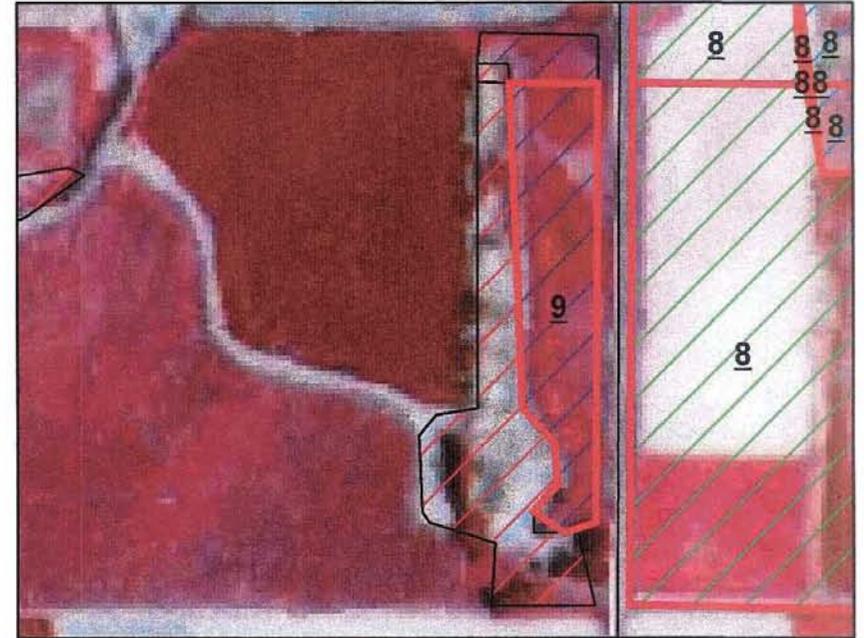
**SURFACE WATER COALITION
 TFCC - IGWR - REVIEW AREAS
 BROCKWAY REVIEW AREA #8**

Legend

- IGWA_SITE_VISIT_AREAS
- IGWA_REV-TFCC_CLAIMS
- code, year
- SUBDIVISION 2004
- SUBDIVISION 1987
- MISC. 2004
- MISC. 1987
- NON-IRR. 2004
- NON-IRR. 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

SITE 9

AREA IS CLEARLY IRRIGATED IN 1987. THE 2004 PHOTO NO IRRIGATION WITH THE SITE USED FOR FEED STORAGE. THE SITE VISIT IN 2006 ALSO SHOWS THE AREA USED FOR FEED STORAGE. THE WATER SHARES ARE STILL AVAILABLE FOR RESUMPTION ON THIS PARCEL IF SO DESIRED. THIS SMALL PARCEL MAY BE RESTED ON SHORT WATER YEARS AND RESUMED ON MORE DESIRABLE YEARS.



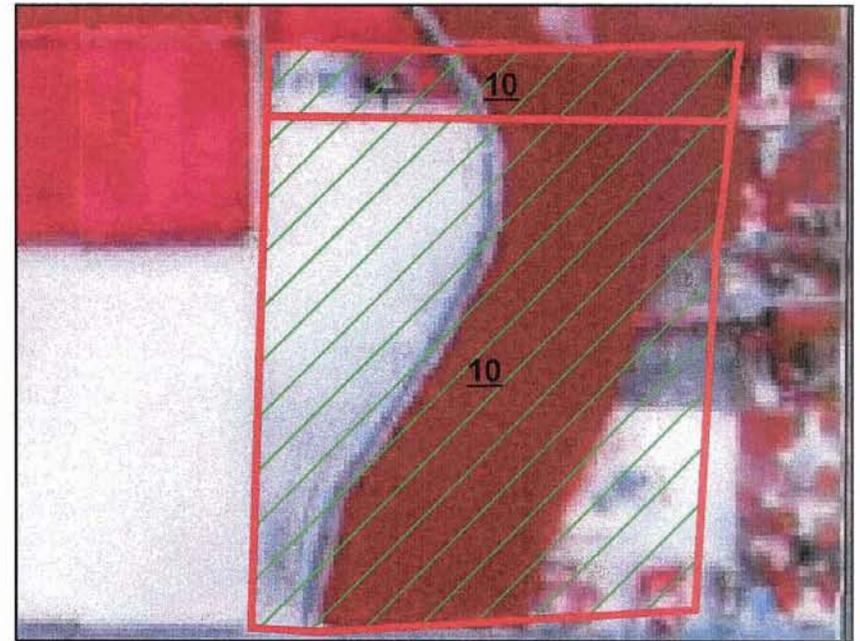
DIGITAL SITE PHOTO 1/19/06

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #9**

- Legend**
- IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 - code, year**
 - SUBDIVISION 2004
 - SUBDIVISION 1987
 - MISC. 2004
 - MISC. 1987
 - NON-IRR. 2004
 - NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

SITE 10

AREA IS WELL IRRIGATED IN 1987, AND PARTIALLY SUBDIVIDED IN 2004, WITH VERY LARGE LOT AND LARGE PORTIONS OF IRRIGATED LAND. THE CANAL WATER DISTRIBUTION SYSTEM IS VISIBLE FOR EACH LOT.

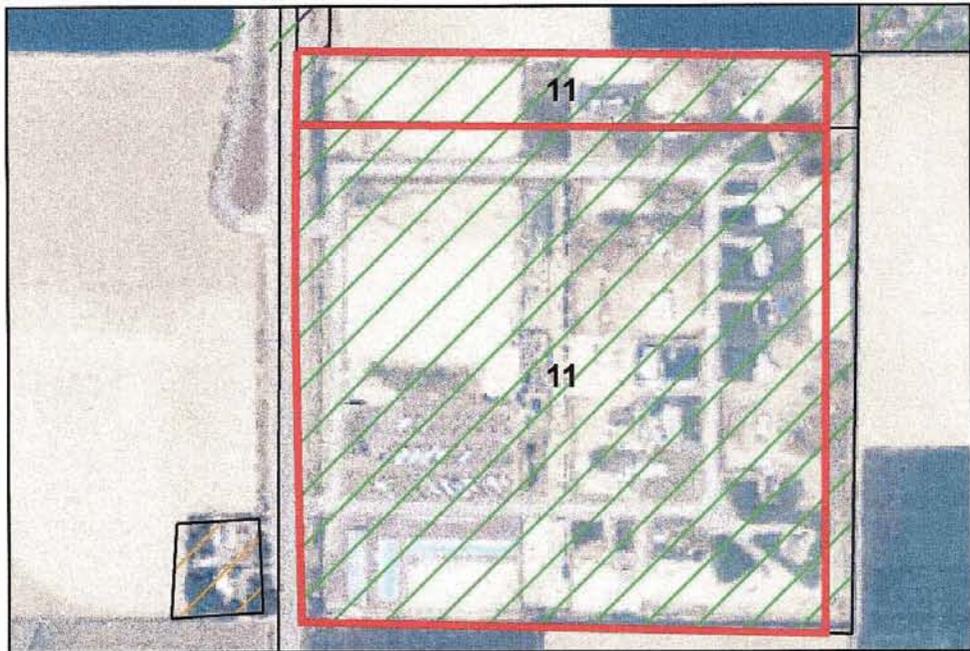


DIGITAL SITE PHOTO 1/19/06

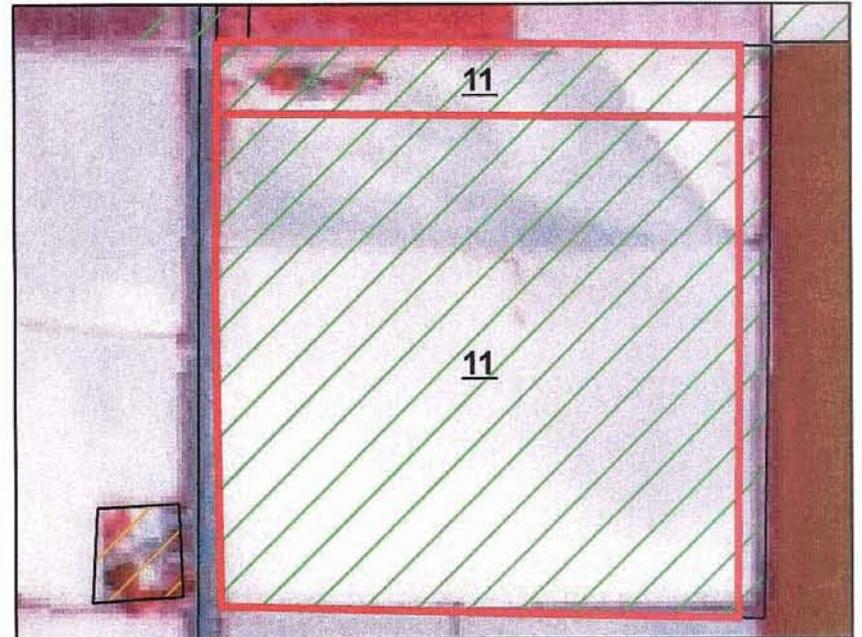
**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #10**

Legend

- IGWA_SITE_VISIT_AREAS
- IGWA REV-TFCC CLAIMS
- code, year
- SUBDIVISION 2004
- SUBDIVISION 1987
- MISC. 2004
- MISC. 1987
- NON-IRR. 2004
- NON-IRR. 1987



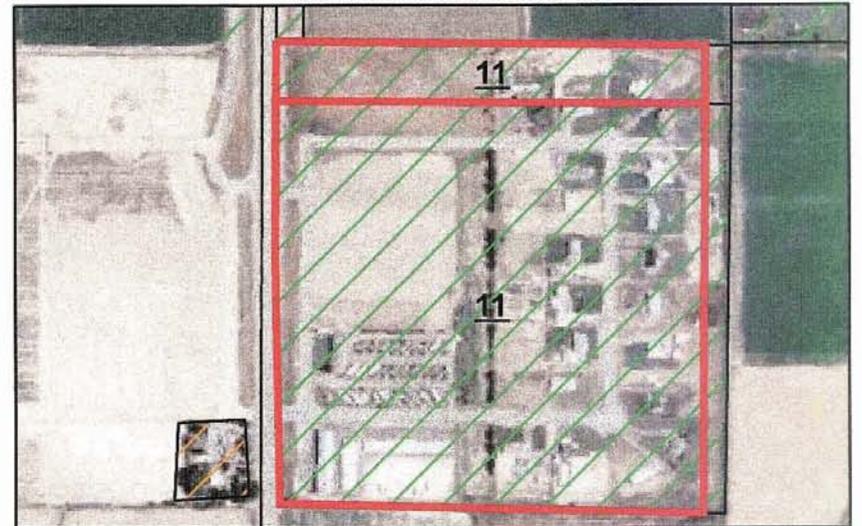
NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06



NAIP 2006 AERIAL PHOTO

SITE 11
 THE AREA IS CURRENTLY A LARGE LOT SUBDIVISION AS WELL AS AN RV PARK RECREATION AREA. THE 1987 AERIAL REVEALS COMPLETE IRRIGATION. THE 2004 PHOTO SHOWS SOME PORTIONS OF A SUBDIVISION. THE SITE VISIT REVEALS A LARGE AMOUNT OF TREES AND GRASS AS WELL AS A MID SIZED STEAM/POND AESTHETIC AREA THROUGH THE RV PARK AREA. THE YARD SIZES ON THESE LOTS ARE MUCH LARGER THAN TYPICAL LOTS, CANAL WATER DISTRIBUTION SYSTEM IS VISIBLE.

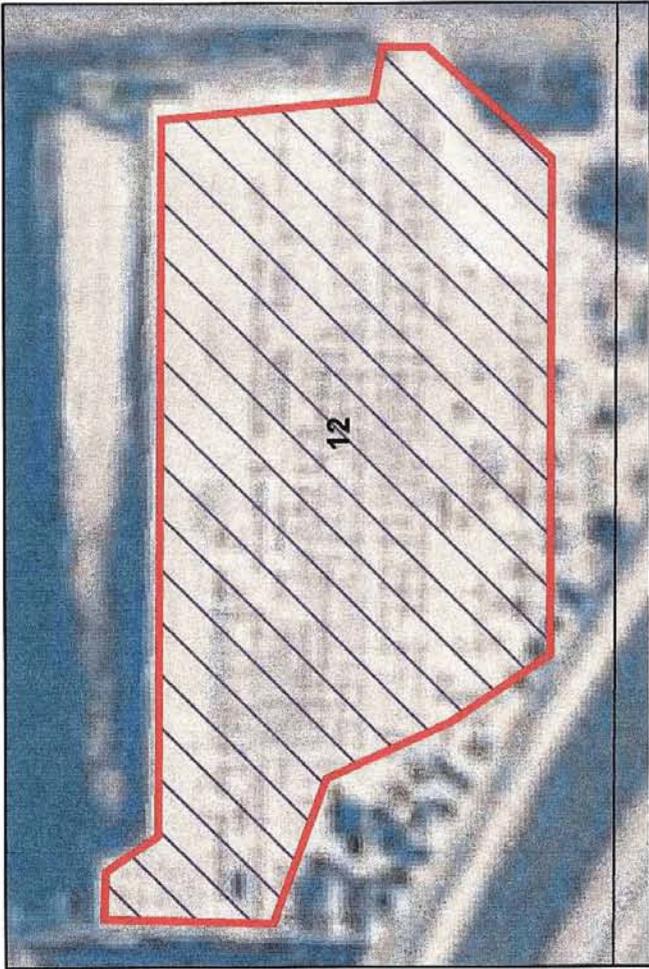
ROCKWAY ENGINEERING, PLLC.
 .R - NOV. 2, 2007

**SURFACE WATER COALITION
 TFCC - IGWR - REVIEW AREAS
 BROCKWAY REVIEW AREA #11**

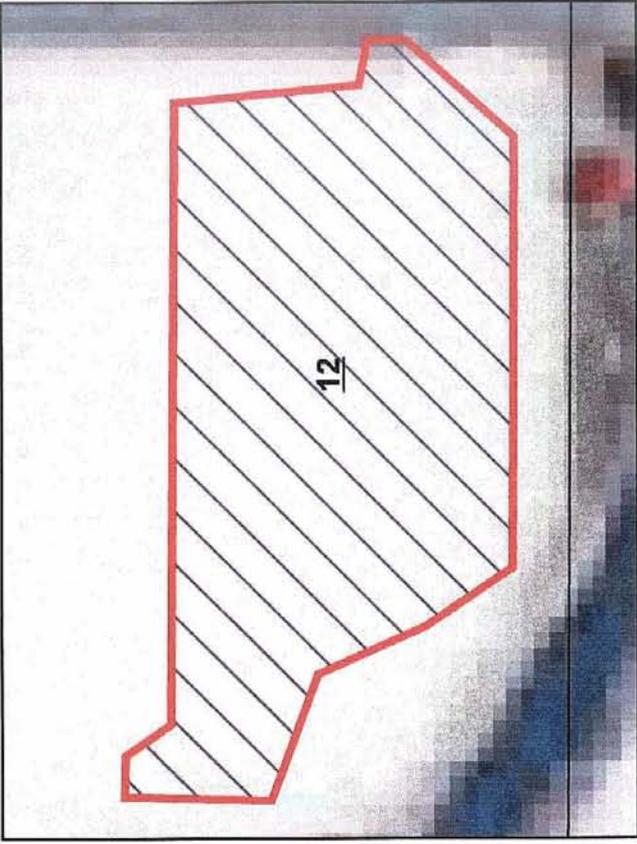
FIGURE 25

Legend

IGWA_SITE_VISIT_AREAS	MISC. 2004
IGWA_REV-TFCC_CLAIMS	MISC. 1987
SUBDIVISION 2004	NON-IRR. 2004
SUBDIVISION 1987	NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO

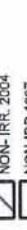
SITE 12

THIS AREA IN 1987 IS IRRIGATED. IN 2004 THE AREA APPEARS IRRIGATED FROM THE AERIAL PHOTO. THE SITE VISIT DOES SHOW A LARGE TREE FARM. THE CANAL DISTRIBUTION SYSTEM FOR THE TREE FARM IS VISIBLE.

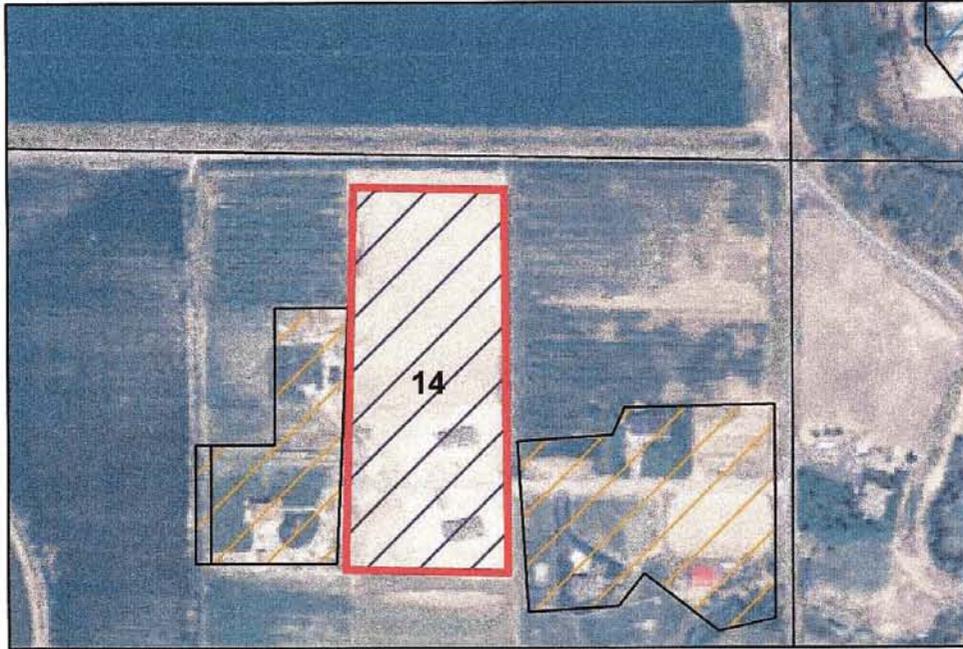


DIGITAL SITE PHOTO 1/19/06

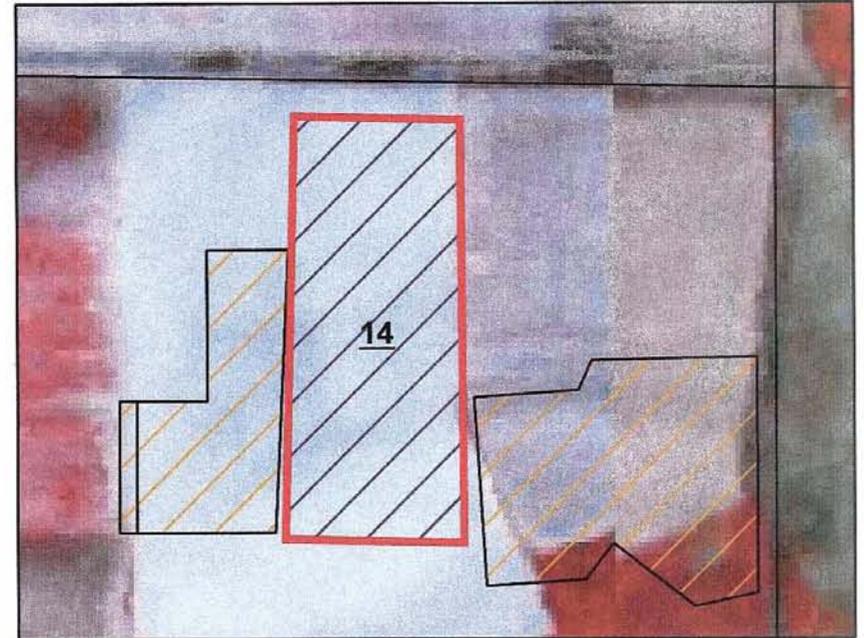


- Legend**
-  IGWA_SITE_VISIT_AREAS
 -  IGWA REV-TFCC CLAIMS code, year
 -  SUBDIVISION 2004
 -  SUBDIVISION 1987
 -  MSC, 2004
 -  MSC, 1987
 -  NON-IRR, 2004
 -  NON-IRR 1987

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #12**



NAIP 2004 AERIAL PHOTO



1987 INFRARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06

SITE 14

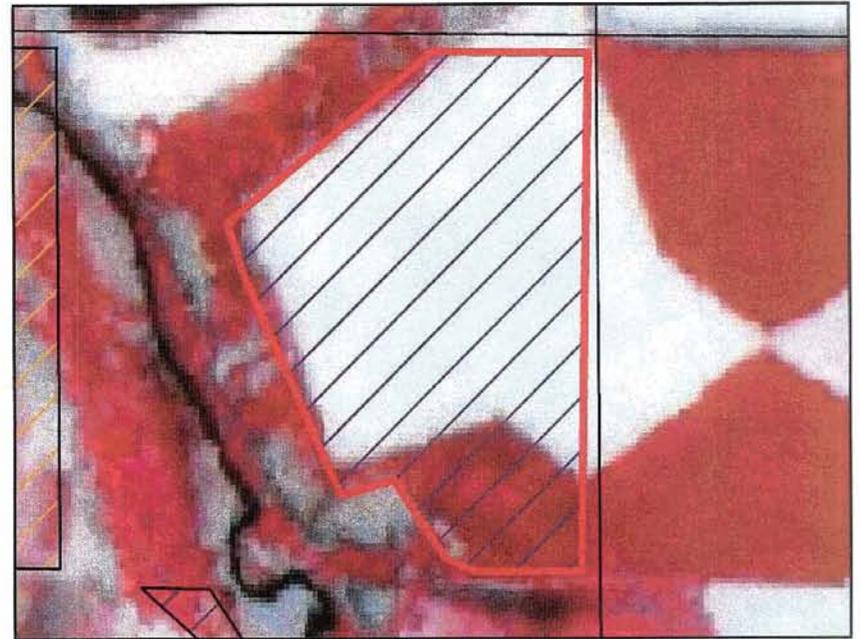
THE AREA IS IRRIGATED IN 1987. THE 2004 AERIAL SHOWS NEW RESIDENTIAL CONSTRUCTION IN THE BACK PORTION OF THE PARCEL. THE SITE VISIT IN 2006 SHOWED IRRIGATION WITH CUT GRASS/CROP IN THE FIELD.

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #14**

- Legend**
-  IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 - code, year**
 -  SUBDIVISION 2004
 -  SUBDIVISION 1987
 -  MISC. 2004
 -  MISC. 1987
 -  NON-IRR. 2004
 -  NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFRARED AERIAL PHOTO



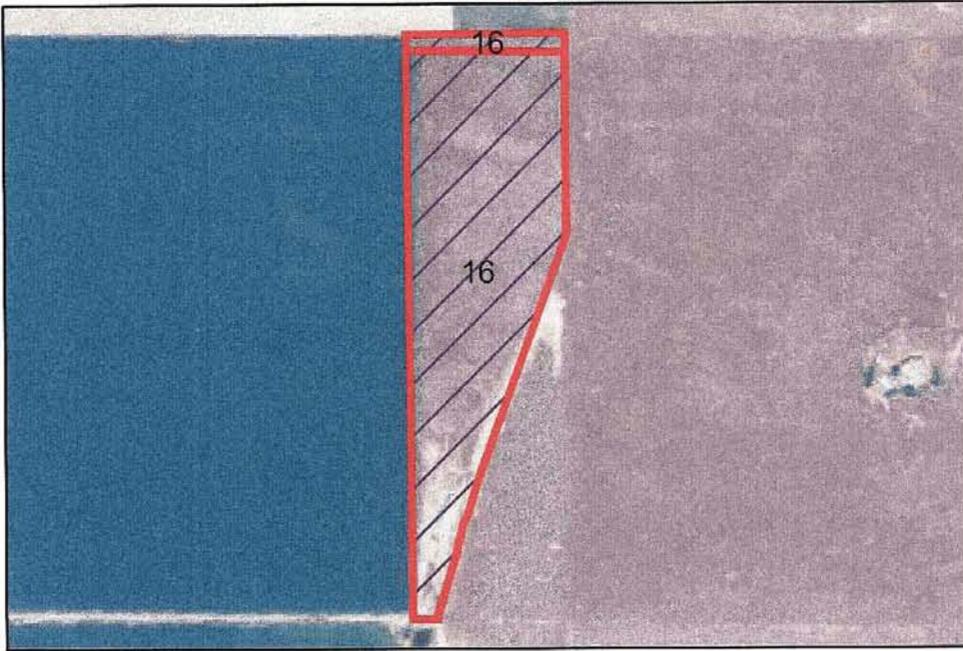
DIGITAL SITE PHOTO 1/19/06

SITE 15

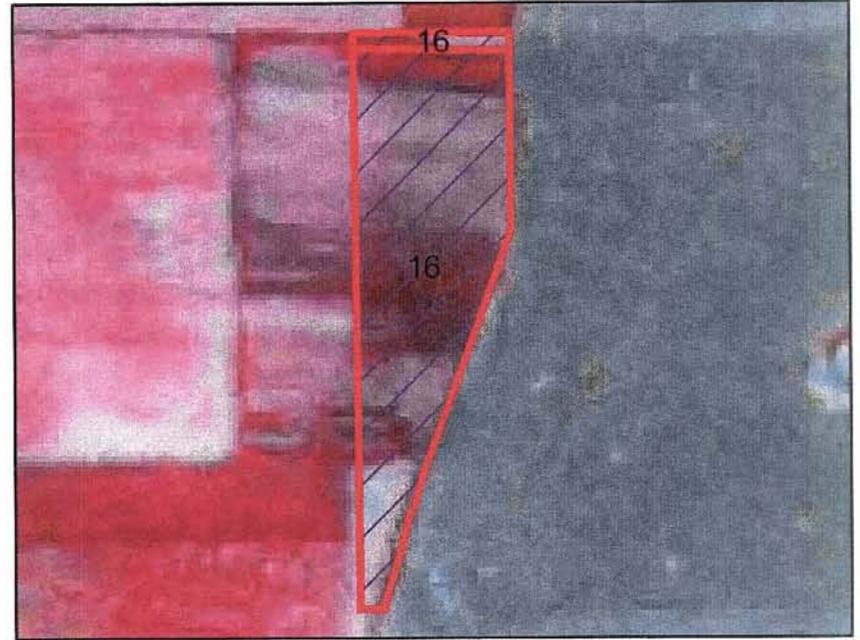
AREA IS IRRIGATED IN 1987. THE 2004 AERIAL SHOWS IRRIGATION. THE SITE VISIT IN 2006 SHOWED THE IRRIGATION DISTRIBUTION SYSTEM AND LAND USE AS PASTURE.

**SURFACE WATER COALITION
TFCC - IGWR - REVIEW AREAS
BROCKWAY REVIEW AREA #15**

- Legend**
- IGWA_SITE_VISIT_AREAS
 - IGWA REV-TFCC CLAIMS**
 - code, year**
 - SUBDIVISION 2004
 - SUBDIVISION 1987
 - MISC. 2004
 - MISC. 1987
 - NON-IRR. 2004
 - NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06

SITE 16

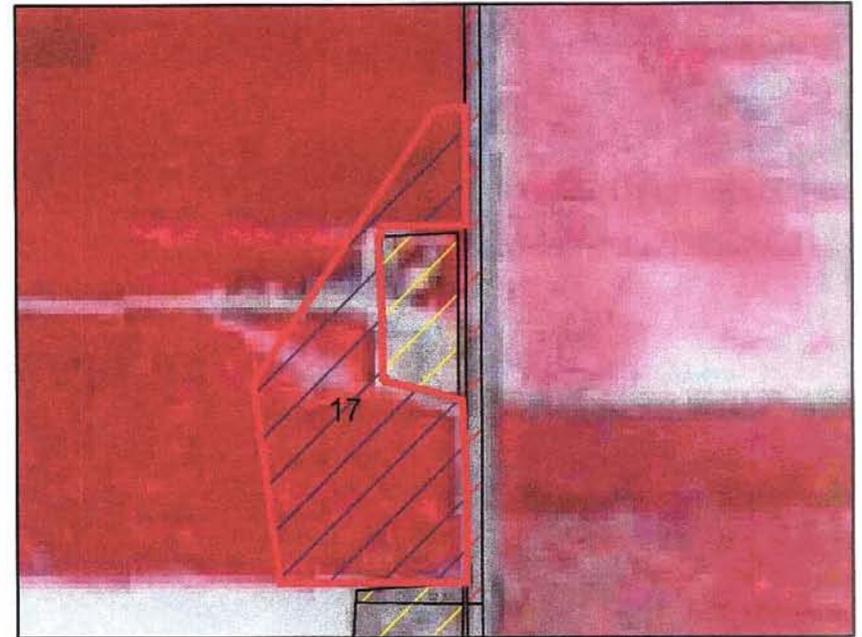
AREA IS CLEARLY IRRIGATED IN 1987. THE SITE APPEARS IRRIGATED IN THE 2004 PHOTO. THE SITE VISIT DOES CLEARLY SHOW VEGETATION ON THE PARCEL. IN 2006 THE PARCEL MAY BE USED AS A WILDLIFE REFUGE. IRRIGATION OF THIS LAND IS LIKELY FOR USE AS EITHER REFUGE LAND OR CROP. PARCEL IS LOCATED AT THE BASE OF THE BUTTE.

SURFACE SUPERVISION
FCC - IGR - REVIEW RES
BROCCO ENGINEERING REVIEW RES

-
- IG SITE VISIT RES
- IGWA REV-TFCC CLAIMS
- 3 0 0 0 0 1 1 1
- ▨ SUBDIVISION 2004
- ▨ SUBDIVISION 1987
- ▨ MISC. 2004
- ▨ MISC. 1987
- ▨ NON-IRR. 2004
- ▨ NON-IRR 1987



NAIP 2004 AERIAL PHOTO



1987 INFARED AERIAL PHOTO



DIGITAL SITE PHOTO 1/19/06

SITE 17

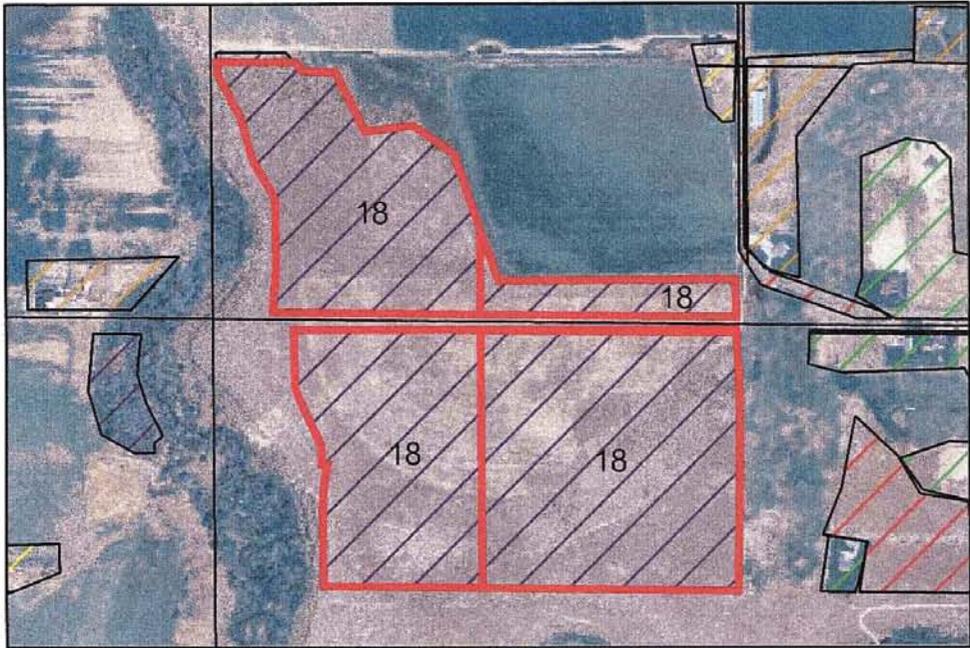
AREA CLEARLY IRRIGATED 1987. THE 2004 PHOTO SHOWS IRRIGATION. THE SITE VISIT IN 2006 REVEALS THE LAND USE IS PASTURE WITH ANIMALS PRESENTLY GRAZING. IRRIGATION SYSTEM IS ALSO VISIBLE

SURFACE SUPERVISION
FCC - IGR - REVIEW RES
BROCK ENGINEERING REVIEW RES 17

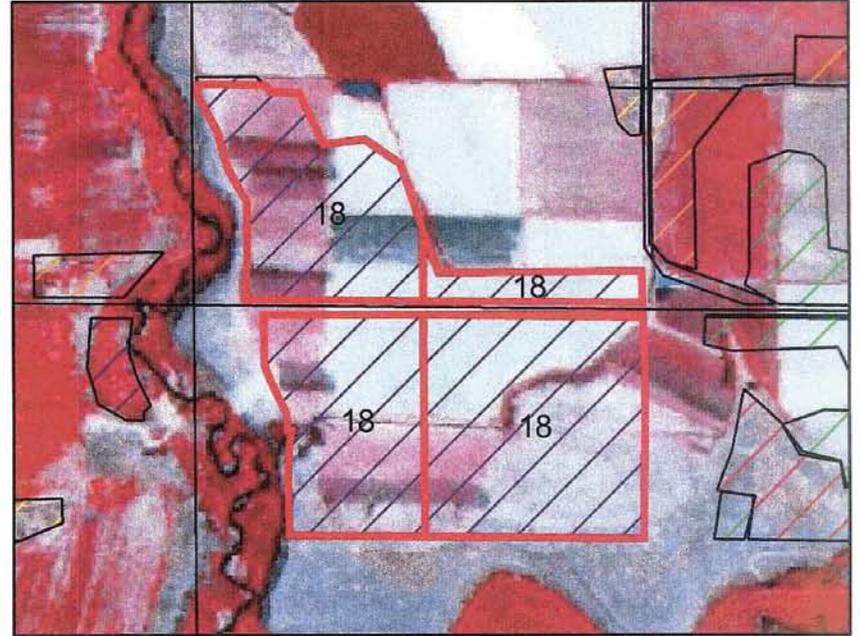
- □ □ □ □ □
- IGR - SUPERVISION RES
- IGWA REV-TFCC CLAIMS
- □ □ □ □ □ □ □
- ▨ SUBDIVISION 2004
- ▨ SUBDIVISION 1987
- ▨ MISC. 2004
- ▨ MISC. 1987
- ▨ NON-IRR. 2004
- ▨ NON-IRR 1987

BROCK ENGINEERING
 NOV. 2007

FIGURE 30



NOV 11 2004 ERI



1987 INF RED ERI

SITE 18

RE IRRIGATED IN 1987. E
 2004 ERI S O S CENTER
 IVO RESEN I E
 IRREGULAR IRRIGATION. E SIDE
 VISIT REVEALS AND USE S SURE.



DIGITAL SITE 19

- IGWA SITE VISIT AREAS
- IGWA REV-TFCC CLAIMS
- SUBDIVISION 2004
- SUBDIVISION 1987
- MISC. 2004
- MISC. 1987
- NON-IRR. 2004
- NONIRR 1987

SURFACE WATER COALITION
 TFCC - IGWR - REVIEW AREAS
 BROCKWAY REVIEW AREA 18

FIGURE 31

Figure 34



Figure 35

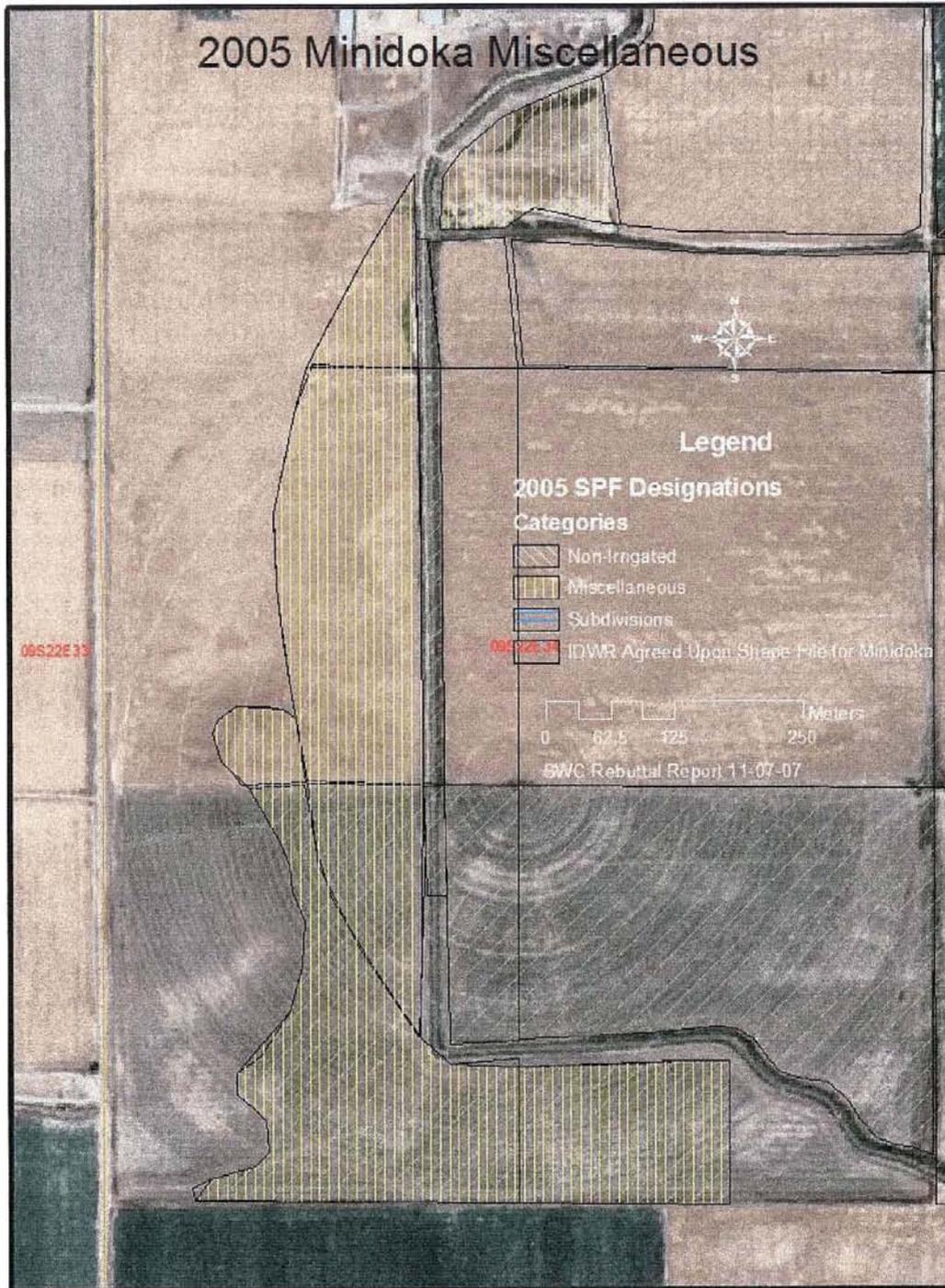


Figure 36



Figure 38



Figure 39



Figure 40



Figure 41



Figure 42

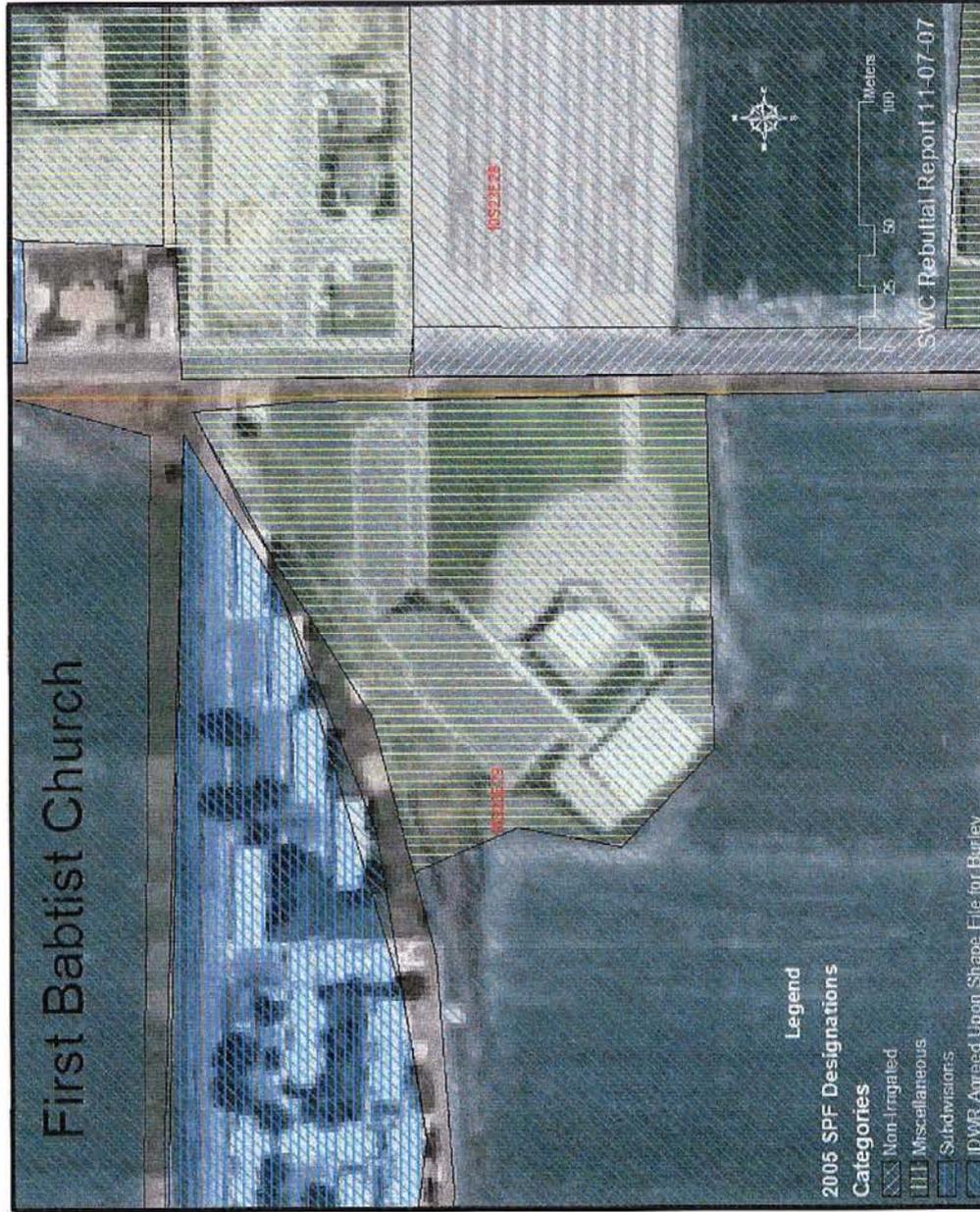


Figure 43

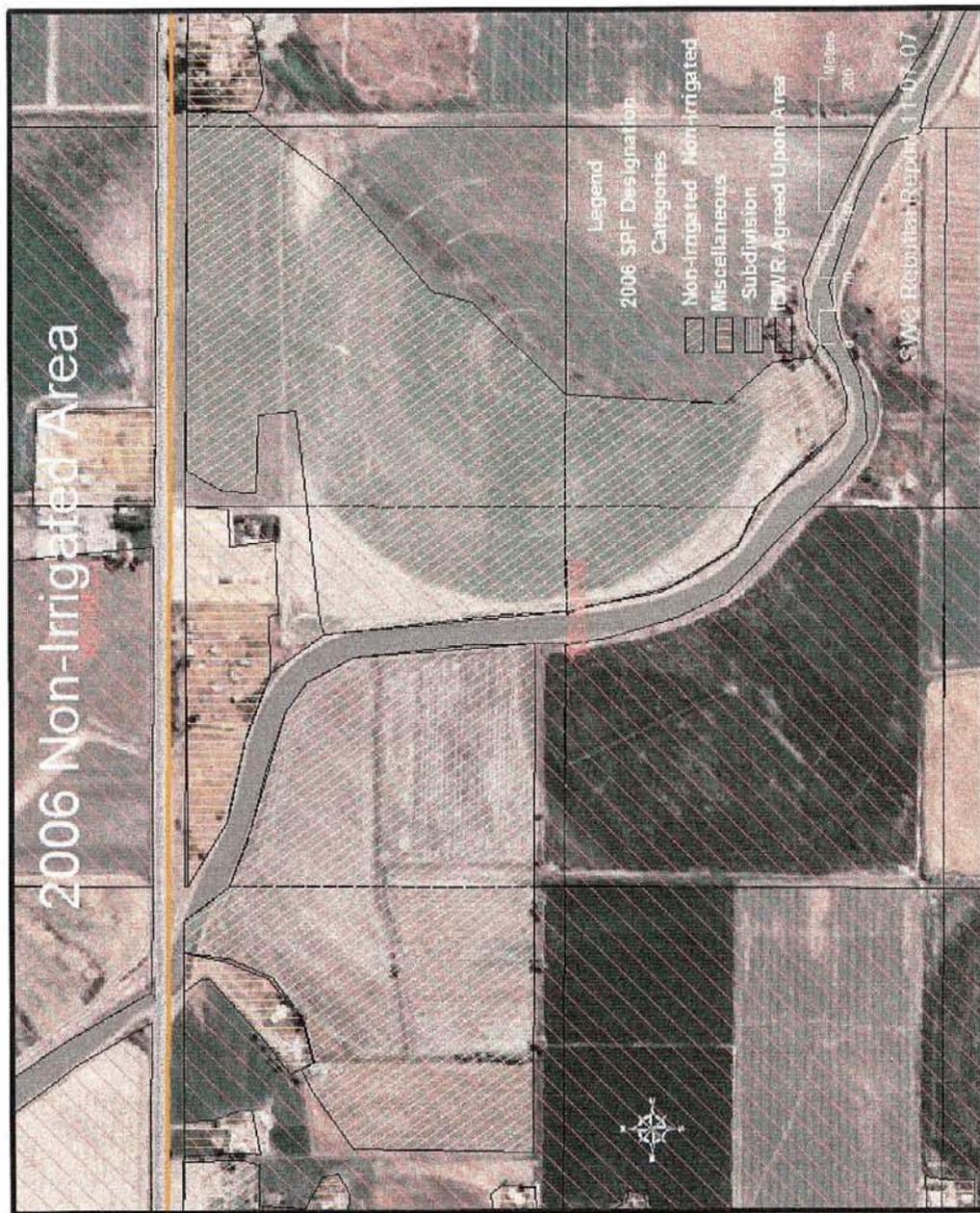


Figure 44

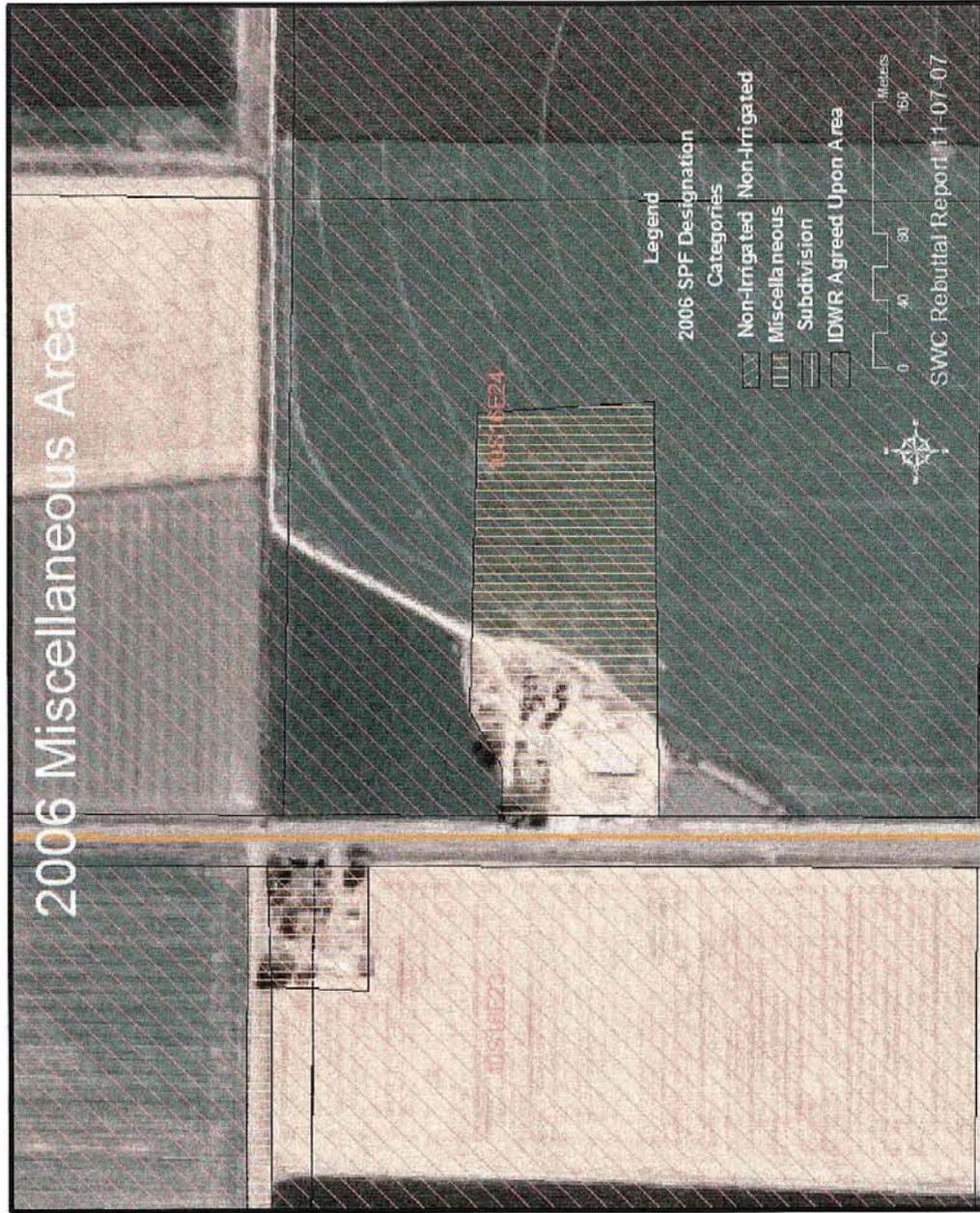


Figure 45

