DISTRICT COURT, WATER DIVISION NO. 5 STATE OF COLORADO 109 8th Street, Suite 104 Glenwood Springs, CO 81601	▲ COURT USE ONLY ▲
CONCERNING THE APPLICATION FOR WATER RIGHTS OF: THOMAS F. AND GINGER L. LATHAM in Mesa County, Colorado.	Case Number: 2023CW3022

FINDINGS OF FACT, CONCLUSIONS OF LAW, RULING OF THE REFEREE, AND DECREE OF THE WATER COURT

The Application for Underground Water Right, Change of Water Rights, and Approval of a Plan for Augmentation was filed on March 28, 2023 ("Application") and was referred to the Water Referee for Water Division No. 5, State of Colorado, by the Water Judge of this Court in accordance with C.R.S. § 37-92-101, *et seq*., known as the Water Right Determination and Administration Act of 1969.

The undersigned Referee, having made such investigations as are necessary to determine whether the statements in the Application are true, and having become fu1ly advised with respect to the subject matter of the Application hereby enters, and makes the following Findings of Fact, Conclusions of Law and Ruling as the Referee in this matter:

FINDINGS OF FACT

1. The statements in the Application are true, except as may be otherwise stated herein.

2. The names, address, telephone number, and address of Applicants are:

   Thomas F. and Ginger L. Latham
   1915 U.S. Highway 6
   DeBeque, CO 81650
   (970) 283-5633

3. No statements of opposition were filed and the time for filing statements of opposition has expired.

4. Report of the Division Engineer. The Court has given due consideration to the Report of the Division Engineer – Summary of Consultation filed July 14, 2023, and the Applicant's response to the same dated August 3, 2023.

FINDINGS RE: FIRST CLAIM FOR RELIEF
(Underground Water Right)

5. Name of Structure, Well Permit Information and Background.

DeBeque Gravel Pit, First Enlargement (the "Pit"). Applicants have obtained a well permit for the DeBeque Gravel Pit from the State Engineer's office, pursuant to C.R.S. §§ 37-90-137(2) and (11), in the name of the Applicants, Well Permit No. 75938-F ("Well Permit"). The Pit was originally mined by Elam Construction, Inc. ("Elam"). In Case No. 05CW076, the Applicants and Elam obtained an absolute water right in the amount of 8.1 acre feet for the annual depletions associated with the evaporation from the pond created by Elam with an exposed water surface area of 3.6 acres. Any out of priority depletions associated with the original exposed surface area of 3.6 acres have been replaced through the operation of the plan for augmentation decreed in Case No. 05CW076.

Subsequently, the Pit was mined by Kirkland Construction, RLLP and expanded pursuant to the Well Permit.

Mining has ceased at the Pit and the resulting pond has been surveyed and the total exposed water surface area is now 7.8 acres. This Application seeks an underground water right for just the annual depletions associated with the evaporation from the additional 4.2 exposed water surface acres and a plan for augmentation for the out of priority depletions associated with the additional 4.2 exposed water surface acres.

6. Legal Description of Structure: DeBeque Gravel Pit, First Enlargement

The DeBeque Gravel Pit, First Enlargement is located in the NE1/4 of the SE1/4 and the SE ¼ of the SE ¼ of Section 8, Township 9 South, Range 97 West, 6th P.M. The approximate location of the DeBeque Gravel Pit is shown on the map attached hereto as Figure 1. Coordinates for the approximate center of the pit pond are Zone 12, NAD83, 738608m E, 4352064m N. See Figure 2.

7. Source and Depth:

The Pit is a gravel pit located in alluvial deposits adjacent to the Colorado River and it intercepts and withdraws groundwater tributary to the Colorado River. The estimated total maximum depth of the Pit is 30 feet.

8. Appropriation Date and Date Put to Beneficial Use: April 6, 2012.

9. Amount and Use: 12.64 acre feet per year, absolute, for evaporative loss from the 4.2 acres of exposed water surface area of the pond.

10. Name and Address of Owner of Land on Which the Structure is Located: The Applicants.

11. Remarks: Applicants request a finding that the water which collects in the Pit is not in storage, as defined in C.R.S. § 37-92-103(10.5) and that, in the administration of the water rights granted pursuant to this Application, statutes and other law relating to the storage of water, including without limitation C.R.S. § 37-92-502(3), shall not be applicable.

12. Water is available for appropriation under this priority. The Applicants have provided evidence of and the Referee specifically finds that 12.64 acre feet of water has been diverted, or otherwise captured, possessed, and controlled and has been applied to the decreed beneficial use.

FINDINGS RE: SECOND CLAIM FOR RELIEF
(Plan for Augmentation and Change of Water Right)

13. Structure to be Augmented: The DeBeque Gravel Pit, First Enlargement, described in the First Claim for Relief.

A. Depletions: The monthly distribution of average evaporative losses from the additional 4.2 acres of exposed groundwater at the Pit is presented in Table 1. Such losses will result in depletions to the Colorado River. The timing of depletions to the river in response to evaporation from the additional 4.2 acres of exposed groundwater at the Pit was evaluated by using the Well Pumping Depletion Model (©2001, Western Water Consulting, Inc.). The analysis assumes that the alluvial aquifer is isotropic, homogeneous, of uniform thickness, and bounded by the river to the west and a no-flow boundary corresponding with the edge of the river valley to the east. The input parameters for the model include stream/aquifer geometries, transmissivity (hydraulic conductivity and aquifer thickness), and specific yield. Because site-specific hydraulic data are not available, estimates of hydraulic conductivity and specific yield were obtained from literature values for the lithology present at the site. The input parameters used to run the model are as follows:

- Average distance from river to pit pond: 480 feet
- Distance from river to no-flow boundary: 2000 feet
- Transmissivity: 50,880 gallons per day per foot (gpd/ft)
- Specific yield: 0.2

The model was run for a 20-year period. Monthly depletions attributed to evaporative losses from the additional 4.2 acres of exposed groundwater and the timing of those depletions to the Colorado River are presented in Table 1.

14. Description of Water Rights to be Changed and Used for Augmentation:

A. The Applicants own 20.5 shares of the capital stock of the Larkin Irrigation Company, which has a total 90 shares issued and outstanding. The water rights represented by two of the Applicants' shares have been changed and dedicated to the plan for augmentation decreed in Case No. 05CW076.

Larkin Ditch (the "Senior Larkin Right")

i. Date Decree Entered: July 22, 1912
Civil Action No. 1927, Mesa County District Court
By decree entered in Case No. W-14, certain changes to the Senior Larkin Right were approved, and a portion of the Senior Larkin Right was abandoned.

ii. Type of water right: Surface (direct flow)

iii. Legal description of point of diversion: The decreed point of diversion for the Larkin Ditch is described as follows: The headgate is situated on the southern bank of the Grand (Colorado) River in Mesa County, Colorado, whence the Southeast corner of the Southwest quarter of Section 27, Township 8 South, Range 97 West, 6th P.M. bears south 2°45' west 2,830 feet.

iv. Source: Colorado River.

v. Appropriation Date: April 1, 1888.

vi. Amount: 25.0 cfs

First Enlargement of the Larkin Ditch (the "Junior Larkin Right")

i. Date Decree Entered: Decreed conditional by decree dated September 20, 1972 and decreed absolute by decree dated October 31, 1973.
Case No.: W-176, District Court in and for Water Division No. 5.

ii. Type of water right: Surface (direct flow).

iii. Legal description of point of diversion: Same point of diversion as described above for the Senior Larkin Right.

iv. Source: Colorado River.

v. Appropriation Date: December 1, 1950.

vi. Amount: 12.5 cfs

vii. Decreed and Historic Use: Irrigation.

15. Description of the Changes Sought and Statement of Plan for Augmentation:

A. Historical Diversions: Diversion records for the Larkin Ditch are available from DWR's CDSS website for the period 1972 through 2022. The Applicants propose the use of historical irrigation credits associated with the dry-up of nine acres of historically irrigated lands permanently retired from irrigation as a result of the mining to offset potential out of priority depletions attributed to evaporation from the additional 4.2 acres of exposed groundwater in the pond. Review of aerial photographs available on the Mesa County website shows that the nine acres proposed for dry-up in this plan for augmentation were initially dried-up in 2009 and have remained in a dried-up condition since that time. Therefore, daily diversion records for the period 1972 through 2008 were used to assess the diversion amounts allocated to the Applicants in accordance with their 20.5 shares in the Larkin Irrigation Company.

The Applicants' share of water diverted through Larkin Ditch was historically used to irrigate 64.2 acres of land on the Applicants' property. Six of the 64.2 acres were dried-up in accordance with the decree entered in Case No. 05CW076. The proposed nine-acre dry-up area and the six-acre dry-up area identified in the decree entered in Case No. 05CW076 are shown in Figure 3. Total diversions through the Larkin Ditch headgate for the period 1972 through 2008 are shown in Table 2. Table 3 presents the Applicants' share of the total diversions based on their ownership of 20.5 of the 90 shares issued and outstanding in the Larkin Irrigation Company. Delivery of diversions to the Applicants' property, assuming a 10 percent ditch conveyance loss, is presented in Table 4. The amount of irrigation water delivered to the property and available for consumptive use on a per acre basis, assuming an irrigation efficiency of 45 percent, is shown in Table 5.

B. Irrigation Water Requirements: DWR's StateCU software was used to estimate the irrigation water requirements per acre for pasture grass at the Applicant's property. The resulting irrigation water requirements for the period are presented in Table 6. The diversions available for consumptive use per acre presented in Table 5 and irrigation water requirements per acre presented in Table 6 were used to generate the historical consumptive use values per acre shown in Table 7.

C. Calling Period to Augment: The primary calling structures downstream of the Pit are the Grand Valley Canal and Grand Valley Project (referred to as the "Cameo Call").

Based on discussions with a representative of the Division Engineer' Office of Water Division 5, the call period for the Cameo Call includes three weeks in April, one week in May, and the last 2 weeks in June through October. A monthly water balance utilizing historical irrigation credits to offset potential out-of-priority depletions attributed to evaporation from 4.2 acres of exposed groundwater in the existing pit pond is presented in Table 8. As shown, the historical irrigation credits will fully offset potential out-of-priority depletions.

D. Historical Irrigation Return Flows: Historical irrigation return flows must be maintained to support the use of historical irrigation credits for augmentation. Historical return flows include both surface and deep percolation. The surface irrigation return is estimated to be 80 percent of the irrigation return and instantaneous return to the river is assumed. Deep percolation is assumed to account for 20 percent of the irrigation return, and the timing of accretion to the Colorado River from deep percolation was estimated using the Well Pumping Depletion Model (©2001, Western Water Consulting, Inc.). The resulting irrigation return flow analysis is summarized in Table 9. As shown, historical irrigation return flow during the call period are maintained by accretions to the river resulting from historical diversions left in the river.

E. Amounts Needed for Augmentation: The nine-acre dry-up area represents 14 percent of the 64.2 acres historically irrigated at the Applicants' property. Accordingly, 14 percent of future irrigation diversions to the Applicants' property will be dedicated for augmentation use. The amounts needed for augmentation will be 0.80 cfs of the Senior Larkin Right and 0.40 cfs of the Junior Larkin Right for a total of 1.20 cfs under both rights, or 2.86 of the Applicants' shares in the Larkin Irrigation Company. Therefore, an additional three of the Applicants' Larkin Irrigation Company shares will be dedicated for use under this plan for augmentation.

F. Change Requested: The Applicants request that the water rights represented by the additional three shares of the Applicants' Larkin Irrigation Company shares be changed to allow for evaporation from 4.2 acres of the exposed groundwater in the existing pit pond by augmentation and replacement, in addition to irrigation uses.

G. Operation of the Plan for Augmentation: During times of a valid downstream call during the call period, 14 percent of Applicants' share of Larkin Ditch diversions will be administered in accordance with this plan for augmentation. To meet the obligation to augment with a total of 1.2 cfs under full-supply conditions, 1.08 cfs of the combined Senior and Junior Larkin Rights, assuming 10 percent ditch carriage loss, will not be delivered for use on the Applicants' property but will be diverted back to the Colorado River at or near the Larkin Ditch headgate. The remaining 0.12 cfs will be left in the Larkin Ditch to make up for carriage losses.

16. The above underground water right, plan for augmentation, and change of water rights will not injuriously affect the owner of or persons entitled to use water under a vested water right or a decreed conditional water right.

17. The Applicants should be awarded the relief requested in the Application.

CONCLUSIONS OF LAW

18. To the extent they constitute legal conclusions, the foregoing Findings of Fact are incorporated herein.

19. The Application herein is one contemplated by law, and this Court has jurisdiction over the subject matter of this proceeding.

20. Timely and adequate notice of the filing and of the contents of the Application was given as required by law, and this Court has jurisdiction over all persons or entities affected hereby, whether they have appeared or not.

21. The Application is complete, covering all applicable matters required pursuant to the Water Right Determination and Administration Act of 1969. C.R.S. §§ 37-92-101-602.

19. The Applicants have initiated a valid appropriation of the underground water right for which application has been made herein, as of the date claimed in the Application. Water is available for appropriation under this priority.

20. The water which collects in the DeBeque Gravel Pit, First Enlargement also referred to herein as the Pond, is not in storage, as defined in C.R.S. § 37-92-103(10.5) and in the administration of the water right granted pursuant to this Application, statutes and other law relating to the storage of water, including without limitation C.R.S. § 37-92-502(3) shall not be applicable.

21. The plan for augmentation described above meets the statutory criteria for a plan for augmentation as set forth in C.R.S. §§ 37 92-103(9), -302(1), and -305(8) and other applicable statutes, and is one contemplated by law. If the plan for augmentation is operated and administered in accordance with the conditions hereof, such plan will not cause material injury to any owner of or persons entitled to use water under a vested water right or decreed conditional water right.

22. The change of water rights described above, meets the statutory criteria for changing water rights, as set forth in C.R.S. §§ 37-92-103(5), -302(1), and -305 and other applicable statutes, and is one contemplated by law. The requested change of water right will not cause material injury to any owner of or persons entitled to use water under a vested water right or decreed conditional water right.

RULING OF THE REFEREE

23. The Findings of Fact and Conclusions of Law as set forth above are incorporated herein by reference and are hereby modified as necessary to constitute part of the Ruling and Judgment and Decree.

24. The application for an underground water right for the DeBeque Gravel Pit, First Enlargement as set forth in the Findings Re: First Claim For Relief, above, is hereby granted. An absolute water right in the amount of 12.64 acre feet per year for evaporation is hereby awarded the DeBeque Gravel Pit, First Enlargement.

25. The application for approval of the plan for augmentation set forth in the Findings Re: Second Claim for Relief, above, is hereby approved. The structure and water right to be augmented, as described in Findings Re: First Claim for Relief, above, may divert, store and use water in accordance with this Ruling of Referee and may be operated in accordance with this Ruling of Referee. Applicants shall have the right to divert water out of priority from and at the DeBeque Gravel Pit, First Enlargement, so long as adequate water is available and provided to augment depletions from such diversions, as set forth in the plan for augmentation described above.

26. The application for approval of change of water rights set forth in the Findings Re: Second Claim for Relief, above, is hereby granted. The water rights represented by the 3.0 shares owned by the Lathams in the Larkin Irrigation Company and dedicated to the plan for augmentation approved herein are hereby changed to permit the additional use of evaporation from the DeBeque Gravel Pit, First Enlargement by augmentation and replacement.

27. The priority date awarded to the water right decreed herein as the DeBeque Gravel Pit, First Enlargement is April 6, 2012. The Application was filed in 2023 and the water right awarded herein to the DeBeque Gravel Pit, First Enlargement shall be administered as having been awarded on an application filed in 2023.

28. The Court shall retain jurisdiction with respect to the approval of the plan for augmentation for five years from the date this Ruling of Referee is confirmed and made the judgment and decree of the Court. In setting forth this period, the Court finds that such period is necessary to assure that no injury shall occur to vested rights of others by the operation of the plan for augmentation.

29. The Applicants shall install measuring devices, provide accounting, and supply calculations regarding the timing of depletions as required by the Division Engineer for the operation of this plan. The Applicants shall also file an annual report with the Division Engineer by November 15 of each year summarizing diversions and replacements made under this plan.

30. The Division Engineer for Water Division No. 5 must approve the Applicant's accounting forms before Applicant's operations approved in this Decree may proceed. The accounting forms may be changed from time to time so long as all information required by the decree in this case is included in the accounting forms. The Division Engineer must approve any changes to the accounting forms.

31. Pursuant to C.R.S. § 37-92-305(8), the State Engineer shall curtail all out-of-priority diversions, the depletions from which are not so replaced as to prevent injury to vested water rights.

32. The assumptions used for evaporative losses in this decree are only for the purposes of establishing that the plan can operate and may be sufficient to prevent injury. The application reduces evaporation during months that are assumed to be ice-covered. However, when there is a valid senior downstream call, Applicant must replace the evaporation depletions that occur from the water surface during the assumed ice-covered period for any time in which the ponds are not completely covered in ice or curtail diversions into the pond during the assumed ice-covered period for any time that the ponds are not completely covered in ice.

33. This Ruling shall be filed with the Water Clerk subject to judicial review. A copy of this Ruling shall be filed with the State Engineer and the Division Engineer for Water Division No. 5.

Dated this 11th day of October, 2023.

BY THE REFEREE:

Holly K. Strablizky, Water Referee

Water Division No. 5, State of Colorado

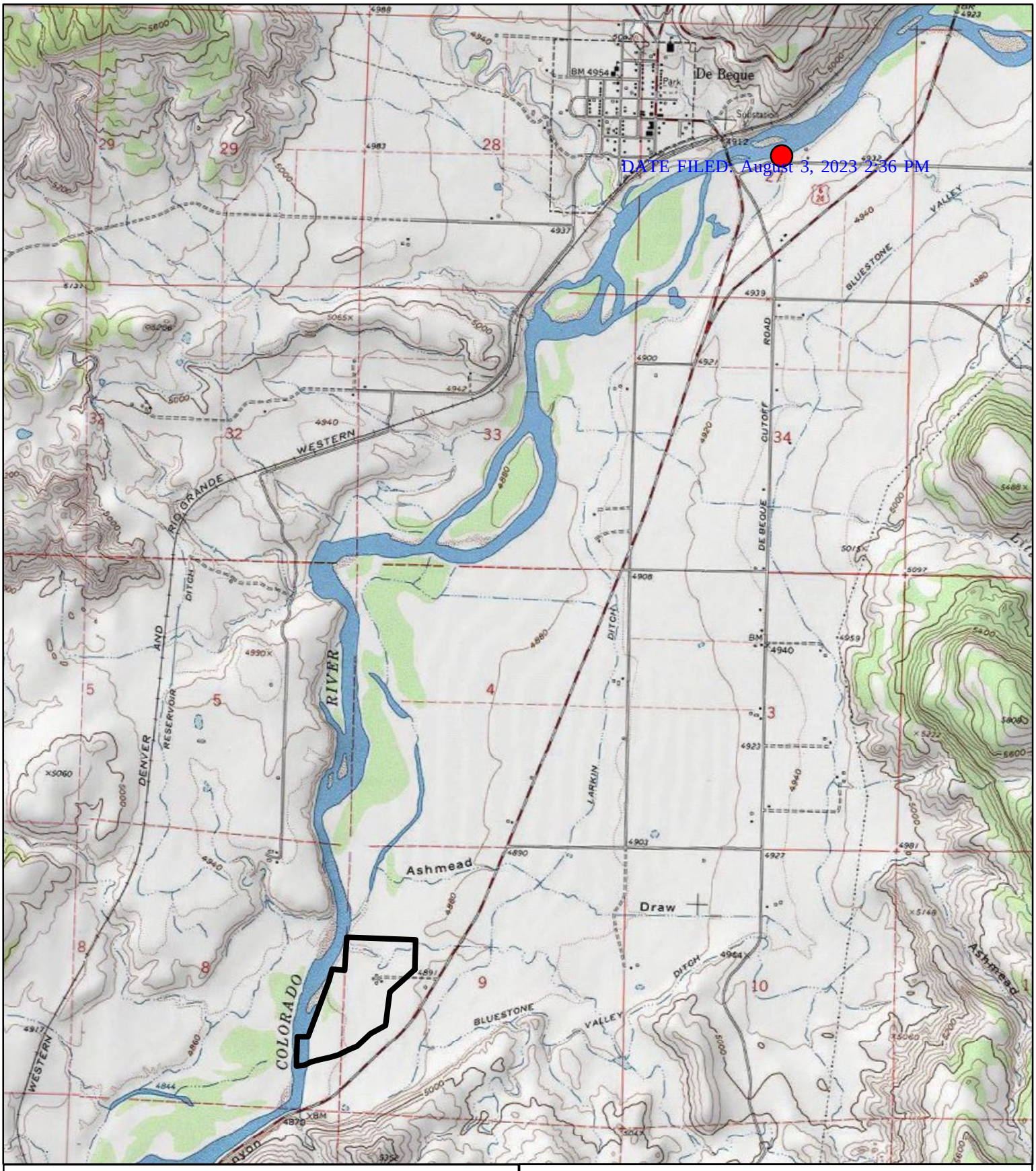
DECREE OF THE WATER COURT

No protest was filed in this matter. The foregoing Ruling is confirmed and approved and is made the Judgment and Decree of this Court.

Dated: 2023.

BY THE COURT:

_____
Honorable Christopher Seldin, Water Judge



Legend

- Property Boundary
- Larkin Ditch Point of Diversion

0 0.25 0.5 1 Miles

N

Figure 1: Applicants' Property & Larkin Ditch Point of Diversion

Mesa County

Merrill Water Rights Consulting, LLC

Legend

Property Boundary

Pit Pond

Sections 8 & 9, T9 S, R97 W, 6th PM

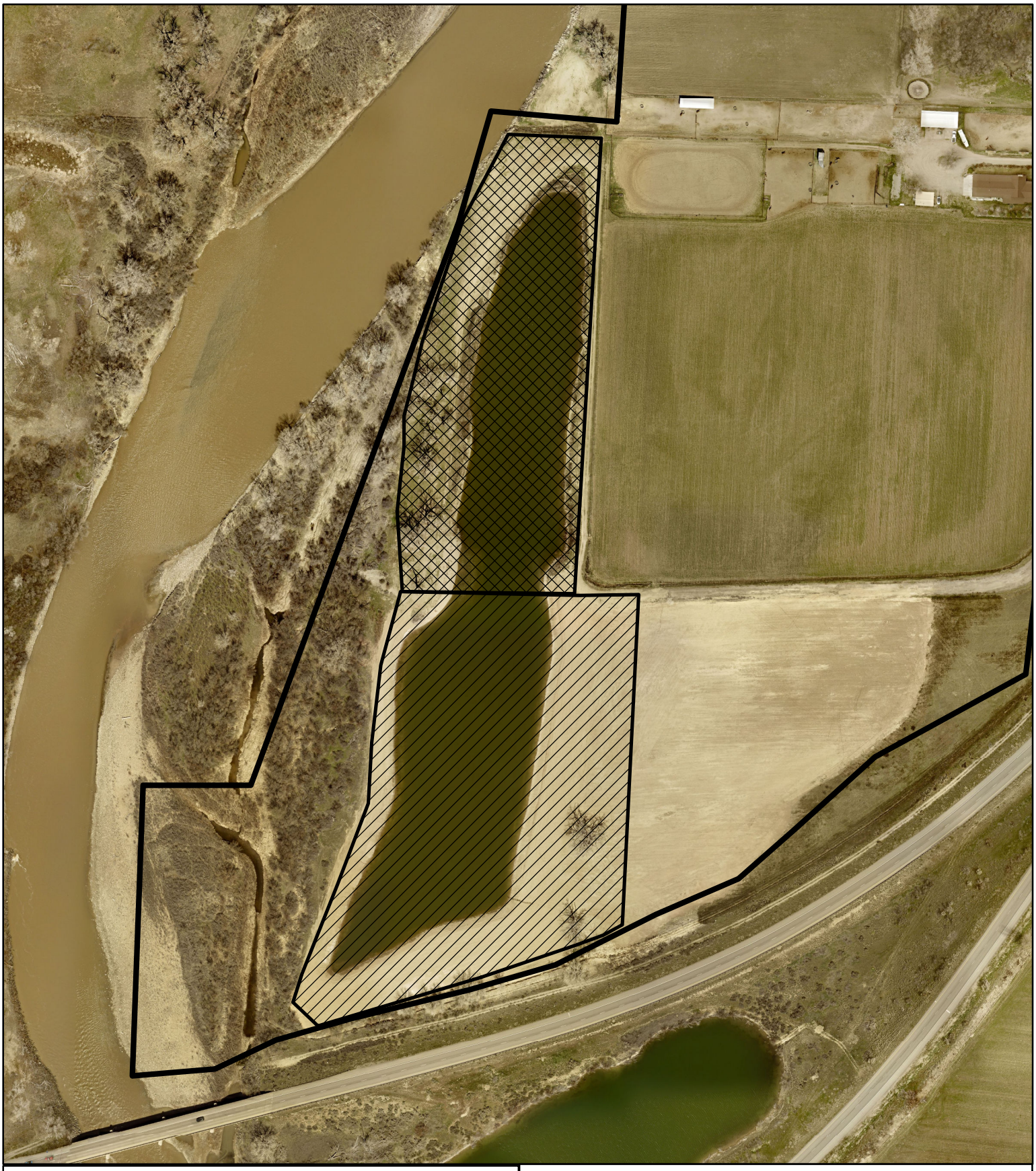
N

0 125 250 500 Feet

Figure 2: Pit Pond - Debeque Gravel Pit

Mesa County

Merrill Water Rights Consulting, LLC



Legend

Sections 8 & 9, T9 S, R97 W, 6th PM

- Property Boundary
- 6-Acre Dry-up Area (Case No. 05CW076)
- Proposed 9-Acre Dry-up Area

N

0 125 250 500 Feet

Figure 3: Dry-up Area

Mesa County

Merrill Water Rights Consulting, LLC

Table 1: Lake Evaporation
Debeque Gravel Pit

Month	Monthly Distribution (%) (1)	Gross Evaporation (inches) (2)	Precipitation (inches) (3)	Effective Precipitation (inches) (4)	Net Evaporation (inches) (5)	Net Evaporation (acre-feet/acre) (6)	Net Evap 4.2 acres (acre-feet) (7)	Lagged Net Evap 4.2 acres (acre-feet) (8)
January	3.0%	1.35	0.54	0.38	0.97	0.08	0.00	0.16
February	3.5%	1.58	0.57	0.40	1.18	0.10	0.42	0.32
March	5.5%	2.48	0.82	0.57	1.91	0.16	0.67	0.53
April	9.0%	4.05	1.01	0.71	3.34	0.28	1.18	0.90
May	12.0%	5.40	0.95	0.67	4.73	0.39	1.64	1.31
June	14.5%	6.53	0.57	0.40	6.13	0.51	2.14	1.77
July	15.0%	6.75	0.72	0.50	6.25	0.52	2.18	1.99
August	13.5%	6.08	0.98	0.69	5.39	0.45	1.89	1.92
September	10.0%	4.50	1.21	0.85	3.65	0.30	1.26	1.53
October	7.0%	3.15	1.19	0.83	2.32	0.19	0.80	1.11
November	4.0%	1.80	0.76	0.53	1.27	0.11	0.46	0.75
December	3.0%	1.35	0.58	0.41	0.94	0.08	0.00	0.34
Annual Total	1.00	45.00	9.90	6.94	38.06	3.17	12.64	12.64

(1) From General Guidelines for Substitute Water Supply Plans for Sand & Gravel Pits Submitted to the State Engineer Pursuant to SB 89-120 & SB 93-260
(2) Calculated as annual evaporation (45 inches) from DWR's CDSS evaporation contours x monthly distribution
(3) Average monthly precipitation for Palisade, Colorado reported on Western Regional Climate Center website for period 1911 - 2022
(4) Precipitation x 0.70 (General Guidelines for Substitute Water Supply Plans for Sand & Gravel Pits Submitted to the State Engineer Pursuant to SB 89-120 & SB 93-260)
(5) Net Lake Evaporation = Gross Lake Evaporation - Effective Precipitation
(6) Column (5)/12
(7) Column (6) x 4.2 acres of exposed groundwater; evaporation occurs when average monthly temperature is greater than 32 F, based on average monthly temperature for Palisade, Colorado reported on Western Regional Climate Center website for period 1911 - 2022.
(8) Lagged depletions to the Colorado River based on the Well Pumping Depletion Model software (© 2001, Western Water Consulting, Inc.) using the following parameters: Distance pit pond to river = 480 ft; Distance river to no-flow boundary = 2000 ft; Aquifer Transmissivity = 50,880 gpd/ft; Specific yield =0.2

Table 2: Larkin Ditch - Total Irrigation Diversions at Headgate
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	0.00	0.00	0.00	724.97	1445.18	1636.39	961.70	767.81	1156.38	1023.49	1071.09	678.36
1973	0.00	0.00	0.00	485.96	1074.06	1896.03	1788.13	1680.82	1019.52	716.04	0.00	0.00
1974	0.00	0.00	0.00	697.20	1612.59	1315.06	1367.62	942.16	1085.97	1160.35	0.00	0.00
1975	0.00	0.00	0.00	0.00	722.99	1198.03	1708.79	1347.79	1660.19	1404.32	0.00	0.00
1976	0.00	0.00	0.00	0.00	1076.05	1226.80	1011.59	974.89	729.93	767.62	0.00	0.00
1977	0.00	0.00	0.00	690.26	1590.77	1491.59	2065.81	1015.55	493.89	286.62	198.35	0.00
1978	0.00	0.00	0.00	0.00	1244.65	1642.34	1273.41	1177.21	413.56	608.94	609.93	0.00
1979	0.00	0.00	0.00	0.00	809.27	2200.69	1584.82	511.25	147.47	0.00	0.00	0.00
1980	0.00	0.00	0.00	0.00	76.37	1652.26	1274.40	1180.18	794.39	781.50	257.86	0.00
1981	0.00	0.00	0.00	0.00	174.55	1088.94	1266.46	1135.55	1071.09	826.13	119.01	0.00
1982	0.00	0.00	0.00	243.97	713.07	804.31	338.19	338.19	1081.01	793.40	16.86	0.00
1983	0.00	0.00	0.00	0.00	357.03	823.15	1066.73	605.96	669.43	646.22	59.51	0.00
1984	0.00	0.00	0.00	0.00	339.44	358.80	1010.20	877.70	738.85	258.85	0.00	0.00
1985	0.00	0.00	0.00	317.36	1064.54	2405.99	1679.43	1005.64	297.53	221.76	0.00	0.00
1986	0.00	0.00	0.00	0.00	298.52	1182.56	1201.21	654.56	411.58	217.19	583.15	0.00
1987	0.00	0.00	0.00	218.19	1261.51	1704.82	1247.62	607.94	409.20	426.45	138.85	0.00
1988	0.00	0.00	0.00	634.72	1792.09	1652.45	423.70	1340.85	172.57	61.49	138.85	0.00
1989	0.00	0.00	0.00	436.37	731.46	1124.65	506.78	434.98	310.22	245.95	150.75	0.00
1990	0.00	0.00	76.37	690.26	1594.54	1465.81	481.99	460.97	1259.60	874.72	638.69	0.00
1991	0.00	0.00	0.00	1200.02	1596.72	1659.20	274.72	0.00	0.00	0.00	0.00	0.00
1992	0.00	0.00	0.00	420.70	1312.88	794.39	354.06	503.81	482.98	307.44	0.00	0.00
1993	0.00	0.00	0.00	0.00	1019.52	2540.86	2094.58	672.41	1166.30	499.84	0.00	0.00
1994	0.00	0.00	0.00	416.54	717.83	1038.56	1121.87	545.26	639.08	707.12	0.00	0.00
1995	0.00	0.00	0.00	583.15	775.15	722.55	926.53	1210.93	550.68	488.46	0.00	0.00
1996	0.00	0.00	0.00	1131.39	1508.25	1131.59	868.42	682.09	595.05	614.89	0.00	0.00
1997	0.00	0.00	0.00	1102.83	1295.23	1307.92	819.98	1239.69	297.53	743.81	0.00	0.00
1998	0.00	0.00	0.00	892.58	1152.61	1607.43	1230.56	814.43	595.05	783.48	0.00	0.00
1999	0.00	0.00	0.00	684.70	1172.65	1539.93	1544.95	1471.72	1250.99	1016.94	0.00	0.00
2000	0.00	0.00	0.00	662.89	1054.43	1731.36	1678.44	1375.88	998.73	720.21	0.00	0.00
2001	0.00	0.00	0.00	594.90	1047.42	1278.64	1377.79	1176.71	954.76	828.99	0.00	0.00
2002	0.00	0.00	0.00	456.09	436.26	347.03	594.90	594.90	575.07	614.73	0.00	0.00
2003	0.00	0.00	0.00	743.23	819.57	706.54	1129.52	454.90	546.32	586.97	0.00	0.00
2004	0.00	0.00	0.00	699.60	1134.28	814.62	678.98	582.41	565.16	586.97	0.00	0.00
2005	0.00	0.00	0.00	714.67	1185.04	1189.80	782.49	685.92	594.90	614.73	0.00	0.00
2006	0.00	0.00	0.00	0.00	457.76	473.54	489.33	489.33	473.54	0.00	0.00	0.00
2007	0.00	0.00	0.00	87.25	259.97	660.34	307.37	148.73	107.08	0.00	0.00	0.00
2008	0.00	0.00	0.00	297.45	297.45	287.54	297.45	307.37	575.07	614.73	0.00	0.00
Mean	0.00	0.00	2.06	427.76	951.94	1262.23	1049.47	811.26	672.72	568.93	107.65	18.33

All values in acre-feet

Table 3: Larkin Ditch - Applicants' Share of Irrigation Diversions at Headgate
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	0.00	0.00	0.00	165.13	329.18	372.73	219.05	174.89	263.40	233.13	243.97	154.51
1973	0.00	0.00	0.00	110.69	244.65	431.87	407.30	382.85	232.22	163.10	0.00	0.00
1974	0.00	0.00	0.00	158.81	367.31	299.54	311.51	214.60	247.36	264.30	0.00	0.00
1975	0.00	0.00	0.00	0.00	164.68	272.88	389.22	307.00	378.15	319.87	0.00	0.00
1976	0.00	0.00	0.00	0.00	245.10	279.44	230.42	222.06	166.26	174.85	0.00	0.00
1977	0.00	0.00	0.00	157.23	362.34	339.75	470.55	231.32	112.50	65.28	45.18	0.00
1978	0.00	0.00	0.00	0.00	283.50	374.09	290.05	268.14	94.20	138.70	138.93	0.00
1979	0.00	0.00	0.00	0.00	184.33	501.27	360.99	116.45	33.59	0.00	0.00	0.00
1980	0.00	0.00	0.00	0.00	17.39	376.35	290.28	268.82	180.94	178.01	58.73	0.00
1981	0.00	0.00	0.00	0.00	39.76	248.04	288.47	258.65	243.97	188.17	27.11	0.00
1982	0.00	0.00	0.00	55.57	162.42	183.20	77.03	77.03	246.23	180.72	3.84	0.00
1983	0.00	0.00	0.00	0.00	81.32	187.50	242.98	138.02	152.48	147.20	13.55	0.00
1984	0.00	0.00	0.00	0.00	77.32	81.73	230.10	199.92	168.29	58.96	0.00	0.00
1985	0.00	0.00	0.00	72.29	242.48	548.03	382.54	229.06	67.77	50.51	0.00	0.00
1986	0.00	0.00	0.00	0.00	68.00	269.36	273.61	149.09	93.75	49.47	132.83	0.00
1987	0.00	0.00	0.00	49.70	287.34	388.32	284.18	138.48	93.21	97.14	31.63	0.00
1988	0.00	0.00	0.00	144.58	408.20	376.39	96.51	305.42	39.31	14.01	31.63	0.00
1989	0.00	0.00	0.00	99.40	166.61	256.17	115.43	99.08	70.66	56.02	34.34	0.00
1990	0.00	0.00	17.39	157.23	363.20	333.88	109.79	105.00	286.91	199.24	145.48	0.00
1991	0.00	0.00	0.00	273.34	363.70	377.93	62.57	0.00	0.00	0.00	0.00	0.00
1992	0.00	0.00	0.00	95.83	299.04	180.94	80.65	114.76	110.01	70.03	0.00	0.00
1993	0.00	0.00	0.00	0.00	232.22	578.75	477.10	153.16	265.66	113.85	0.00	0.00
1994	0.00	0.00	0.00	94.88	163.51	236.56	255.54	124.20	145.57	161.07	0.00	0.00
1995	0.00	0.00	0.00	132.83	176.56	164.58	211.04	275.82	125.43	111.26	0.00	0.00
1996	0.00	0.00	0.00	257.71	343.55	257.75	197.81	155.36	135.54	140.06	0.00	0.00
1997	0.00	0.00	0.00	251.20	295.02	297.92	186.77	282.37	67.77	169.42	0.00	0.00
1998	0.00	0.00	0.00	203.31	262.54	366.14	280.29	185.51	135.54	178.46	0.00	0.00
1999	0.00	0.00	0.00	155.96	267.10	350.76	351.91	335.23	284.95	231.64	0.00	0.00
2000	0.00	0.00	0.00	150.99	240.18	394.37	382.31	313.39	227.49	164.05	0.00	0.00
2001	0.00	0.00	0.00	135.51	238.58	291.25	313.83	268.03	217.47	188.83	0.00	0.00
2002	0.00	0.00	0.00	103.89	99.37	79.04	135.51	135.51	130.99	140.02	0.00	0.00
2003	0.00	0.00	0.00	169.29	186.68	160.93	257.28	103.62	124.44	133.70	0.00	0.00
2004	0.00	0.00	0.00	159.35	258.36	185.55	154.66	132.66	128.73	133.70	0.00	0.00
2005	0.00	0.00	0.00	162.79	269.93	271.01	178.23	156.24	135.51	140.02	0.00	0.00
2006	0.00	0.00	0.00	0.00	104.27	107.86	111.46	111.46	107.86	0.00	0.00	0.00
2007	0.00	0.00	0.00	19.87	59.22	150.41	70.01	33.88	24.39	0.00	0.00	0.00
2008	0.00	0.00	0.00	67.75	67.75	65.49	67.75	70.01	130.99	140.02	0.00	0.00
Mean	0.00	0.00	0.47	97.43	216.83	287.51	239.05	184.79	153.23	129.59	24.52	4.18

All values in acre-feet

Table 4: Larkin Ditch - Applicants' Irrigation Diversions Delivered to Field
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	0.00	0.00	0.00	148.62	296.26	335.46	197.15	157.40	237.06	209.82	219.57	139.06
1973	0.00	0.00	0.00	99.62	220.18	388.69	366.57	344.57	209.00	146.79	0.00	0.00
1974	0.00	0.00	0.00	142.93	330.58	269.59	280.36	193.14	222.62	237.87	0.00	0.00
1975	0.00	0.00	0.00	0.00	148.21	245.60	350.30	276.30	340.34	287.89	0.00	0.00
1976	0.00	0.00	0.00	0.00	220.59	251.49	207.38	199.85	149.64	157.36	0.00	0.00
1977	0.00	0.00	0.00	141.50	326.11	305.78	423.49	208.19	101.25	58.76	40.66	0.00
1978	0.00	0.00	0.00	0.00	255.15	336.68	261.05	241.33	84.78	124.83	125.03	0.00
1979	0.00	0.00	0.00	0.00	165.90	451.14	324.89	104.81	30.23	0.00	0.00	0.00
1980	0.00	0.00	0.00	0.00	15.65	338.71	261.25	241.94	162.85	160.21	52.86	0.00
1981	0.00	0.00	0.00	0.00	35.78	223.23	259.62	232.79	219.57	169.36	24.40	0.00
1982	0.00	0.00	0.00	50.01	146.18	164.88	69.33	69.33	221.61	162.65	3.46	0.00
1983	0.00	0.00	0.00	0.00	73.19	168.75	218.68	124.22	137.23	132.48	12.20	0.00
1984	0.00	0.00	0.00	0.00	69.58	73.55	207.09	179.93	151.47	53.06	0.00	0.00
1985	0.00	0.00	0.00	65.06	218.23	493.23	344.28	206.16	60.99	45.46	0.00	0.00
1986	0.00	0.00	0.00	0.00	61.20	242.42	246.25	134.18	84.37	44.52	119.55	0.00
1987	0.00	0.00	0.00	44.73	258.61	349.49	255.76	124.63	83.89	87.42	28.46	0.00
1988	0.00	0.00	0.00	130.12	367.38	338.75	86.86	274.87	35.38	12.61	28.46	0.00
1989	0.00	0.00	0.00	89.46	149.95	230.55	103.89	89.17	63.59	50.42	30.90	0.00
1990	0.00	0.00	15.65	141.50	326.88	300.49	98.81	94.50	258.22	179.32	130.93	0.00
1991	0.00	0.00	0.00	246.00	327.33	340.14	56.32	0.00	0.00	0.00	0.00	0.00
1992	0.00	0.00	0.00	86.24	269.14	162.85	72.58	103.28	99.01	63.03	0.00	0.00
1993	0.00	0.00	0.00	0.00	209.00	520.88	429.39	137.84	239.09	102.47	0.00	0.00
1994	0.00	0.00	0.00	85.39	147.15	212.90	229.98	111.78	131.01	144.96	0.00	0.00
1995	0.00	0.00	0.00	119.55	158.91	148.12	189.94	248.24	112.89	100.13	0.00	0.00
1996	0.00	0.00	0.00	231.93	309.19	231.98	178.03	139.83	121.99	126.05	0.00	0.00
1997	0.00	0.00	0.00	226.08	265.52	268.12	168.10	254.14	60.99	152.48	0.00	0.00
1998	0.00	0.00	0.00	182.98	236.29	329.52	252.26	166.96	121.99	160.61	0.00	0.00
1999	0.00	0.00	0.00	140.36	240.39	315.69	316.71	301.70	256.45	208.47	0.00	0.00
2000	0.00	0.00	0.00	135.89	216.16	354.93	344.08	282.06	204.74	147.64	0.00	0.00
2001	0.00	0.00	0.00	121.95	214.72	262.12	282.45	241.23	195.72	169.94	0.00	0.00
2002	0.00	0.00	0.00	93.50	89.43	71.14	121.95	121.95	117.89	126.02	0.00	0.00
2003	0.00	0.00	0.00	152.36	168.01	144.84	231.55	93.25	111.99	120.33	0.00	0.00
2004	0.00	0.00	0.00	143.42	232.53	167.00	139.19	119.39	115.86	120.33	0.00	0.00
2005	0.00	0.00	0.00	146.51	242.93	243.91	160.41	140.61	121.95	126.02	0.00	0.00
2006	0.00	0.00	0.00	0.00	93.84	97.08	100.31	100.31	97.08	0.00	0.00	0.00
2007	0.00	0.00	0.00	17.89	53.29	135.37	63.01	30.49	21.95	0.00	0.00	0.00
2008	0.00	0.00	0.00	60.98	60.98	58.94	60.98	63.01	117.89	126.02	0.00	0.00
Mean	0.00	0.00	0.42	87.69	195.15	258.76	215.14	166.31	137.91	116.63	22.07	3.76

All values in acre-feet

Assumes 10% carriage loss for Larkin Ditch

Table 5: Larkin Ditch - Applicants' Irrigation Diversions Delivered to Field and Available for Consumptive Use Per Acre
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	0.00	0.00	0.00	1.04	2.08	2.35	1.38	1.10	1.66	1.47	1.54	0.97
1973	0.00	0.00	0.00	0.70	1.54	2.72	2.57	2.42	1.46	1.03	0.00	0.00
1974	0.00	0.00	0.00	1.00	2.32	1.89	1.97	1.35	1.56	1.67	0.00	0.00
1975	0.00	0.00	0.00	0.00	1.04	1.72	2.46	1.94	2.39	2.02	0.00	0.00
1976	0.00	0.00	0.00	0.00	1.55	1.76	1.45	1.40	1.05	1.10	0.00	0.00
1977	0.00	0.00	0.00	0.99	2.29	2.14	2.97	1.46	0.71	0.41	0.29	0.00
1978	0.00	0.00	0.00	0.00	1.79	2.36	1.83	1.69	0.59	0.87	0.88	0.00
1979	0.00	0.00	0.00	0.00	1.16	3.16	2.28	0.73	0.21	0.00	0.00	0.00
1980	0.00	0.00	0.00	0.00	0.11	2.37	1.83	1.70	1.14	1.12	0.37	0.00
1981	0.00	0.00	0.00	0.00	0.25	1.56	1.82	1.63	1.54	1.19	0.17	0.00
1982	0.00	0.00	0.00	0.35	1.02	1.16	0.49	0.49	1.55	1.14	0.02	0.00
1983	0.00	0.00	0.00	0.00	0.51	1.18	1.53	0.87	0.96	0.93	0.09	0.00
1984	0.00	0.00	0.00	0.00	0.49	0.52	1.45	1.26	1.06	0.37	0.00	0.00
1985	0.00	0.00	0.00	0.46	1.53	3.46	2.41	1.45	0.43	0.32	0.00	0.00
1986	0.00	0.00	0.00	0.00	0.43	1.70	1.73	0.94	0.59	0.31	0.84	0.00
1987	0.00	0.00	0.00	0.31	1.81	2.45	1.79	0.87	0.59	0.61	0.20	0.00
1988	0.00	0.00	0.00	0.91	2.58	2.37	0.61	1.93	0.25	0.09	0.20	0.00
1989	0.00	0.00	0.00	0.63	1.05	1.62	0.73	0.63	0.45	0.35	0.22	0.00
1990	0.00	0.00	0.11	0.99	2.29	2.11	0.69	0.66	1.81	1.26	0.92	0.00
1991	0.00	0.00	0.00	1.72	2.29	2.38	0.39	0.00	0.00	0.00	0.00	0.00
1992	0.00	0.00	0.00	0.60	1.89	1.14	0.51	0.72	0.69	0.44	0.00	0.00
1993	0.00	0.00	0.00	0.00	1.46	3.65	3.01	0.97	1.68	0.72	0.00	0.00
1994	0.00	0.00	0.00	0.60	1.03	1.49	1.61	0.78	0.92	1.02	0.00	0.00
1995	0.00	0.00	0.00	0.84	1.11	1.04	1.33	1.74	0.79	0.70	0.00	0.00
1996	0.00	0.00	0.00	1.63	2.17	1.63	1.25	0.98	0.86	0.88	0.00	0.00
1997	0.00	0.00	0.00	1.58	1.86	1.88	1.18	1.78	0.43	1.07	0.00	0.00
1998	0.00	0.00	0.00	1.28	1.66	2.31	1.77	1.17	0.86	1.13	0.00	0.00
1999	0.00	0.00	0.00	0.98	1.68	2.21	2.22	2.11	1.80	1.46	0.00	0.00
2000	0.00	0.00	0.00	0.95	1.52	2.49	2.41	1.98	1.44	1.03	0.00	0.00
2001	0.00	0.00	0.00	0.85	1.51	1.84	1.98	1.69	1.37	1.19	0.00	0.00
2002	0.00	0.00	0.00	0.66	0.63	0.50	0.85	0.85	0.83	0.88	0.00	0.00
2003	0.00	0.00	0.00	1.07	1.18	1.02	1.62	0.65	0.79	0.84	0.00	0.00
2004	0.00	0.00	0.00	1.01	1.63	1.17	0.98	0.84	0.81	0.84	0.00	0.00
2005	0.00	0.00	0.00	1.03	1.70	1.71	1.12	0.99	0.85	0.88	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.66	0.68	0.70	0.70	0.68	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.13	0.37	0.95	0.44	0.21	0.15	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.43	0.43	0.41	0.43	0.44	0.83	0.88	0.00	0.00
Mean	0.00	0.00	0.00	0.61	1.37	1.81	1.51	1.17	0.97	0.82	0.15	0.03

All values in acre-feet

Assumes furrow irrigation (45% irrigation efficiency)

Table 6: Irrigation Water Requirements for Pasture Grass Per Acre
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	---	---	---	---	---	---	---	---	---	---	---	---
1973	---	---	---	---	---	---	---	---	---	---	---	---
1974	0.00	0.00	0.07	0.12	0.47	0.64	0.66	0.60	0.33	0.16	0.01	0.00
1975	0.00	0.00	0.00	0.06	0.22	0.45	0.63	0.61	0.39	0.15	0.02	0.00
1976	0.00	0.00	0.03	0.20	0.33	0.51	0.65	0.58	0.37	0.16	0.04	0.00
1977	0.00	0.00	0.04	0.25	0.34	0.71	0.71	0.63	0.37	0.21	0.03	0.00
1978	0.00	0.00	0.07	0.18	0.33	0.65	0.74	0.59	0.35	0.25	0.04	0.00
1979	0.00	0.00	0.03	0.23	0.28	0.54	0.72	0.60	0.48	0.20	0.01	0.00
1980	0.00	0.00	0.01	0.22	0.26	0.65	0.71	0.59	0.40	0.11	0.03	0.00
1981	0.00	0.00	0.05	0.24	0.30	0.52	0.70	0.61	0.41	0.08	0.04	0.00
1982	---	---	---	---	---	---	---	---	---	---	---	---
1983	0.00	0.00	0.01	0.10	0.18	0.35	0.64	0.62	0.39	0.19	0.00	0.00
1984	0.00	0.00	0.01	0.08	0.43	0.44	0.72	0.57	0.39	0.00	0.01	0.00
1985	0.00	0.00	0.05	0.15	0.39	0.59	0.63	0.69	0.23	0.07	0.01	0.00
1986	0.00	0.02	0.13	0.17	0.30	0.58	0.64	0.61	0.19	0.16	0.00	0.00
1987	0.00	0.00	0.02	0.24	0.30	0.64	0.66	0.50	0.41	0.20	0.00	0.00
1988	0.00	0.00	0.04	0.17	0.33	0.69	0.75	0.57	0.31	0.25	0.02	0.00
1989	0.00	0.00	0.11	0.27	0.43	0.55	0.71	0.46	0.39	0.16	0.03	0.00
1990	0.00	0.00	0.06	0.21	0.40	0.63	0.67	0.62	0.40	0.13	0.01	0.00
1991	---	---	---	---	---	---	---	---	---	---	---	---
1992	---	---	---	---	---	---	---	---	---	---	---	---
1993	0.00	0.00	0.04	0.13	0.28	0.53	0.67	0.46	0.34	0.08	0.00	0.00
1994	0.00	0.00	0.10	0.14	0.44	0.66	0.76	0.56	0.33	0.14	0.00	0.00
1995	0.00	0.01	0.04	0.14	0.16	0.42	0.57	0.60	0.31	0.15	0.05	0.00
1996	0.00	0.00	0.07	0.17	0.39	0.58	0.71	0.65	0.24	0.08	0.01	0.00
1997	0.00	0.00	0.08	0.05	0.29	0.55	0.63	0.46	0.19	0.10	0.01	0.00
1998	0.00	0.00	0.01	0.12	0.39	0.45	0.66	0.63	0.39	0.11	0.02	0.00
1999	0.00	0.00	0.00	0.02	0.32	0.51	0.61	0.43	0.31	0.22	0.06	0.00
2000	0.00	0.00	0.05	0.27	0.44	0.58	0.74	0.58	0.33	0.15	0.00	0.00
2001	0.00	0.00	0.07	0.20	0.38	0.62	0.66	0.55	0.37	0.17	0.04	0.00
2002	---	---	---	---	---	---	---	---	---	---	---	---
2003	0.00	0.00	0.07	0.23	0.34	0.59	0.85	0.64	0.29	0.23	0.02	0.00
2004	0.00	0.00	0.17	0.08	0.44	0.62	0.73	0.58	0.19	0.15	0.00	0.00
2005	0.00	0.00	0.03	0.20	0.41	0.37	0.76	0.49	0.28	0.09	0.05	0.00
2006	---	---	---	---	---	---	---	---	---	---	---	---
2007	0.00	0.00	0.12	0.20	0.38	0.62	0.71	0.61	0.27	0.11	0.05	0.00
2008	0.00	0.00	0.03	0.13	0.29	0.54	0.71	0.59	0.37	0.19	0.03	0.00
Mean	0.00	0.00	0.05	0.17	0.34	0.56	0.69	0.58	0.33	0.15	0.02	0.00

All values in acre-feet

Table 7: Historical Consumptive Use Per Acre
Debeque Gravel Pit

Year	January	February	March	April	May	June	July	August	September	October	November	December
1972	---	---	---	---	---	---	---	---	---	---	---	---
1973	---	---	---	---	---	---	---	---	---	---	---	---
1974	0.00	0.00	0.00	0.12	0.47	0.64	0.66	0.60	0.33	0.16	0.00	0.00
1975	0.00	0.00	0.00	0.00	0.22	0.45	0.63	0.61	0.39	0.15	0.00	0.00
1976	0.00	0.00	0.00	0.00	0.33	0.51	0.65	0.58	0.37	0.16	0.00	0.00
1977	0.00	0.00	0.00	0.25	0.34	0.71	0.71	0.63	0.37	0.21	0.03	0.00
1978	0.00	0.00	0.00	0.00	0.33	0.65	0.74	0.59	0.35	0.25	0.04	0.00
1979	0.00	0.00	0.00	0.00	0.28	0.54	0.72	0.60	0.21	0.00	0.00	0.00
1980	0.00	0.00	0.00	0.00	0.11	0.65	0.71	0.59	0.40	0.11	0.03	0.00
1981	0.00	0.00	0.00	0.00	0.25	0.52	0.70	0.61	0.41	0.08	0.04	0.00
1982	---	---	---	---	---	---	---	---	---	---	---	---
1983	0.00	0.00	0.00	0.00	0.18	0.35	0.64	0.62	0.39	0.19	0.00	0.00
1984	0.00	0.00	0.00	0.00	0.43	0.44	0.72	0.57	0.39	0.00	0.00	0.00
1985	0.00	0.00	0.00	0.15	0.39	0.59	0.63	0.69	0.23	0.07	0.00	0.00
1986	0.00	0.00	0.00	0.00	0.30	0.58	0.64	0.61	0.19	0.16	0.00	0.00
1987	0.00	0.00	0.00	0.24	0.30	0.64	0.66	0.50	0.41	0.20	0.00	0.00
1988	0.00	0.00	0.00	0.17	0.33	0.69	0.61	0.57	0.25	0.09	0.02	0.00
1989	0.00	0.00	0.00	0.27	0.43	0.55	0.71	0.46	0.39	0.16	0.03	0.00
1990	0.00	0.00	0.06	0.21	0.40	0.63	0.67	0.62	0.40	0.13	0.01	0.00
1991	---	---	---	---	---	---	---	---	---	---	---	---
1992	---	---	---	---	---	---	---	---	---	---	---	---
1993	0.00	0.00	0.00	0.00	0.28	0.53	0.67	0.46	0.34	0.08	0.00	0.00
1994	0.00	0.00	0.00	0.14	0.44	0.66	0.76	0.56	0.33	0.14	0.00	0.00
1995	0.00	0.00	0.00	0.14	0.16	0.42	0.57	0.60	0.31	0.15	0.00	0.00
1996	0.00	0.00	0.00	0.17	0.39	0.58	0.71	0.65	0.24	0.08	0.00	0.00
1997	0.00	0.00	0.00	0.05	0.29	0.55	0.63	0.46	0.19	0.10	0.00	0.00
1998	0.00	0.00	0.00	0.12	0.39	0.45	0.66	0.63	0.39	0.11	0.00	0.00
1999	0.00	0.00	0.00	0.02	0.32	0.51	0.61	0.43	0.31	0.22	0.00	0.00
2000	0.00	0.00	0.00	0.27	0.44	0.58	0.74	0.58	0.33	0.15	0.00	0.00
2001	0.00	0.00	0.00	0.20	0.38	0.62	0.66	0.55	0.37	0.17	0.00	0.00
2002	---	---	---	---	---	---	---	---	---	---	---	---
2003	0.00	0.00	0.00	0.23	0.34	0.59	0.85	0.64	0.29	0.23	0.00	0.00
2004	0.00	0.00	0.00	0.08	0.44	0.62	0.73	0.58	0.19	0.15	0.00	0.00
2005	0.00	0.00	0.00	0.20	0.41	0.37	0.76	0.49	0.28	0.09	0.00	0.00
2006	---	---	---	---	---	---	---	---	---	---	---	---
2007	0.00	0.00	0.00	0.13	0.37	0.62	0.44	0.21	0.15	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.13	0.29	0.41	0.43	0.44	0.37	0.19	0.00	0.00
Mean	0.00	0.00	0.00	0.11	0.33	0.56	0.67	0.56	0.32	0.13	0.01	0.00

All values in acre-feet

Table 8: Water Balance
Debeque Gravel Pit

Month	Lagged Depletions Evaporation from 4.2-acre Pit Pond (1)	Potential Out-of-Priority Depletions (2)	HCU Credits per Acre (3)	HCU Credits per 9-Acre Dryup (4)	Water Balance (5)
January	0.16	---	0.00	0.00	---
February	0.32	---	0.00	0.00	---
March	0.53	---	0.00	0.02	---
April	0.90	0.63	0.11	0.98	0.36
May	1.31	0.30	0.33	3.01	2.71
June	1.77	0.89	0.56	5.00	4.11
July	1.99	1.99	0.67	6.00	4.01
August	1.92	1.92	0.56	5.02	3.10
September	1.53	1.53	0.32	2.87	1.34
October	1.11	1.11	0.13	1.19	0.08
November	0.75	---	0.01	0.06	---
December	0.34	---	0.00	0.00	---
Total	12.64	8.36	2.68	24.15	15.71

All values in acre feet

(1) From Table 1, Column (8)

(2) Potential call period includes three weeks in April, one week in May, and last two weeks in June through October 31.

(3) From Table 7

(4) Column (3) x 9 acres (9-acre dryup)

(5) Column (4) - Column (2); negative value indicates deficit

Table 9: Irrigation Return Flow Analysis
Debeque Gravel Pit

Month	Average Headgate Diversions for Applicants (1)	Average Diversions Delivered to Field for Applicants (2)	Average Diversions Delivered to Field for 9 Acres (3)	Average Historical Consumptive Use per Acre (4)	Average Historical Consumptive Use per 9 Acres (5)	Historical Irrigation Return					Accretions to River Average Historical Diversions Left in River (11)	Net Lagged Irrigation Return Flows (12)
						Average Historical Irrigation Return (6)	Average Surface-Water Return (7)	Average Field Deep-Percolation Return (8)	Timing of Deep-Percolation Return (9)	Timing of Total Historical Return Flow (10)		
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.66	0.66	0.00	0.66
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.35	0.35	0.00	0.35
March	0.47	0.42	0.06	0.00	0.02	0.04	0.03	0.01	0.19	0.22	0.07	0.15
April	97.43	87.69	12.29	0.11	0.98	11.31	9.05	2.26	0.95	10.00	13.66	0.00
May	216.83	195.15	27.36	0.33	3.01	24.35	19.48	4.87	2.61	22.09	30.40	0.00
June	287.51	258.76	36.27	0.56	5.00	31.28	25.02	6.26	4.28	29.30	40.30	0.00
July	239.05	215.14	30.16	0.67	6.00	24.16	19.33	4.83	4.72	24.05	33.51	0.00
August	184.79	166.31	23.31	0.56	5.02	18.30	14.64	3.66	4.29	18.93	25.90	0.00
September	153.23	137.91	19.33	0.32	2.87	16.47	13.18	3.29	3.82	17.00	21.48	0.00
October	129.59	116.63	16.35	0.13	1.19	15.16	12.13	3.03	3.46	15.59	18.17	0.00
November	24.52	22.07	3.09	0.01	0.06	3.03	2.42	0.61	2.35	4.77	3.44	1.33
December	4.18	3.76	0.53	0.00	0.00	0.53	0.42	0.11	1.26	1.68	0.59	1.10
Annual Total	1337.59	1203.83	168.76	2.68	24.15	144.63	115.70	28.93	28.93	144.63	187.51	0.02

All values in acre-feet

(1) From Table 3
(2) From Table 4; Assumes 10% carriage loss for the Larken Ditch
(3) Column (2) x (9/64.2)
(4) From Table 7
(5) Column (4) x 9
(6) Column (3) - Column (5)
(7) Column (6) x 80%
(8) Column (6) x 20%
(9) Delayed accretions to Colorado River based on results of Well Pumping Depletion Model (WPDM) software (© 2001, Western Water Consulting, Inc.) using the following parameters:
Distance pit well to river = 815 ft; Distance river to no-flow boundary = 2000 ft; Aquifer Transmissivity = 50,880 gpd/ft; Specific yield =0.2
(10) Column (7) + Column (9)
(11) Column (1) x (9/64.2)
(12) Column 8 - Column 9; "0" if calculated value less than 0.