WSI Weiland, Inc.
Environmental & Engineering

02/28/2025

Patrick Lennberg
Environmental Protection Specialist
Colorado Division of Reclamation Mining & Safety
1313 Sherman Street, Room 215
Denver, CO 80203

Re: Response to Preliminary Adequacy Review, 112c Construction Materials Amendment Application (AM-1) Kirtright Pit, Permit No. M-1986-123 dated August 14, 2024

Dear Mr. Lennberg,

On behalf of Coulson Excavating Co., Inc. (CEC), please find responses to your comments below in bold italics. In connection with this response letter, CEC also is providing updated copies of the exhibits, a revised page 1 of the 112 Construction Material Application form and a Response to Objectors. The updated exhibits and supporting documents are referenced in the letter below.

EXHIBIT A – Legal Description (Rule 6.4.1):

1. The legal description does not appear to be accurate. The narrative states there are four parcels that make up the current and proposed permit area. Included in the narrative it is stated that Randy Kirtright owns the two eastern and one western parcels and The O'Brien Living Trust (O'Brien Trust) owns the middle parcel. A review of the Larimer County Assessor website it indicates that Randy Kirtright owns the western two parcels and the eastern most parcel, while the O'Brien Trust owns the middle parcel. Please clarify this discrepancy and provide an updated Exhibit A.

   Randy Kirtright owns the western two parcels and the easternmost parcel and the O'Brien Trust owns the middle parcel. The language in Exhibit A has been revised to include the correct description of parcel ownership.

2. During the review Larimer County Assessor website it appears the current and proposed permit boundaries include land owned by CDOT in the northwest corner. Please provide a map that clearly depict the parcels of land that are included in the proposed and current permit boundaries.

   The Exhibit C maps now clearly depict parcel ownership within the current permit boundaries and proposed permit boundaries. Reclamation is complete on the land owned by CDOT as well as land along the southern permit boundary (in the vicinity of Lacy Lane) and CEC sent a request via certified mail on February 27, 2025 to release these areas from within the permit boundaries. The land where reclamation is complete and where CEC is seeking to release land from the permit boundaries is shown on Exhibit C-2.

3. Pursuant to Rule 6.4.1(2) the main entrance to the mine site shall be located based on a USGS topographic map showing latitude and longitude or Universal Transverse Mercator (UTM). The operator will need to specify coordinates of latitude and longitude in degrees, minutes and seconds or in decimal degrees to an accuracy of at least five (5) decimal places (e.g., latitude 37.12345 N, longitude 104.45678 W). For UTM, the operator will need to specify North American Datum (NAD) 1927, NAD 1983, or WGS 84, and the applicable zone, measured in meters. Please provide the coordinates of the main entrance to the mine in the updated Exhibit A.

The coordinates have been added to the main entrance of the mine in Exhibit A and Exhibit B.

EXHIBIT C – Pre-Mining and Mining Plan Map(s) of Affected Lands (Rule 6.4.3):

4. On the Pre-Mining Plan Map, C-1, please clearly show the permit boundary of the currently approved permit area encompassing 79.8 acres along with the proposed amendment permit boundary for 111.7 acres and the affected land boundary. In the legend or on the map clearly state the acreages associated with these features. Include a table that clearly identifies each individual corner of the proposed permit boundary and each corners coordinates in decimal degrees.

Exhibit C-1 has been revised to include the current permit boundary and the proposed permit boundary. Exhibit C-1 also states the acreages associated with each of the current and proposed permit boundaries. Due to survey level accuracy of the mapping, the existing permit area, based on the legal description in the 1986 permit, is actually 77.4 acres. The amended permit area has been expanded by 6.6 acres for a total Permit Area of 84 acres, which includes the 4.7 acres of affected area noted in the Board Order and an additional 1.9 acres of land. Additionally, we have included a table identifying the individual corners of the proposed permit boundary and the coordinates of those corners in decimal degrees.

Expansion of the permit boundary will both satisfy the Board Order by including the affected land outside of the historical permit boundary and allow CEC to complete removal of the remaining alluvial floodplain material, deposited by the 2013 flood, as a borrow source for backfilling Pond 1. It should be noted that prior to the 2013 flood, the 6.6 acres of new permit area was a productive grass hay and grazing field and there is good topsoil underneath the flood deposit to allow for revegetation without the need for additional topsoil.

While CEC seeks to obtain fill material from this expansion area, CEC also has completed reclamation work on much of the property within the permit boundaries. CEC sent a request for release of certain land within the permit boundaries via certified mail on March 03, 2025; CEC intends to request release of much of the remaining property once it has obtained approval of its permanent augmentation plan (discussed in Exhibit G). The map included as Exhibit C-2 clearly identifies these reclaimed areas.

5. Map C-1 needs to be updated to include the existing floodway limit and 100-yr floodplain boundary. These items were included on a few of the maps originally submitted but removed during responses to the incomplete notices.

Exhibit C-1 has been revised to include the existing floodway limit and the 100-yr floodplain boundary.

6. The Pond Backfill Borrow Area needs to be clearly marked on the map along with the approximate volume of material available for reclamation activities.

Exhibit C-1 has been revised to include this information.

7. The currently approved Reclamation Plan Map (TR-1), as well as the most recent SWSP Figure 2 Map, shows there are five total ponds at the site; Pond 1, 2, 3, 4 and a Pre-1981-Pond. For consistency, please keep this naming convention for the major features at the site. If you desire to rename features at the site please update the Pre-Mining Plan Map with the new name of the feature along with former name of the feature

A global change has been made to all exhibits and text to utilize the previous pond numbering.

8. Please provide an additional map overlaid on a recent (May 2023 or more recent) aerial image of the permit area. The currently proposed affected land boundary does not appear to include all of the land that was disturbed by the Applicant in 2023 and subject of the violation MV-2023-025. The signed Board Ordered corrective action states "submit an amendment application to encompass all of the affected land at the site." In this case the affected land was the 4.7 acres outside the currently approved permit boundary. These 4.7 acres need to be part of the proposed affected land boundary so the Applicant can reclaim the disturbed lands correctly.

The proposed permit area and affected area boundaries have been revised to include all of the 4.7 acres identified in violation MV-2023-025. An additional map (Exhibit C-2) also has been included with this response, showing the permit area and relevant boundaries overlaid on an aerial photos from August 14, 2024.

9. It appears the proposed affected area boundary along the northern side of the permit is following the 300 foot riparian habitat buffer discussed in Attachment A from Exhibit H – Wildlife Habitat (Rule 6.4.7). If this is the case it needs to be clearly depicted on the map as such along with the variance area. Otherwise provide an explanation for the affected land boundary being proposed as depicted.

Please see the response to item #8 above regarding the proposed permit boundary. Exhibit C-1 has been revised to show both the 300ft habitat buffer as well as the variance area, both of which are described in Attachment A of Exhibit H.

EXHIBIT E – Reclamation Plan (Rule 6.4.5):

10. The narrative needs to be updated to be consistent with item #7 above.

Please see response to item #7 above. The narrative in Exhibit E has been revised to use the previous pond numbering.

11. The narrative needs to be updated to remove the Stroh Pit as a primary source of material for backfill and topsoil. Currently, mining activity at the Stroh Pit has not started and there is not foreseeable date for when activity may begin. Please provide an alternative source of backfill and topsoil material.

Stroh Pit will not be used as a source of material for backfill or topsoil; the remaining reclamation work will be completed using material from within the Kirtright Pit permit boundary, as amended by this amendment application. Materials will come from the Borrow Area and the Topsoil Stockpile as explained in Exhibit E and shown in Exhibit C-1.

12. The 7-year time frame for completion of reclamation at the Kirtright Pit is not adequate.

According to the Operator submitted annual reports and previous inspections, site mining activities last occurred at the site in either 2005 or 2008. The annual report filed in 2018 clearly indicated the site was in final reclamation. In 2015 the Division approved TR-1 which revised the Reclamation Plan Map to reflect current site conditions and proposed revegetation areas. Additionally, the Operator, in TR-1, stated they would file for permanent augmentation of the exposed groundwater at the site in March of 2015. Since 2018 the Operator has indicated they were waiting for approval of the permanent plan for augmentation for the site. Once that plan was approved the Kirtright Pit would be eligible for release.

Pursuant to Rule 3.1.3, all reclamation shall be carried to completion by the Operator with all reasonable diligence, and each phase of reclamation shall be completed within five (5) years from the date the Operator informs the Board or Office that such phase has commenced, or from the date the Office has evidence that mining or exploration has ceased, unless extended by the Board or Office.

Please propose an updated reclamation schedule and timeline in accordance with Rules 6.4.5(2)(c) and (e) and Rule 3.1.3

Rule 6.4.5(2)(c) provides that Exhibit E must include **"A description of how the Reclamation Plan will be implemented to meet each applicable requirement of Rule 3.1."**

***Rule 6.4.5(2)(e) states that Exhibit E must include*:**

"A plan or schedule indicating how and when reclamation will be implemented. Such plan or schedule shall not be tied to any specific date but shall be tied to implementation or completion of different stages of the mining operation as described in Rule 6.4.4(e). The plan or schedule shall include:
(i) An estimate of the periods of time which will be required for the various stages or phases of reclamation;
(ii) A description of the size and location of each area to be reclaimed during each phase; and
(iii) An outline of the sequence in which each stage or phase of reclamation will be carried out.

(The schedule need not be separate and distinct from the Reclamation Plan, but may be incorporated therein.)"

***Rule 3.1.3 provides*:**

"All reclamation shall be carried to completion by the Operator with all reasonable diligence, and each phase of reclamation shall be completed within five (5) years from the date the Operator informs the Board or Office that such phase has commenced, or from the date the Office has evidence that mining or exploration has ceased, unless extended by the Board or Office. The 5-year period may be applied separately to each phase as it is commenced throughout the life of the mine."

Exhibit E has accordingly been updated to: (a) describe how the Reclamation Plan meets the requirements of Section 3.1; (b) include a table indicating the remaining stages of reclamation, including the order and estimated time to complete each stage and the area covered by such stage; and (c) further information regarding the timeline for reclamation.

The applicant agrees to complete reclamation within 1.5 years of the amendment approval. An updated timeline has been included in the revised Exhibit E.

13. Please provide a reclamation description of the road that is located along the northern border of the proposed permit boundary. If the road is to remain after final reclamation is complete a statement to that effects needs to be provided.

The road is not within current permit boundaries and CEC is no longer seeking to include it within the proposed permit boundaries.

CEC's initial amendment application included the road within the proposed permit area, but CEC has now updated the application to leave the road outside of the proposed permit boundaries. Accordingly, this road is not discussed in the reclamation plan.

14. Please provide a reclamation description for the pre-1981 pond areas.

CEC had previously removed some of the 2013 floodplain deposit materials from a 2.28 acre area in between the pre-1981 ponds as shown in Exhibits C-1 and C-2. CEC has not affected the ponds themselves. A narrative for reclamation of this affected area has been added to Exhibit E and is shown graphically in Exhibit F.

15. In the incompleteness response #1 the Applicant indicated the drainage swale has been removed since there are wildlife implications if they encroach within 300 feet of the Big Thompson River. The provided attachment, Attachment A, is dated from 2017 and the last paragraph indicates "If the proposed project has not commenced within one year, please contact the Colorado Field Office to request an extension." Since activities have not commenced has the field office been contacted for an update? Additionally, contained in the O'Brien objection packet, provided to the Applicant on August 5, 2024, there is a Floodplain Development Permit for the Stroh Pit (Exhibit F) that clearly indicates underdrains through the buffer area. Please provide a clarification of these conflicting items.

Parks and Wildlife (CPW) provided an extension of the 2017 concurrence letter, which confirmed that no adverse impacts to wildlife were expected, on February 20, 2025. The 2017 concurrence letter states:

"that a reinitiation of consultation will be required if: …… 2. The action is subsequently modified in a manner that causes an adverse effect to the listed species or critical habitat that was not considered in this consultation;"

As noted above, Exhibit C-1 has been updated to show the 300ft buffer and the variance area from Figure 3 of Attachment A.

There have been no changes to the management of the land south of the riparian zone and the land in question within the 300 ft buffer is still either grazed or mowed, preventing the establishment of tall grasses and therefore the ground CEC intends to work is not suitable PMJM habitat and the "action has not been subsequently

modified". Furthermore, of the area included in the permit boundary that CEC intends to work, 78% of that ground occurs within the variance area as defined in the 2017 concurrence letter.

The underdrains identified in the buffer area are not associated with the Kirtright permit; they are associated with the Stroh Pit. To address the incorrect notion of inconsistency, the underdrain outlets associated with the Stroh Pit had undergone additional Section 404 permitting and USFWS consultation in 2023. CEC currently holds a 404 permit and approval from USFWS to construct those structures, but they are not related to the Kirtright Pit.

16. Please provide a description of how the ponds will be dewatered for backfilling. Where will the water be pumped and will a discharge permit be needed?

The only pond that is being backfilled is Pond 1. Water will be pumped from Pond 1 to the Big Thompson River. CEC submitted a request to CDPHE on January 30, 2025 to update the existing stormwater permit to include dewatering.

EXHIBIT F – Reclamation Plan Map (Rule 6.4.6):

17. Please update the map according to item #7 above.

See response to #7 above. Exhibit F has been revised to use the previous pond numbering.

18. The gravel haul road located north of Pond 1 and west of Pond 2 is still depicted. If this road is to remain it needs to be included in the narrative in Exhibit E and clearly shown to be remaining after reclamation on the map.

This haul road had been part of the initial proposal to obtain material from Stroh Pit. As CEC is no longer proposing to obtain materials from the Stroh Pit, this road is not needed and is not part of the plan. Accordingly, it is no longer depicted.

EXHIBIT G – Water Information (Rule 6.4.7):

19. Please provide a detailed description of the current status of the plan for permanent augmentation is and what future actions are planned.

The following description is based on information provided by CEC's legal counsel in the matter of the Application for Approval of Plan for Augmentation, Change of Water Right, and for Conditional and Absolute Underground and Surface Water Rights, Including Water Storage Rights, Coulson Excavating, Inc. Case No. 19CW3157.

Coulson has filed an application for an augmentation plan in Colorado Division Water Court, now pending in 19 CW 3157. The application seeks approval to replace depletions caused by several unlined pits along the Big Thompson River, including up to 21.76 acres of exposed groundwater created after 1981, and associated with the subject permit. To the extent the augmentation requirement is decreased, this will be reflected in the judicially approved final decree, which Coulson hopes to obtain by the end of 2025.

Although this application was filed in 2019, it was necessary to amend the application in 2020 to incorporate additional sources of augmentation water, including municipal effluent made available pursuant to a second long-term lease entered with the City of Loveland. The case was referred to the Water Court Judge and set for a trial in 2024. Unfortunately, Coulson was unable to obtain "dry-up" credit for historical irrigation shares that were being

relied upon as augmentation supplies- and the Court approved their motion to vacate the trial and allow them time to investigate further additional sources.

Coulson has an extensive portfolio of water rights they own, including 5.5 irrigation shares in the Consolidated Hillsborough Ditch Company and 10 shares in the Big Thompson and Platte River Ditch. These ditches are strategically located near the Kirtright property and in combination would yield significantly more than is required.

Coulson and the opposers are scheduled for a Status Conference with the Court to be held on June 17, 2025. Prior to that time, the Applicant will republish their second amended application using some combination of the above-described sources. With such a robust supply, Coulson believes that the case will be resolved fairly quickly.

20. If the Applicant needs to get a plan for permanent augmentation for Ponds at the site that needs to be clearly described here, as well as in Exhibit E, and clearly depicted on Exhibit F. A detailed description of the size of Ponds that will be covered and a timeline for approval. Additionally, please address the scenario of what will happen if the Applicant is unable to get permanent or partial augmentation.

Please see the information provided above in response to #19 above. Exhibit E and F also have been revised to include this information.

Given the sustainable water supply being secured through the addition of the Hillsborough Ditch, Big Thompson and Platte River Ditch shares and the City of Loveland municipal effluent, the risk of CEC not being able to obtain permanent or partial augmentation is very low. However, if that were to occur, CEC would submit a technical revision to define design and installation of a compacted clay liner to seal off Ponds 2, 3 and 4 from exposure to the atmosphere.

21. The last approve Substitute Water Supply Plan (SWSP) the Division has on file expired on December 31, 2023. Please provide a copy of the currently approved SWSP or suitable documentation that the Applicant is compliant with DWR regulations for exposed groundwater.

The Kirtright Pit is included in the Coulson Excavating Temporary Substitute Supply Plan (the "SWSP"). The current SWSP is attached to the Amendment Application. The most recent SWSP was approved through 2024 and the current, enclosed SWSP is awaiting approval by the Colorado Division of Water Resources.

EXHIBIT H – Wildlife Information (Rule 6.4.8):

22. As mentioned in item #15 above, Attachment A (Conservation Measures for Stroh Pit), is dated from 2017 and the last paragraph indicates of the USFW letter states "If the proposed project has not commenced within one year, please contact the Colorado Field Office to request an extension." Since activities have not commenced has the field office been contacted for an update?

Please see response to item # 15 above.

23. Considering the known presence of threatened species in the area has the Applicant contacted Colorado Parks and Wildlife (CPW) to get a description of the game and non-

game resources on and in the vicinity of the application area?

A wildlife assessment of the Kirtright property was conducted in 2017 as part of CEC's Use by Special Review Permit application for the Stroh Pit. CPW issued a concurrence letter confirming that the project would not have adverse impacts on wildlife (Attachment A) and has since provided an extension of that concurrence letter (there have been no changes to the management of the land south of the riparian zone and the land in question within the 300 ft buffer is still either grazed or moved, preventing tall grasses from establishing).

24. It is noted in Attachment A that a variance area was given for certain locations. Please comment on getting a variance for the reclamation of areas that were affected by the Operator within the buffer zone.

Please see response to item #15 above.

EXHIBIT L – Reclamation Costs (Rule 6.4.12):

25. Please provide details of the pumps (size) and piping (length and diameter) needed for dewatering.

A 3" Gorman Rupp S3A1 230V 1P or similar with approximately 1200ft of collapsable hose will be used for dewatering.

26. Please provide the details of the equipment that will be used for backfilling the ponds, including but not limited to, the average haul/push distances and types and sizes of equipment to be used.

A Caterpillar D8 dozer or similar will be used to push the 4"-6" of backfill material from the surface into Pond 1. The average push distance is 500'.

EXHIBIT N – Source of Legal Right to Enter (Rule 6.4.14):

27. Please provide the details and appropriate documentation of the source of legal right to enter to conduct reclamation on the O'Brien property and CDOT property (see item #2). This may include a copy of a lease, deed, abstract of title, a current tax receipt, or a signed statement by the Landowner and acknowledged by a Notary Public stating that the Operator/Applicant has legal right to enter to conduct reclamation.

a) ***CDOT Property***

CEC sent a request to DRMS via certified mail on February 27, 2025 to release the CDOT property from within the permit boundaries; reclamation work is complete in this location and CEC does not need to enter upon CDOT property to complete the remaining reclamation work.

b) O'Brien Property

CEC is the successor beneficiary of a 1930 deed granting a right of way from the land owned by CEC across both the Kirtright and O'Brien parcels. A copy of this deed is provided in connection with Exhibit N of the amendment application. CEC also has a legal right of entry across the remainder of the O'Brien property pursuant to a 1986 agreement with Virgil Kirtright (owner of the O'Brien property at the time), which is discussed below.

i) 1986 Agreement

Legal access elsewhere on the O'Brien property is established by a grant of entry that was

provided by Virgil Kirtright (Linda O'Brien's father) in 1986, when the O'Brien property was in his ownership (the "1986 Agreement," a copy of which is provided with the amendment application). The 1986 Agreement provided CEC with the right to enter and remove gravel from the Kirtright property and was executed a few months before DRMS's approval of CEC's original mining and reclamation permit in 1986. The 1986 Agreement functioned as the source of a legal right of entry at the time of the original 1986 permit and continues to operate as a legal right of entry today. When Linda O'Brien took title to the O'Brien property six years after the execution of the 1986 Agreement, she took ownership subject to this entry right. The warranty deed establishing her title specifically provides that her title is subject to "easements, covenants, restrictions and reservations of record, or in use, if any." The 1986 Agreement was unrecorded but CEC's use was in place prior to the execution of Linda O'Brien's deed as CEC has accessed the O'Brien Property for mining, and subsequently reclamation, since 1986. This was done with Linda O'Brien's full knowledge; it is only in the recent past that Linda O'Brien has questioned CEC's right to access the land.

Notwithstanding these existing access rights, CEC has completed reclamation work on the O'Brien property and adjacent Kirtright property to the east in accordance with the most recently approved (2015) reclamation plan, with the exception of final approval of the augmentation plan, and does not anticipate needing to access the O'Brien property for further reclamation work.

EXHIBIT S – Permanent Man-made Structures (Rule 6.4.19):

28. Please provide the completed structure agreements where the affected lands are within two hundred (200) feet of any significant, valuable and permanent man-made structures.

Requests for structure agreements were sent to owners of permanent man-made structures within 200 feet of the affected lands on June 25, 2025, by certified mail along with the official notification letter. CDOT, which owns a fence and roadway within the 200-foot radius, is the only party that this now applies to. An executed structure agreement with CDOT is included as an attachment to Exhibit S of the Amendment Application.

Objections:

29. The Division received 38 timely objections, in accordance with Rule 1.7.1(2)(a) and one comment letter from Larimer County. The objection and comment letters were sent to the Applicant in emails dated July 11th, 22nd, 26th, and on August 5th and 6th, 2024. Please inform the Division if the Applicant does not have a copy of all the comment or objections and they will be resent. Please be prepared to respond to the objections.

The applicant has copies of the objection letters and has prepared a response to comments letter that it is submitting in connection with this letter.

Other:

30. Please provide proof of publication of the public notice in a newspaper of general circulation as required by Rule 1.6.5 and Rule 1.6.2(1)(d). Proof of publication may consist of either a copy of the last newspaper publication that includes the date published, or a notarized statement from the newspaper.

Proof of publication has been enclosed.

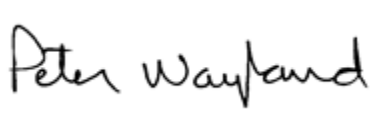
31. Pursuant to Rule 1.6.2(1)(e), please provide proof that all Owners of Record of all land surface within 200 feet of the boundary of the affected lands received a copy of the notice in Rule 1.6.2(1)(d) immediately after the first publication.

Proof of mailing by certified mail has been enclosed.

32. Pursuant to Rule 1.6.2(2), please demonstrate that the Applicant's response to these adequacy issues have been placed with the application materials previously placed with the County Clerk or Recorders Office, and made available for public review

An image of the Clerks date stamp has been included.

As noted above, CEC wishes to highlight that we have prepared an additional letter in response to the comments received by DRMS regarding our amendment application (the "Response to Comments"). We believe this letter helps to clarify a number of misunderstandings regarding the purpose and impact of the proposed permit amendment. The Response to Comments is being submitted as an appendix to this letter.



Peter Wayland
President

Encl. Exhibit A, Revised Text Exhibits, Revised Map Exhibits B, C-1, C-2 and F, Exhibit S-1, Attachments G-1, N-1, N-2, N-3, Proof of Mailing, Proof of Publication and Response to Objections.

ATTACHMENT A

From: ColoradoES, FW6
To: Peter Wayland
Subject: RE: [EXTERNAL] Extension Request for Letter of Concurrence Regarding PMJM Habitat
Date: Thursday, February 20, 2025 1:26:26 PM

Dear Peter Wayland,

Thank you for reaching out to the U.S. Fish and Wildlife Service (Service) regarding your request for an extension to TAILS 06E24000-2017-TA-0001.
Based on your confirmation that there will be no changes in management of the land south of the riparian zone and that all conditions granted by the concurrence letter will be honored, the Service wishes to extend our 2017 concurrence that this project is not likely to adversely affect the Preble's mouse through the duration of this project.

Regards,
Kate Lunz

Kate Lunz
Biologist
Ecological Services, U.S. Fish and Wildlife Service

From: Peter Wayland <pwayland@weilandinc.com>
Sent: Wednesday, January 15, 2025 1:39 PM
To: ColoradoES, FW6 <ColoradoES@fws.gov>
Subject: [EXTERNAL] Extension Request for Letter of Concurrence Regarding PMJM Habitat

Hello,

Please find attached.

_____

Peter Wayland
Weiland, Inc.

PO Box 18087

Boulder, CO 80308
M 303.518-2182

ATTACHMENT N-1

COPY.

No. 7. QUIT CLAIM DEED.—For sale by The W. F. Robinson Printing Co., Manufacturing Stationers, 1514 Arapahoe Street, Denver, Colo.

This Deed, *Made this* thirteenth *day of* September *in the year of our Lord one thousand nine hundred and* thirty, *between*

T. R. Norcross

of the County of Larimer *and State of Colorado, of the first part, and*

Venas McCoy

of the said *County of* Larimer *and State of Colorado, of the second part:*

WITNESSETH, *That the said part* y *of the first part, for and in consideration of the sum of*

Two Hundred ($200.00) DOLLARS

to the said part y *of the first part in hand paid by the said part* y *of the second part, the receipt whereof is hereby confessed and acknowledged, has remised, released, sold, conveyed and QUIT CLAIMED, and by these presents do remise, release, sell, convey and QUIT CLAIM unto the said part* y *of the second part,* his *heirs and assigns forever, all the right, title, interest, claim and demand which the said part* y *of the first part has in and to the following described real estate situate, lying and being in the* said *County of* Larimer *and State of Colorado, to-wit:* A right of way for a private road across the Southeast Quarter (SE¼) of Section Fifteen (15), Township Five (5) North, Range Sixty-eight (68) West of the Sixth Principal Meridian described as follows:

A strip 50 feet wide running from the public highway on the West side of said quarter section in an Easterly direction along and immediately South of the present fence South of the Big Thompson River for a distance of about 100 rods, thence following stakes now placed upon the ground, which stakes are the center of said 50-foot right of way, extending to the present East end of the 20-foot right of way heretofore conveyed. Reserving, however, to the grantor, his heirs and assigns the right to use said private road with the grantee herein and also the right to maintain one cross fence and gate across said right of way.

This right of way herein conveyed shall take the place of and be in lieu of the 20-foot right of way heretofore conveyed by John M. Cunningham to the grantee herein and wherever said 20-foot right of way is not contained in the right of way herein conveyed, the same is hereby relinquished by the grantee herein.

TO HAVE AND TO HOLD *the same, together with all and singular the appurtenances and privileges thereunto belonging, or in anywise thereunto appertaining, and all the estate, right, title, interest and claim whatsoever, of the said part* y *of the first part, either in law or equity, to the only proper use, benefit and behoof of the said part* y *of the second part,* his *heirs and assigns forever.*

IN WITNESS WHEREOF, *The said part* y *of the first part ha* ve *hereunto set* his *hand and seal the day and year first above written.*

Signed, Sealed and Delivered in Presence of

(Signed) T. R. NORCROSS (SEAL)

(Signed) [illegible] (SEAL)

STATE OF COLORADO } ss (SEAL)

Coulson Excavating Co., Inc.

ATTACHMENT N-2

EXHIBIT "O"

Phone 667-2178
3609 N. County Road 13
Loveland, Colorado 80537

Feb. 10, 1986

Virgil Kirtright
1202 East 2nd Street
Loveland, Co. 80537

RE: Kirtright property gravel agreement

This agreement between Virgil Kirtright and Coulson Excavating Co., Inc. gives Coulson Excavating Co., Inc. the right to remove gravel from the Kirtright property at the unit price of twenty-five cents per ton.

Coulson Excavating Co., Inc. shall zone and perform all preparatory work at their expense. If water rights are needed in zoning, the Kirtrights will furnish them.

Coulson Excavating Co., Inc. will pay Kirtright a $20,000.00 deposit on or before March 1, 1986, as a deposit on future gravel extractions. It is anticipated that mining will begin in the fall of 1986 or spring of 1987.

Signed:
COULSON EXCAVATING CO., INC.
Richard Coulson
Richard Coulson, Vice-President

Read and Approved:
Virgil Kirtright
Virgil Kirtright

Subscribed and sworn to before me this 11 day of Feb, 1986.

Diana Montgomery
Notary Public---State of Colorado
My Commission Expires May 25, 1989

RCPTN # 92065729 10/21/92 12:31:00 # PAGES - 2 FEE - $10.00
M RODENBERGER RECORDER, LARIMER COUNTY CO STATE DOC FEE - $.00

WARRANTY DEED

THIS DEED, Made this 20th day of October , 1992 , between VIRGIL D. KIRTRIGHT, RANDY A. KIRTRIGHT, STEVE D. KIRTRIGHT and DARLENE J. KIRTRIGHT

of the County of Larimer , State of Colorado, grantor(s) and

LINDA D. BATES O'BRIEN

whose legal address is 3317 Franklin Avenue, Loveland, CO 80537

STATE DOCUMENTARY FEE
EXEMPT
Doc. Fee - Exempt

of the County of Larimer , State of Colorado, grantee(s):

WITNESSETH, That the grantor(s), for and in consideration of the sum of FIFTY AND NO/100---------- DOLLARS, the receipt and sufficiency of which is hereby acknowledged, ha ve granted, bargained, sold and conveyed, and by these presents do grant, bargain, sell, convey, and confirm, unto the grantee(s), her heirs and assigns forever, all the real property, together with improvements, if any, situate, lying and being in the County of Larimer , State of Colorado, described as follows: A portion of the Southeast Quarter of Section 15, Township 5 North, Range 68 West of the 6th P.M., being more particularly described on Exhibit "A" attached hereto and incorporated herein by reference.

also known by street and number as: Vacant Land

TOGETHER with all and singular the hereditaments and appurtenances thereto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the grantor(s), either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.

TO HAVE AND TO HOLD the said premises above bargained and described with the appurtenances, unto the grantee(s), her heirs and assigns forever. And the grantor(s), for them selves, their heirs and personal representatives, do covenant, grant, bargain, and agree to and with the grantee(s), her heirs and assigns, that at the time of the ensealing and delivery of these presents, are well seized of the premises above conveyed, have good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and ha ve good right, full power and authority to grant, bargain, sell and convey the same in manner and form as aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances, and restrictions of whatever kind or nature soever, except taxes not payable, easements, covenants, restrictions and reservations of record, or in use, if any

The grantor(s) shall and will WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the grantee(s), her heirs and assigns, against all and every person or persons lawfully claiming the whole or any part thereof.

IN WITNESS WHEREOF, the grantor(s) ha executed this deed on the date set forth above.

Virgil D. Kirtright
Virgil D. Kirtright

Randy A. Kirtright
Randy A. Kirtright

Steve D. Kirtright
Steve D. Kirtright

Darlene J. Kirtright
Darlene J. Kirtright

STATE OF COLORADO)
) ss.
County of Larimer)

The foregoing instrument was acknowledged before me this 20th day of October , 19 92 , by Virgil D. Kirtright, Randy A. Kirtright, Steve D. Kirtright and Darlene J. Kirtright

My commission expires [illegible]

NOTARY PUBLIC
SUZANNE McWILLIAMS
STATE OF COLORADO

Witness my hand and official seal.

Suzanne McWilliams
Notary Public

*If in Denver, insert "City and

Return To:
R. BRUCE FICKEL
P.O. BOX 5
BERTHOUD, COLORADO 80513

EXHIBIT "A"

Legal Description of a portion of the Southeast Quarter of Section 15, Township 5 North, Range 68 West of the 6th Principal Meridian, County of Larimer, State of Colorado being more particularly described as follows:

Beginning at the Northwest Corner of the Southeast Quarter of said Section 15 and considering the West line of the Southeast Quarter of said Section 15 to bear South 00°22'00" West and with all bearings contained herein relative thereto; thence along the West line of the Southeast Quarter of said Section 15 South 00°22'00" West 42.00 feet to a point on the South right-of-way line of the great Western railroad; thence along said South right-of-way line North 89°08'35" East 58.97 feet to the Easterly right-of-way line of Highway 87; thence along the Easterly right-of-way line South 00°23'30" West 20.00 feet to the Northwesterly corner of that certain parcel of land described in deed, recorded in Book 1110, Page 559, Records of said County; thence along a line parallel with said railroad right-of-way North 89°08'35" East 423.14 feet; thence South 42°53'46" East 223.38 feet; thence North 57°01'02" East 72.97 feet; thence North 00°24'03" West 145.22 feet; thence South 46°01'30" East 328.73 feet; thence South 05°14'10" West 249.04 feet; thence South 56°34'15" West 145.72 feet; thence East 368.63 feet to the TRUE POINT OF BEGINNING; thence continuing East 184.33 feet to the Southeast Corner of that certain parcel of land described in deed, recorded in Book 1514, Page 383, Records of said County; thence along the East line of said parcel of land North 567.72 feet to a point on the Southerly right-of-way line of the Great Western Railroad; thence along said right-of-way line North 89°08'35" East 442.49 feet; thence departing said right-of-way line South 00°10'40" West 2610.67 feet to a point on the South line of the Southeast Quarter of said Section 15; thence along said South line South 89°46'35" West 625.00 feet; thence departing said South line North 00°10'40" East 2038.77 feet to the TRUE POINT OF BEGINNING.

The above described parcel contains 35.02 acres more or less and is subject to the following access and utility easement.

Legal Description of an access and utility easement on, over and across a portion of the Southeast Quarter of Section 15, Township 5 North, Range 68 West of the 6th Principal Meridian, Larimer County, Colorado being more particularly described as follows:

Said access and utility easement shall be the South 40 feet of said Southeast Quarter lying Easterly of the Interstate Highway 25 frontage road.

EXHIBIT G-1

COULSON EXCAVATING CO.
TEMPORARY SUBSTITUTE
WATER SUPPLY PLAN

Prepared for:

Coulson Excavating Co., Inc.
3609 North County Rd 13
Loveland, CO 80538

Prepared by:

Weiland, Inc.
PO Box 18087
Boulder, CO 80308

December, 2024

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APPENDIX VI

Renewal of Lease of Fully Consumable Water and New Lease for additional Supply

1.0 BACKGROUND

1.1 PROJECT DESCRIPTION

Coulson Excavating Co., Inc. (CEC) owns and operates the Brownwood Pit, Bonser Pit, Amen Aggregate Resources and the future Henderson Aggregate Resources and has leased lands on which they have operated the Gardels, Kirtright and Challenger Pits. The Gardels, Kirtright and Challenger pits have undergone final reclamation as defined by the Colorado Land Reclamation Act for the Extraction of Construction Materials, Section 34-32.5-101, et seq., C.R.S. 1984, as amended. The Brownwood Pit has depleted all of the aggregate resources, however, continues to be used for the processing of imported aggregate materials and production of Hot Mix Asphalt (HMA). The mining is near completion Bonser Pit and the Amen Aggregate Resource will begin operations this summer. The reclaimed sites have mining cells which have filled with groundwater resulting in areas of free surface water which depletes groundwater otherwise tributary to the Big Thompson and S. Platte rivers through evaporation. The groundwater filled mining cells are referred to herein as gravel ponds. The gravel pond sites are located in Larimer and Weld Counties, and all occur in Water District 4, Division 1 as defined by the Colorado Division of Water Resources (DWR). The gravel ponds are shown in **Figure 1 – Locations Map.** A permanent augmentation plan has been filed with water court for the Gardels, Brownwood Kirtright and Challenger sites (19CW3157) and a final ruling now is expected by the end of the 2025 calendar year.

This plan quantifies future evaporative losses in time, place and amount and replaces those losses by delivery of in-priority adjudicated replacement water in time, place and amount. Replacement water rights include 0.318 share of Big Thompson Ditch & Mfg., 11 shares of Hill & Brush and 150 acre-ft of fully consumable reuse water leased from the City of Loveland.

2.0 EVAPORATIVE LOSS DEPLETIONS AND REPLACEMENT REQUIREMENT

2.1 GARDELS PIT

The Gardels Pit is located in the North ½ Section 19, Township 5 North, Range 68 West of the 6th PM. The site location is shown in **Figure 1 – Locations Map**.

The Gardels Pit was mined for sand & gravel under the Colorado Division of Reclamation Mining & Safety (DRMS) Permit # M2005-033 between the years of 2006 and 2009. A Temporary Substitute Water Supply Plan (SWSP) has been in effect to date. The site is currently reclaimed and will be released from the DRMS permit upon issuance of the final decreed augmentation plan by water court.

The Gardels Pit property has been reclaimed to leave 2 unlined groundwater fed ponds. Ponds 1 and 2 have free water surface areas of 6.8 acres and 2.0 acres respectively for a total free water area surface of 8.8 acres. The Gardels pond areas are shown in **Figure 4 – Gardels Pit Pond Areas.** A mining cell to the west of the property (west pit) was lined with a compacted clay liner, which was tested for leakage and approved by the Office of the State Engineer (OSE) in October of 2012 (see Appendix I).

The evaporative loss calculations are given in **AI.1 Evaporative Loss Worksheet - Gardels Pit.** The monthly fraction of annual evaporation is based on the Guidelines for Substitute Water Supply Plans for elevations below 6500 ft published by the OSE. The annual free water surface evaporation is taken from NOAA Technical Report NWS 33 (**see Figure 2 – NOAA TR33 Pan Evaporation**). After applying precipitation credit, the net evaporative depletions were lagged utilizing the IDS AWAS program. Transmissivity was set to 20,000 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS layer (see **Figure 3 - Alluvial Aquifer Transmissivity**). The distance to the aquifer boundary was set to 1,400 ft, which is based on the Atlas of Sand, Gravel & Quarry Aggregate Resources, Colorado Front Range. The IDS AWAS output is given in **AII.2 Gardels IDS AWAS Model Output.** The annual net evaporation rate for the Gardels Ponds is calculated to be **19.45 acre-ft./yr.**

2.2 BROWNWOOD PIT

The Brownwood Pit is located in the East 1/2 of Section 19 and in the SW ¼ of Section 20, Township 5 North, Range 68 West of the 6th PM. The site location is shown in **Figure 1 – Locations Map**.

The Brownwood Pit was mined for sand & gravel under the Colorado Division of Reclamation Mining & Safety (DRMS) Permit # M1979-059 between the years of 1979 and 2006. A Temporary Substitute Water Supply Plan (SWSP) has been in effect to date. The site is currently reclaimed and will be released from the DRMS permit upon issuance of the final decreed augmentation plan by water court.

The Brownwood Pit property has been reclaimed to leave an unlined groundwater fed pond with a free water surface area of 11.28 acres and a

second pond (Pfeif addition) with 3.92 acres of water surface area (see **Figure 5 – Brownwood Pit Pond Areas).** A mining cell in the south east of the property was lined with a compacted clay liner, which was tested for leakage and approved by the Office of the State Engineer (OSE) in October of 2012 (see Appendix I). The Brownwood SE Reservoir is shown in **Figure 5 - Brownwood Reservoir SE.**

The evaporative loss calculations are given in **AI.2 Evaporative Loss Worksheet - Brownwood Pit.** The monthly fraction of annual evaporation is based on the Guidelines for Substitute Water Supply Plans for elevations below 6500 ft published by the OSE. The annual free water surface evaporation is taken from NOAA Technical Report NWS 33 (see **Figure 2 – NOAA TR33 Pan Evaporation**). After applying precipitation credit, the net evaporative depletions were lagged utilizing the IDS AWAS program. Transmissivity was set to 40,137 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS layer (see **Figure 3 - Alluvial Aquifer Transmissivity**). The distance to the aquifer boundary was set to 1,400 ft, which is based on the Atlas of Sand, Gravel & Quarry Aggregate Resources, Colorado Front Range. The IDS AWAS output is given in **AII.3 Brownwood IDS AWAS Model Output.** The annual net evaporation rate for the Brownwood ponds is calculated to be **33.64 acre-ft./yr.**

2.3 BONSER PIT

The Bonser Pit is located in the SW ¼ of Section 15 and the SE ¼ of Section 16, Township 5 North, Range 68 West of the 6th PM. The site location is shown in **Figure 1 – Locations Map**.

The Bonser Pit is currently being mined for sand & gravel under the Colorado Division of Reclamation Mining & Safety (DRMS) Permit #M-2000-156.

Mining is complete at the Bonser Pit and reclamation is underway. Currently approximately 22.2 acres of groundwater is exposed in 4 ponds and on settling pond as shown in Figure 2. (see **Figure 6 – Bonser Pit Pond Areas**). Pond 1 and the settling pond have been in existence since the beginning of the project. Between March of 2018 and July of 2018, Pond 2 was allowed to fill with groundwater. Replacement of first fill depletions were covered in the previous plan.

The evaporative loss calculations are given in **AI.3 Evaporative Loss Worksheet - Bonser Pit.** The monthly fraction of annual evaporation is based on the Guidelines for Substitute Water Supply Plans for elevations below 6500 ft published by the OSE. The annual free water surface evaporation is taken from NOAA Technical Report NWS 33 (see **Figure 2 – NOAA TR33 Pan Evaporation**). After applying precipitation credit, the net evaporative depletions were lagged utilizing the IDS AWAS program. Transmissivity was set to 25,000 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS layer (see **Figure 3 - Alluvial Aquifer Transmissivity**). The distance to the aquifer boundary was set to 3,000 ft, which is based on the Atlas of Sand, Gravel & Quarry Aggregate Resources, Colorado Front Range. The IDS AWAS output is

given in **AII.3 Bonser IDS AWAS Model Output.** The annual net evaporation rate for the Brownwood ponds is calculated to be **49.92 acre-ft./yr.**

2.4 KIRTRIGHT PIT

The Kirtright Pit is located in the SE ¼ Section 15, Township 5 North, Range 68 West of the 6th PM. The site location is shown in **Figure 1 – Locations Map.**

The Kirtright Pit was mined for sand & gravel under the DRMS Permit # M1986-123 between the years of 1986 and 2007. A SWSP has been in effect to date. The site is currently reclaimed and will be released from the DRMS permit upon issuance of the final decreed augmentation plan by water court.

Additional reclamation work began in April of 2023 and had backfilled most all of the Pond 1 area, however CEC ceased the backfill operation in August 2023. CEC does intend to continue backfilling Pond 1, however this plan includes the current pond areas for the site as a worst case scenario with regard to pond surface area. The pond areas are given in **Figure 7 - Kirtright Pit Pond Areas**.

The evaporative loss calculations are given in **AI.3 Evaporative Loss Worksheet - Kirtright Pit.** The monthly fraction of annual evaporation is based on the Guidelines for Substitute Water Supply Plans for elevations below 6500 ft published by the Office of the State Engineer (OSE). The annual free water surface evaporation is taken from NOAA Technical Report NWS 33. (see **Figure 2 – NOAA TR33 Pan Evaporation**). After applying precipitation credit, the net evaporative depletions were lagged utilizing the IDS AWAS program. Transmissivity was set to 20,115 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS layer (see **Figure 3 - Alluvial Aquifer Transmissivity**). The distance to the aquifer boundary was set to 3,500 ft, which is based on the Atlas of Sand, Gravel & Quarry Aggregate Resources, Colorado Front Range. The IDS AWAS output is given in **AII.4 – Kirtright IDS Loss AWAS Model Output**. The annual net evaporation rate for the Kirtright ponds is calculated to be **43.94 acre-ft./yr.**

2.5 CHALLENGER PIT

The Challenger Pit is located in the West ½ Section 29, Township 5 North, Range 67 West of the 6th PM. The site location is shown in **Figure 1 – Locations Map.**

The Challenger Pit was mined for sand & gravel under the DRMS Permit # M1985-026 between the years of 1987 and 2005. A SWSP has been in effect to date. The site is currently reclaimed and will be released from the DRMS permit upon issuance of the final decreed augmentation plan by water court.

The Challenger Pit property has been reclaimed to leave 3 unlined groundwater fed ponds. Ponds 1, 2 and 3 have free water surface areas of 17.80, 2.30 and 2.60 acres respectively for a total free water area surface of 22.70 acres (see **Figure 7 - Challenger Pit Pond Areas)**.

The evaporative loss calculations are given in **AI.4 Evaporative Loss Worksheet - Challenger Pit.** The monthly fraction of annual evaporation is based on the Guidelines for Substitute Water Supply Plans for elevations below 6500 ft published by the OSE. The annual free water surface evaporation is taken from NOAA Technical Report NWS 33 (see **Figure 2 – NOAA TR33 Pan Evaporation**). After applying precipitation credit, the net evaporative depletions were lagged utilizing the IDS AWAS program. Transmissivity was set to 40,000 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS layer (see **Figure 3 - Alluvial Aquifer Transmissivity**). The distance to the aquifer boundary was set to 1,700 ft, which is based on the Atlas of Sand, Gravel & Quarry Aggregate Resources, Colorado Front Range. The IDS AWAS output is given in **AII.5 Challenger IDS AWAS Model Output.** The annual net evaporation rate for the Challenger ponds is calculated to be **52.77 acre-ft./yr.**

2.6 AMEN AGGREGATE RESOURCE

2.6.1 PROJECT DESCRIPTION

Conventional dry mining methods shall be employed for the operation which involves construction of dewatering trenches to drain the gravel deposit. The dewatering trenches are pumped to a sediment pond on the surface which then discharges to the Big Thompson River.

Mining and Reclamation of Cell 2 has been completed and the compacted clay liner is currently undergoing a 90 day leak test.

This plan covers extraction of sand & gravel from Cells 3, and Cell 6. Mining will proceed from the east to the west as shown in **Figure 9. Site Plan 2025.**

2.6.1.1 Evaporative Losses

Evaporative losses will occur due to groundwater exposed in the network of dewatering trenches, a sump and a sediment pond. The area of exposed groundwater as of December 2024 is shown in **Figure 9. Site Plan 2025. Table 2.2.1-1 Exposed Groundwater Area Calculation** breaks down the predicted future areas of exposed groundwater based on the past rate of mining and opening of new trenches. The areas should be considered a conservative approach, since it does not account for backfilling of existing trenches with overburden.

Table 2.1.1-1. Exposed Groundwater Area Calculation

Sediment Trench Area = .23 acres

Period	Total Area*
	[acre]
Jan 2025 - March 2025	1.01
April 2025 - June 2025	1.14
July 2025 – Sept 2025	1.18

Oct 2025 - Dec 2025 1.67

- Total area includes Sediment Trench

The gross surface water evaporation calculation is based on a free water surface evaporation of 40.4 inches year^{-1} (Farnsworth and Peck 1982). Historical climate data shows mean temperature below 32 degrees for Dec-Jan, therefore ice cover for those months prevents evaporation. Evaporative losses are offset by applying effective precipitation credit (70% of precipitation) to the area of exposed groundwater. Monthly precipitation values are an average of monthly precipitation values from 1989-2017 at the NCWCD Loveland climate station.

AI.6 Evaporative Loss Calculation gives the monthly calculation for predicted net evaporative losses for Jan 2025 through Dec 2025. The total annual evaporative loss from dewatering trenches, sump and sediment pond is predicted to be 3.21 acre-ft.

2.6.1.2 Mined Losses and Dust Control Losses

Water loss due to pore water extracted with the mined product has been calculated based on 4% of the mined material weight as water. This calculation is given in **AI.7. Monthly Mined Water Extracted and Dust Control - Amen Aggregate Resource.** The total annual volume of water extracted with the mined material is predicted to be 8.8 acre-ft.

Water will be appropriated for dust control by pumping from the sediment pond or sump to water trucks. Periodic pumping for dust control will generally occur at < 0.5 c.f.s., however depletions are calculated based on monthly needs given in **AI.7. Monthly Mined Water Extracted and Dust Control - Amen Aggregate Resource.** The total annual volume of water extracted with the mined material is predicted to be 6.48 acre-ft.

2.6.2 Lagged depletions

Depletions from evaporative losses, mining and dust control have been summed in **AI.8. Total Net Water Loss / Replacement - Amen Aggregate Resource.** Total predicted depletions are then lagged in real time (non-steady state) utilizing the IDS AWAS ver. 1.5.85 program. The extent of the alluvial aquifer input is based on the *Atlas of Sand, Gravel & Quarry Aggregate Resources*, Colorado Front Range (GIS). Transmissivity was set to 40,000 g.p.d./ft. and is based on the published Colorado DWR CDSS GIS. Total lagged depletions are given in **AI.8. Total Net Water Loss / Replacement - Amen Aggregate Resource.**

2.6.3 NET WATER DEPLETION

The net water loss per year can be written as:

(Monthly Evaporative Loss) + (Monthly Volume of Water Extracted) = (Net Stream Depletion / Replacement)

The monthly sums of evaporative losses and water extracted have been lagged utilizing the IDS-AWAS model as described above. The model was run to predict actual monthly stream depletions as they occur (non-steady state).

The monthly water loss or potential injury to the Big Thompson River **AI.8. Total Net Water Loss / Replacement - Amen Aggregate Resource.** The total annual net depletion is predicted to be 18.66 acre-ft. for 2025.

3.0 REPLACEMENT SOURCES

3.1 BIG TOMPSON DITCH AND MANUFACTURING CO. HCU CREDITS

CEC owns 5/6 (0.833) of a share of Big Thompson Ditch & Manufacturing Company (BTDM) water rights decreed in 1883 for approximately 28 c.f.s. The point of diversion is located in the NE ¼ of the SW ¼, Section 15, Township 5 North, Range 69 West.

The land area occupied by the Brownwood Pit described above is the historical place of irrigation use for this water right.

3.1.1 Historical Consumptive Use Analysis

This plan relies on the Historical Consumptive Use Analysis (HCU) resulting from a ditch-wide analysis performed by Spronk Water Engineer in June and December of 2009 in support of water court Case # 02CW392 for the City of Loveland.

The farm was irrigated solely by two shares in the BTDM. These two shares were historically used to irrigate approximately 139.68 acres. There are a total of 20.792 shares in the BTDM (case #2002CW392). In accordance with 2002CW392 section 9.3.13, the average irrigated acreage equals 9.6% of the total 1,455 irrigated acreage under the ditch. The 2 shares divided by 20.792 total shares also equals 9.6 %. The percentage of land under the ditch equals the percentage of fractional ownership of shares in the ditch and therefore satisfies section 9.3.13 of the decree.

A worksheet which integrates the ditch-wide HCU analysis performed by Spronk and memorialized in the decree is given in **AII.1 BTD&M HCU Credit and Return Flow based on 02CW392.**

3.2 HILL & BRUSH DITCH

This plan relies on an HCU analysis performed by Paul Weiss, P.E. 2023. The analysis is given in Addendum I. A summary worksheet is given in **AIII.2 Hill and Brush HCU Credit and Return Flow Table based on Weiss 2023**, which also calculated a return flow factor for integration into the plan.

3.3 CITY OF LOVELAND REPLACEMENT WATER

CEC is party to two leases with the City of Loveland for of fully consumable replacement water. These Leases entitle the applicant to delivery of up to 150 acre-ft annually of reusable effluent from structures on the Big Thompson River, including the outfall of the City's Wastewater Treatment Plant located at 920 S. Boise Avenue, Loveland, CO. The 100 acre-ft lease term is for 25 years with the unlimited option to renew for successive terms of twenty-five (25) years. Both leases are currently dedicated for replacement water for CEC's Temporary Substitute Water Supply Plan (SWSP) for operation of the sites identified in this plan. The current renewal for the 100 acre-ft lease and the original lease for the additional 50 acre-ft are given in **Appendix VII**.

4.0 **PLAN OPERATION**

4.1 OVERVIEW

The plan is organized between upstream replacements and downstream replacements. The upstream sites include Gardels Pit and Brownwood Pit which will use HCU credits from the BTDM and City of Loveland Lease water and storage from Brownwood Reservoir SE. The downstream sites include the Bonser Pit, the Kirtright Pit, Amen Aggregate Resource and the Challenger Pit and Henderson Aggregate Resource. Replacement water for the downstream sites will include Hill & Brush HCU credits, Hillsborough Ditch HCU credits, City of Loveland Lease water and storage from Brownwood Reservoir SE.

4.2 REPLACEMENT OF DEPLETIONS FROM UPSTREAM SITES

The upstream sites include Gardels and Brownwood. A summary of the upstream losses and replacements is given in **AIV.1 Total Loss and Replacements Summary Worksheet 2021-2022**

Replacement water will include BTDM HCU credits, City of Loveland Lease water and existing free river storage in Brownwood Reservoir SE.

BTDM return flows will be delivered at the Brownwood Return Flow 12” Parshall Flume fitted with a Sutron SDR stage recorder. The structure is located at the north west corner of the property adjacent to the river.

4.3 REPLACEMENT OF DEPLETIONS FROM DOWNSTREAM SITES

The downstream sites include Bonser Pit, the Kirtright Pit, Amen Aggregate Resource and the Challenger Pit. A summary of the downstream losses and replacements is given in **AIV.1 Total Loss and Replacements Summary Worksheet 2021-2022.**

Replacement water will include Hill & Brush HCU credits, City of Loveland Lease water and existing free river storage in Brownwood Reservoir SE.

Hill & Brush return flows will be delivered at the Hill & Brush Return Flow 12” Parshall Flume fitted with a Sutron SDR stage recorder. The structure is located at the north east corner of the intersection of WCR 54 and WCR 15.

4.4 ACCOUNTING

Accounting forms have been developed for evaporative losses for each of the pit sites (see **AV.1-AV.6**) The evaporative loss accounting has been developed on a monthly basis and assumes the ponds water levels to be static. The evaporative loss calculations are based on those given above in Section 2.0. Summary worksheet giving Net Depletions and Replacements is given in **AV.7. Monthly Accounting Sheet - Net Depletions and Replacements Upstream and Downstream Sites.**

5.0 **REFERENCES**

IDS AWAS ***Integrated Decision Support Alluvial Water Accounting System Model.*** 10-15-2014 Version 1.5.85. http://www.ids.colostate.edu/projects.php?project=awas

IDS-CU - ***Integrated Decision Support Consumptive Use Model.*** 7-24-2016 Version 3.3.160. http://www.ids.colostate.edu/projects.php?project=idscu&breadcrumb=IDSCU

US Dept. of Agriculture Soil Conservation Service 1988, ***Colorado Irrigation Guide.*** USDA SCS Denver, CO

Schwochow, S. D., R. R. Shroba, and P. C. Wicklein. 1974 "***SP-05-B Sand, Gravel, and Quarry Aggregate Resources Colorado Front Range Counties."*** Aggregate Resources. Special Publication. Denver, CO: Colorado Geological Survey, Department of Natural Resources.

Colorado Division of Water Resources ***Online Map Viewer Groundwater Transmissivity GIS Layer ,*** December 2018 download

https://gis.colorado.gov/dnrviewer/Index.html?viewer=mapviewer

EXHIBIT G-1

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

Weiland, Inc.
Environmental & Engineering
PO BOX 18087
BOULDER, CO. 80308
ph 303-443-9521

COULSON GRAVEL EXCAVATING CO.

SUBSTITUTE WATER SUPPLY PLAN

LARIMER & WELD COUNTIES

PREPARED FOR: COULSON EXCAVATING CO. ,INC.

FIGURE 1

SITE LOCATIONS

SCALE	DWG NO.		REV.
1"=2,500'	FIGURE 1.DWG		REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 07/10/2021	SHEET 1 OF 1

EXHIBIT G-1

LEGEND

CLASS A PAN EVAPORATION ISOLINE MINOR 0.25”

CLASS A PAN EVAPORATION ISOLINE MAJOR 1.25”

CLASS A PAN EVAPORATION ISOLINE SOURCE: COLORADO DNR CDSS GIS

0 2500 5000 Feet

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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SUBSTITUTE WATER SUPPLY PLAN

LARIMER & WELD COUNTIES

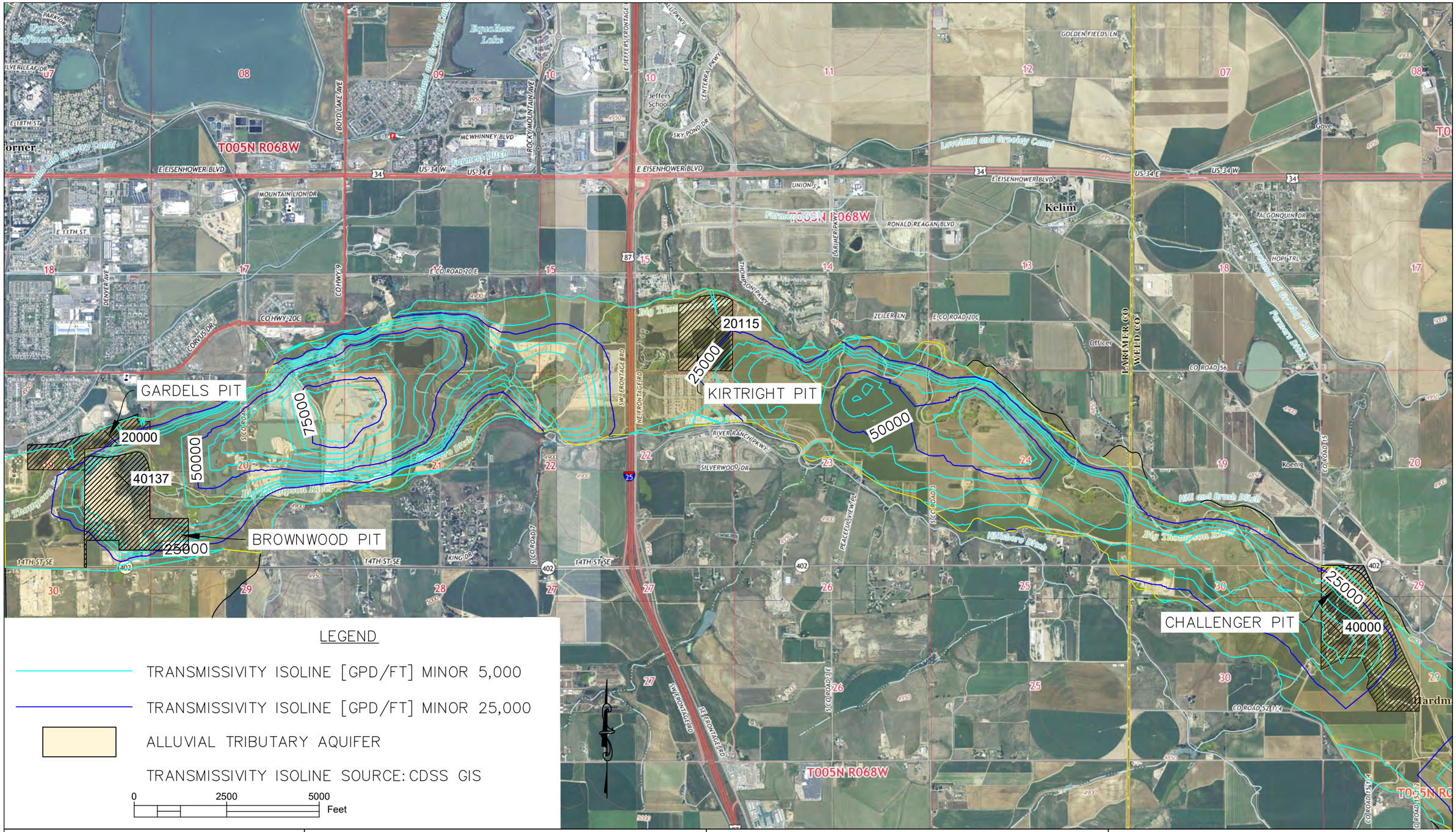
PREPARED FOR: COULSON EXCAVATING CO. ,INC.

FIGURE 2 - NOAA TR-33

CLASS A PAN EVAPORATION

SCALE	DWG NO.		REV.
1"=2,500'	FIGURE 2.DWG		REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 01/23/2019	SHEET 1 OF 1

EXHIBIT G-1



LEGEND

TRANSMISSIVITY ISOLINE [GPD/FT] MINOR 5,000

TRANSMISSIVITY ISOLINE [GPD/FT] MINOR 25,000

ALLUVIAL TRIBUTARY AQUIFER

TRANSMISSIVITY ISOLINE SOURCE: CDSS GIS

0 2500 5000 Feet

REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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SUBSTITUTE WATER SUPPLY PLAN

LARIMER & WELD COUNTIES

PREPARED FOR: COULSON EXCAVATING CO. ,INC.

FIGURE 3

ALLUVIAL AQUIFER TRANSMISSIVITY

SCALE	DWG NO.	REV.
1"=2,500'	FIGURE 3.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	01/23/2019	1 OF 1

EXHIBIT G-1

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COULSON EXCAVATING CO.

SUBSTITUTE WATER SUPPLY PLAN

LARIMER COUNTY

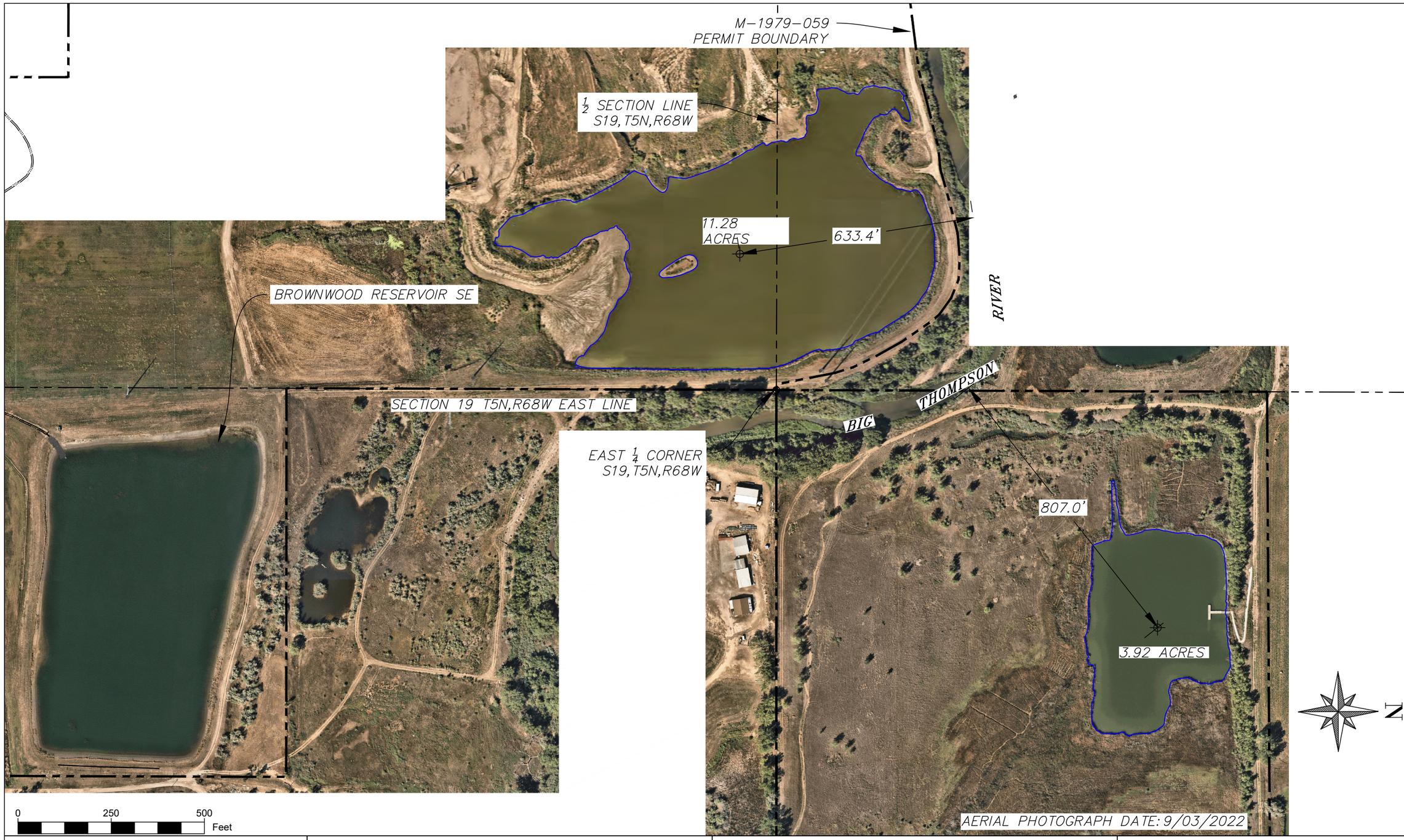
PREPARED FOR: COULSON EXCAVATING CO., INC.

FIGURE 4 - GARDELS PIT POND AREAS

SCALE	DWG NO.	REV.
1"=150'	FIGURE 4.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	07/10/2021	1 OF 1

EXHIBIT G-1



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COULSON EXCAVATING CO.

COMBINED SUBSTITUTE WATER SUPPLY PLAN

LARIMER COUNTY, CO

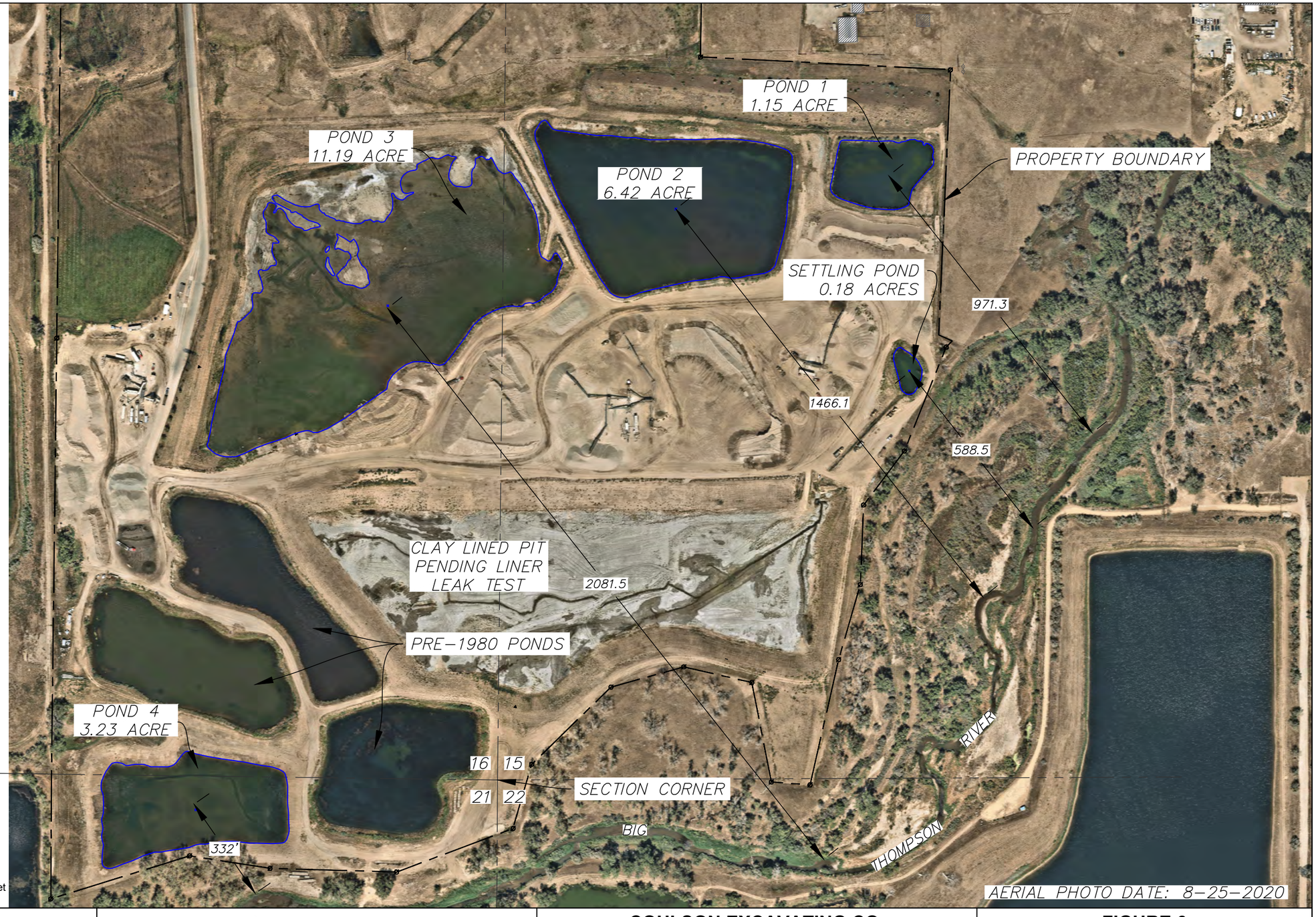
PREPARED FOR: COULSON EXCAVATING, CO., INC.

FIGURE 5

BROWNWOOD PIT POND AREAS

SCALE	DWG NO.		REV.
1"=250'	FIGURE 2.DWG		REV
DRAWN BY: CTW	CHECKED BY: PFW	DATE: 11/30/2022	SHEET: 1 OF 1

EXHIBIT G-1



0 300 600 Feet

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COULSON EXCAVATING CO.

SUBSTITUTE WATER SUPPLY PLAN

LARIMER COUNTY, CO

PREPARED FOR: COULSON EXCAVATING CO., INC.

FIGURE 6

BONSER PIT POND AREAS

SCALE	DWG NO.	REV.
1"=300'	FIGURE 6.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	07/10/2021	1 OF 1

EXHIBIT G-1

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REV	DESCRIPTION	DATE	APPROVED

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COULSON EXCAVATING CO.

SUBSTITUTE WATER SUPPLY PLAN

LARIMER COUNTY, CO

PREPARED FOR: COULSON EXCAVATING CO., INC.

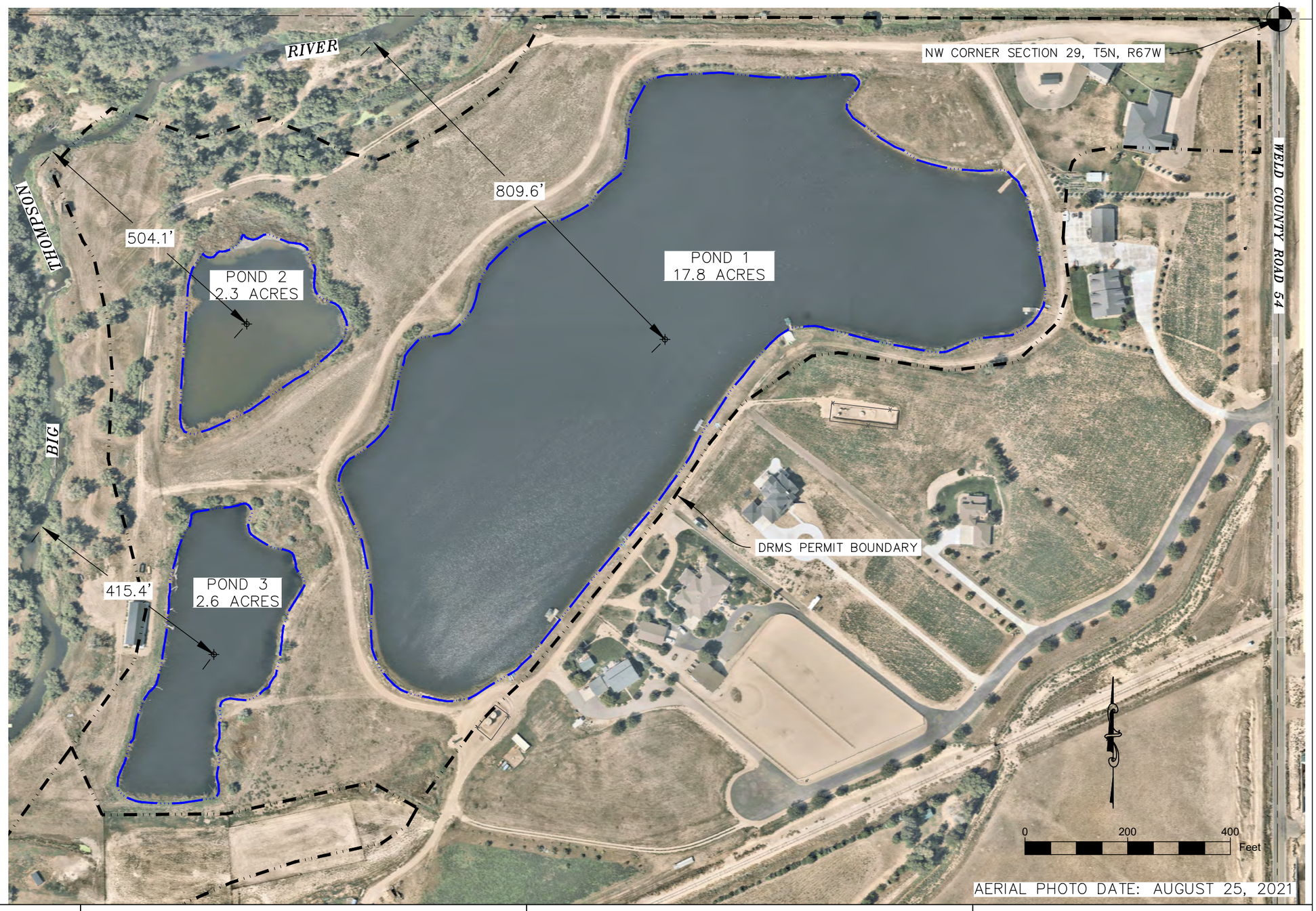
FIGURE 7

KIRTRIGHT PIT POND AREAS

SCALE	DWG NO.	REV.
1"=250'	FIGURE 7.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	12/10/2024	1 OF 1

EXHIBIT G-1



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COULSON EXCAVATING CO.

TEMPORARY SUBSTITUTE WATER SUPPLY PLAN

LARIMER COUNTY, CO

PREPARED FOR: COULSON EXCAVATING CO., INC.

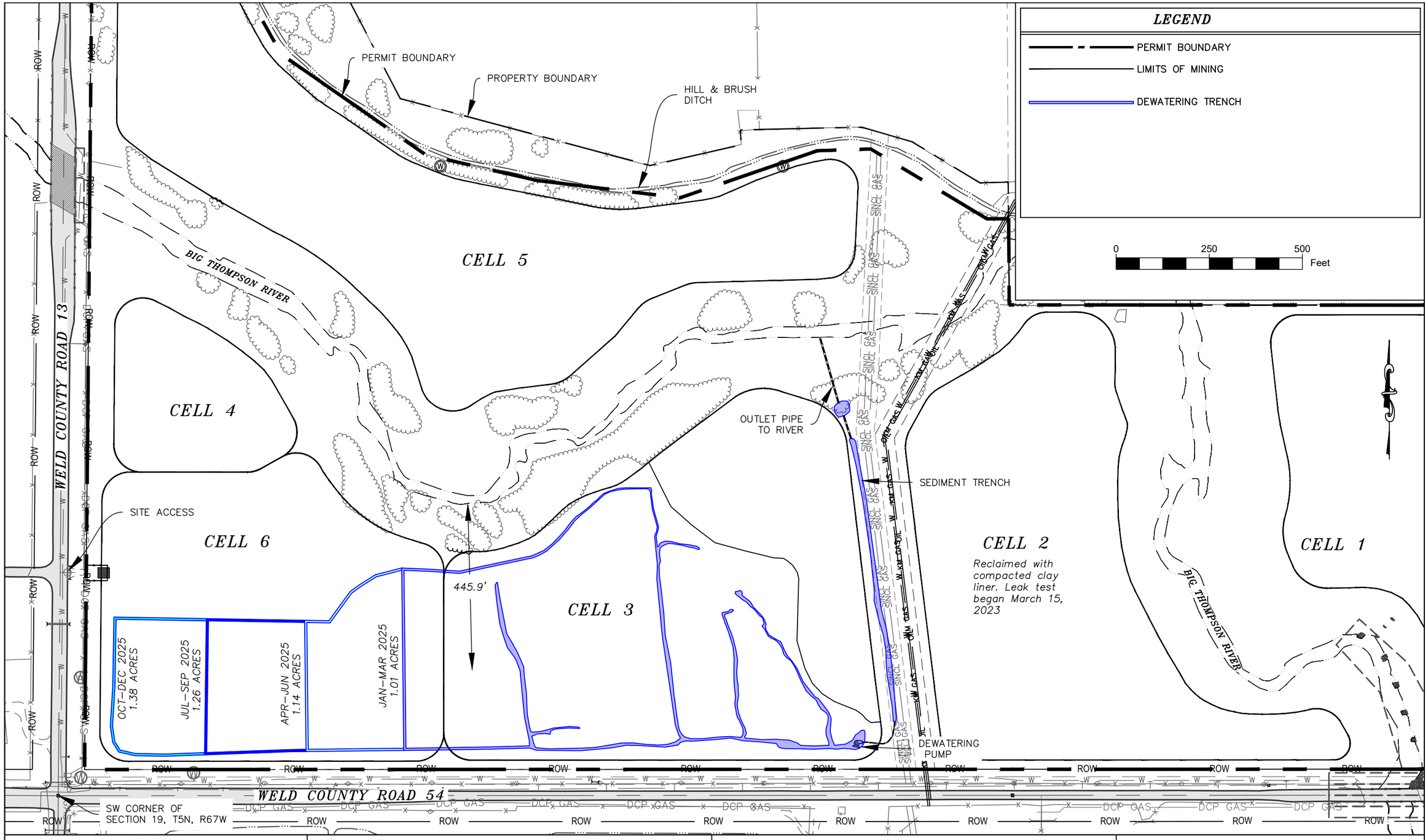
FIGURE 8

CHALLENGER PIT POND AREAS

SCALE	DWG NO.	REV.
1"=200'	FIGURE 8.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	07/15/2021	1 OF 1

EXHIBIT G-1



REVISIONS			
REV	DESCRIPTION	DATE	APPROVED

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Environmental & Engineering
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AMEN AGGREGATE RESOURCE
SUBSTITUTE WATER SUPPLY PLAN
WELD COUNTY

PREPARED FOR: COULSON EXCAVATING CO., INC.

FIGURE 9
SITE PLAN 2025

SCALE	DWG NO.	REV.
1"=250'	FIGURE 2.DWG	REV

DRAWN BY:	CHECKED BY:	DATE:	SHEET
CTW	PFW	04/07/2023	1 OF 1

EXHIBIT G-1

APPENDIX I

EXHIBIT G-1

AI.1 Evaporative Loss Worksheet - Gardels Pit

Pond 1 Surface Area: *6.80* *acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Volumetric Evaporation Rate [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Volumetric Evaporative Loss Rate (unlagged) [acre-ft./mo.]	(9) Net Volumetric Evaporative Loss Rate (lagged) [acre-ft./mo.]
Jan	0.030	3.270	0.098	0.00	0.00	0.00	0.00	0.00	0.06
Feb	0.035	3.270	0.114	6.80	0.78	0.05	0.24	0.54	0.30
Mar	0.055	3.270	0.180	6.80	1.22	0.12	0.57	0.65	0.56
Apr	0.090	3.270	0.294	6.80	2.00	0.17	0.81	1.19	0.92
May	0.120	3.270	0.392	6.80	2.67	0.22	1.05	1.62	1.37
June	0.145	3.270	0.474	6.80	3.22	0.14	0.67	2.56	2.08
Jul	0.150	3.270	0.491	6.80	3.34	0.13	0.62	2.72	2.56
Aug	0.135	3.270	0.441	6.80	3.00	0.11	0.52	2.48	2.56
Sep	0.100	3.270	0.327	6.80	2.22	0.13	0.62	1.60	2.03
Oct	0.070	3.270	0.229	6.80	1.56	0.10	0.48	1.08	1.40
Nov	0.040	3.270	0.131	6.80	0.89	0.06	0.29	0.60	0.88
Dec	0.030	3.270	0.098	0.00	0.00	0.00	0.00	0.00	0.33
totals			3.270		20.90	1.23	5.85	15.05	15.05

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 4 - Gardels Pit Pond Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(5) = Column (3) * Column (4).

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.2).

EXHIBIT G-1

AI.1 Evaporative Loss Worksheet - Gardels Pit

Pond 2 Surface Area: *2.00* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)	Net Evaporative Loss (lagged) Pond 1 + 2	Lagged Stream Depletion Factor
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft/mo.]	[unitless]
Jan	0.030	3.270	0.098	0.00	0.00	0.04	0.00	0.00	0.01	**0.07**	0.00
Feb	0.035	3.270	0.114	2.00	0.23	0.05	0.07	0.16	0.11	**0.41**	0.02
Mar	0.055	3.270	0.180	2.00	0.36	0.12	0.17	0.19	0.17	**0.73**	0.04
Apr	0.090	3.270	0.294	2.00	0.59	0.17	0.24	0.35	0.29	**1.22**	0.06
May	0.120	3.270	0.392	2.00	0.78	0.22	0.31	0.48	0.43	**1.80**	0.09
June	0.145	3.270	0.474	2.00	0.95	0.14	0.20	0.75	0.65	**2.73**	0.14
Jul	0.150	3.270	0.491	2.00	0.98	0.13	0.18	0.80	0.77	**3.32**	0.17
Aug	0.135	3.270	0.441	2.00	0.88	0.11	0.15	0.73	0.75	**3.31**	0.17
Sep	0.100	3.270	0.327	2.00	0.65	0.13	0.18	0.47	0.56	**2.59**	0.13
Oct	0.070	3.270	0.229	2.00	0.46	0.10	0.14	0.32	0.38	**1.79**	0.09
Nov	0.040	3.270	0.131	2.00	0.26	0.06	0.08	0.18	0.24	**1.12**	0.06
Dec	0.030	3.270	0.098	0.00	0.00	0.05	0.00	0.00	0.07	**0.40**	0.02
totals			3.270		6.15	1.32	1.72	4.43	4.43	**19.47**	1.00

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 4 - Gardels Pit Pond Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(5) = Column (3) * Column (4).

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.2).

(10) = Pond 1, Column (9) + Pond 2, Column (9).

(11) = Each month of Column (10) divided by total of Column (10)

AI.2 Evaporative Loss Worksheet - Brownwood Pit

Pond Surface Area: *11.28* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	Monthly Distribution	Free Water Surface Evaporation [ft./yr.]	Gross Evaporation Rate [ft./mo.]	Surface Area [acres]	Gross Evaporation [acre-ft./mo.]	Average Monthly Precip. [ft./mo.]	Effective Precip. Credit [acre-ft./mo.]	Net Evaporative Loss (unlagged) [acre-ft./mo.]	Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.270	0.098	11.28	0.00	0.04	0.00	0.00	0.68
Feb	0.035	3.270	0.114	11.28	1.29	0.05	0.39	0.90	0.93
Mar	0.055	3.270	0.180	11.28	2.03	0.12	0.95	1.08	1.16
Apr	0.090	3.270	0.294	11.28	3.32	0.17	1.34	1.98	1.60
May	0.120	3.270	0.392	11.28	4.43	0.22	1.74	2.69	2.13
June	0.145	3.270	0.474	11.28	5.35	0.14	1.11	4.24	3.02
Jul	0.150	3.270	0.491	11.28	5.53	0.13	1.03	4.50	3.61
Aug	0.135	3.270	0.441	11.28	4.98	0.11	0.87	4.11	3.66
Sep	0.100	3.270	0.327	11.28	3.69	0.13	1.03	2.66	3.05
Oct	0.070	3.270	0.229	11.28	2.58	0.10	0.79	1.79	2.35
Nov	0.040	3.270	0.131	11.28	1.48	0.06	0.47	1.01	1.74
Dec	0.030	3.270	0.098	11.28	0.00	0.05	0.00	0.00	1.03
totals			3.270		34.68	1.32	9.72	24.96	24.96

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Brownwood Pit Pond Area).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Climate Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

AI.2 Evaporative Loss Worksheet - Brownwood Pit

Pond Surface Area: *3.92* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Evaporation	Average Monthly Precip.	Effective Precip. Credit	Net Evaporative Loss (unlagged)	Net Evaporative Loss (lagged)	**Net Evaporative Loss for Both Ponds (lagged)**
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	**[acre-ft./mo.]**
Jan	0.030	3.270	0.098	3.92	0.00	0.04	0.00	0.00	0.33	**1.01**
Feb	0.035	3.270	0.114	3.92	0.45	0.05	0.14	0.31	0.26	**1.19**
Mar	0.055	3.270	0.180	3.92	0.71	0.12	0.33	0.38	0.30	**1.46**
Apr	0.090	3.270	0.294	3.92	1.15	0.17	0.47	0.68	0.39	**1.99**
May	0.120	3.270	0.392	3.92	1.54	0.22	0.60	0.94	0.56	**2.69**
June	0.145	3.270	0.474	3.92	1.86	0.14	0.38	1.48	0.82	**3.84**
Jul	0.150	3.270	0.491	3.92	1.92	0.13	0.36	1.56	1.11	**4.71**
Aug	0.135	3.270	0.441	3.92	1.73	0.11	0.30	1.43	1.26	**4.92**
Sep	0.100	3.270	0.327	3.92	1.28	0.13	0.36	0.92	1.23	**4.28**
Oct	0.070	3.270	0.229	3.92	0.90	0.10	0.27	0.63	1.04	**3.40**
Nov	0.040	3.270	0.131	3.92	0.51	0.06	0.16	0.35	0.82	**2.56**
Dec	0.030	3.270	0.098	3.92	0.00	0.05	0.00	0.00	0.56	**1.59**
totals			3.270		12.05	1.32	3.37	8.68	8.68	**33.64**

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Sheet 2 - Brownwood Pit Pond Area).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Climate Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

(10) = Column (9) 11.6 acre pond + Column (9) 3.92 acre pond.

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Pond 1 Surface Area: *1.15 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Evaporative Loss (unlagged) [acre-ft./mo.]	(9) Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.310	0.099	1.15	0.00	0.04	0.00	0.00	0.13
Feb	0.035	3.310	0.116	1.15	0.13	0.05	0.04	0.09	0.12
Mar	0.055	3.310	0.182	1.15	0.21	0.12	0.10	0.11	0.13
Apr	0.090	3.310	0.298	1.15	0.34	0.17	0.14	0.20	0.15
May	0.120	3.310	0.397	1.15	0.46	0.22	0.18	0.28	0.19
June	0.145	3.310	0.480	1.15	0.55	0.14	0.11	0.44	0.24
Jul	0.150	3.310	0.497	1.15	0.57	0.13	0.10	0.47	0.30
Aug	0.135	3.310	0.447	1.15	0.51	0.11	0.09	0.42	0.33
Sept	0.100	3.310	0.331	1.15	0.38	0.13	0.10	0.28	0.31
Oct	0.070	3.310	0.232	1.15	0.27	0.10	0.08	0.19	0.27
Nov	0.040	3.310	0.132	1.15	0.15	0.06	0.05	0.10	0.23
Dec	0.030	3.310	0.099	1.15	0.00	0.05	0.00	0.00	0.17
totals			3.310		3.57	1.32	0.99	2.58	2.58

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 6 - Bonser Exposed Groundwater Pond Areas).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged Utilizing AWAS Program- Steady State (See AII.3).

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Pond 2 Surface Area: *6.42 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Evaporative Loss (unlagged) [acre-ft./mo.]	(9) Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.310	0.099	6.42	0.00	0.04	0.00	0.00	1.01
Feb	0.035	3.310	0.116	6.42	0.74	0.05	0.22	0.52	0.88
Mar	0.055	3.310	0.182	6.42	1.17	0.12	0.54	0.63	0.86
Apr	0.090	3.310	0.298	6.42	1.91	0.17	0.76	1.15	0.88
May	0.120	3.310	0.397	6.42	2.55	0.22	0.99	1.56	0.97
June	0.145	3.310	0.480	6.42	3.08	0.14	0.63	2.45	1.14
Jul	0.150	3.310	0.497	6.42	3.19	0.13	0.58	2.61	1.38
Aug	0.135	3.310	0.447	6.42	2.87	0.11	0.49	2.38	1.57
Sept	0.100	3.310	0.331	6.42	2.13	0.13	0.58	1.55	1.63
Oct	0.070	3.310	0.232	6.42	1.49	0.10	0.45	1.04	1.54
Nov	0.040	3.310	0.132	6.42	0.85	0.06	0.27	0.58	1.40
Dec	0.030	3.310	0.099	6.42	0.00	0.05	0.00	0.00	1.22
totals			3.310		19.98	1.32	5.51	14.47	14.47

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 6 - Bonser Exposed Groundwater Pond Areas).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program - Real Time beginning August 2018 (See AII.3).

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Pond 3 Surface Area: *11.19 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Evaporative Loss (unlagged) [acre-ft./mo.]	(9) Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.310	0.099	11.19	0.00	0.04	0.00	0.00	2.18
Feb	0.035	3.310	0.116	11.19	1.30	0.05	0.39	0.91	1.91
Mar	0.055	3.310	0.182	11.19	2.04	0.12	0.94	1.10	1.75
Apr	0.090	3.310	0.298	11.19	3.33	0.17	1.33	2.00	1.68
May	0.120	3.310	0.397	11.19	4.44	0.22	1.72	2.72	1.71
June	0.145	3.310	0.480	11.19	5.37	0.14	1.10	4.27	1.86
Jul	0.150	3.310	0.497	11.19	5.56	0.13	1.02	4.54	1.78
Aug	0.135	3.310	0.447	11.19	5.00	0.11	0.86	4.14	2.17
Sept	0.100	3.310	0.331	11.19	3.70	0.13	1.02	2.68	2.49
Oct	0.070	3.310	0.232	11.19	2.59	0.10	0.78	1.81	2.62
Nov	0.040	3.310	0.132	11.19	1.48	0.06	0.47	1.01	2.59
Dec	0.030	3.310	0.099	11.19	0.00	0.05	0.00	0.00	2.44
totals			3.310		34.81	1.32	9.63	25.18	25.18

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 6 - Bonser Exposed Groundwater Pond Areas).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.3).

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Pond 4 Surface Area: *3.24 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Evaporative Loss (unlagged) [acre-ft./mo.]	(9) Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.310	0.099	3.24	0.00	0.04	0.00	0.00	0.13
Feb	0.035	3.310	0.116	3.24	0.38	0.05	0.11	0.27	0.26
Mar	0.055	3.310	0.182	3.24	0.59	0.12	0.27	0.32	0.33
Apr	0.090	3.310	0.298	3.24	0.97	0.17	0.39	0.58	0.50
May	0.120	3.310	0.397	3.24	1.29	0.22	0.50	0.79	0.68
June	0.145	3.310	0.480	3.24	1.56	0.14	0.32	1.24	1.00
Jul	0.150	3.310	0.497	3.24	1.61	0.13	0.29	1.32	1.14
Aug	0.135	3.310	0.447	3.24	1.45	0.11	0.25	1.20	1.12
Sept	0.100	3.310	0.331	3.24	1.07	0.13	0.29	0.78	0.87
Oct	0.070	3.310	0.232	3.24	0.75	0.10	0.23	0.52	0.64
Nov	0.040	3.310	0.132	3.24	0.43	0.06	0.14	0.29	0.44
Dec	0.030	3.310	0.099	3.24	0.00	0.05	0.00	0.00	0.21
totals			3.310		10.10	1.32	2.79	7.31	7.31

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 6 - Bonser Exposed Groundwater Pond Areas).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.3).

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Settling Pond Surface Area *0.18 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Evaporation [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Evaporative Loss (unlagged) [acre-ft./mo.]	(9) Net Evaporative Loss (lagged) [acre-ft./mo.]
Jan	0.030	3.310	0.099	0.18	0.00	0.04	0.00	0.00	0.01
Feb	0.035	3.310	0.116	0.18	0.02	0.05	0.01	0.01	0.01
Mar	0.055	3.310	0.182	0.18	0.03	0.12	0.02	0.01	0.01
Apr	0.090	3.310	0.298	0.18	0.05	0.17	0.02	0.03	0.02
May	0.120	3.310	0.397	0.18	0.07	0.22	0.03	0.04	0.03
June	0.145	3.310	0.480	0.18	0.09	0.14	0.02	0.07	0.04
Jul	0.150	3.310	0.497	0.18	0.09	0.13	0.02	0.07	0.05
Aug	0.135	3.310	0.447	0.18	0.08	0.11	0.01	0.07	0.06
Sept	0.100	3.310	0.331	0.18	0.06	0.13	0.02	0.04	0.05
Oct	0.070	3.310	0.232	0.18	0.04	0.10	0.01	0.03	0.04
Nov	0.040	3.310	0.132	0.18	0.02	0.06	0.01	0.01	0.03
Dec	0.030	3.310	0.099	0.18	0.00	0.05	0.00	0.00	0.02
totals			3.310		0.55	1.32	0.17	0.38	0.38

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 6 - Bonser Exposed Groundwater Pond Areas).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.2).

AI.3 - Evaporative Loss Worksheet - Bonser Pit

Month	Net Evaporative Loss Pond 1 (lagged)	Net Evaporative Loss Pond 2 (lagged)	Net Evaporative Loss Pond 3 (lagged)	Net Evaporative Loss Pond 4 (lagged)	Net Evaporative Loss Pond 5 (lagged)	Total Evaporative Loss All Ponds (lagged)
	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]
Jan	0.13	1.01	2.18	0.13	0.01	3.45
Feb	0.12	0.88	1.91	0.26	0.01	3.19
Mar	0.13	0.86	1.75	0.33	0.01	3.10
Apr	0.15	0.88	1.68	0.50	0.02	3.23
May	0.19	0.97	1.71	0.68	0.03	3.58
June	0.24	1.14	1.86	1.00	0.04	4.28
Jul	0.30	1.38	1.78	1.14	0.05	4.65
Aug	0.33	1.57	2.17	1.12	0.06	5.24
Sept	0.31	1.63	2.49	0.87	0.05	5.36
Oct	0.27	1.54	2.62	0.64	0.04	5.12
Nov	0.23	1.40	2.59	0.44	0.03	4.68
Dec	0.17	1.22	2.44	0.21	0.02	4.05
totals	2.58	14.47	25.18	7.31	0.38	49.92

Pond 1 Surface Area: *0.46 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Volumetric Evaporation Rate [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Volumetric Evaporative Loss Rate (unlagged) [acre-ft./mo.]	(9) Net Volumetric Evaporative Loss Rate (lagged) [acre-ft./mo.]
Jan-25	0.030	3.310	0.099	0.00	0.00	0.04	0.00	0.00	0.06
Feb-25	0.035	3.310	0.116	0.46	0.05	0.05	0.02	0.04	0.06
Mar-25	0.055	3.310	0.182	0.46	0.08	0.12	0.04	0.05	0.06
Apr-25	0.090	3.310	0.298	0.46	0.14	0.17	0.05	0.08	0.06
May-25	0.120	3.310	0.397	0.46	0.18	0.22	0.07	0.11	0.07
Jun-25	0.145	3.310	0.480	0.46	0.22	0.14	0.05	0.18	0.09
Jul-25	0.150	3.310	0.497	0.46	0.23	0.13	0.04	0.19	0.11
Aug-25	0.135	3.310	0.447	0.46	0.21	0.11	0.04	0.17	0.12
Sep-25	0.100	3.310	0.331	0.46	0.15	0.13	0.04	0.11	0.12
Oct-25	0.070	3.310	0.232	0.46	0.11	0.10	0.03	0.07	0.11
Nov-25	0.040	3.310	0.132	0.46	0.06	0.06	0.02	0.04	0.09
Dec-25	0.030	3.310	0.099	0.00	0.00	0.05	0.00	0.00	0.08
totals			3.310		1.43	1.32	0.40	1.04	1.04

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Exposed Groundwater Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AI.4 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

Pond 2 Surface Area: *1.62* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]
Jan-25	0.030	3.310	0.099	0.00	0.00	0.04	0.00	0.00	0.27
Feb-25	0.035	3.310	0.116	1.62	0.19	0.05	0.06	0.13	0.24
Mar-25	0.055	3.310	0.182	1.62	0.29	0.12	0.14	0.16	0.23
Apr-25	0.090	3.310	0.298	1.62	0.48	0.17	0.19	0.29	0.24
May-25	0.120	3.310	0.397	1.62	0.64	0.22	0.25	0.39	0.25
Jun-25	0.145	3.310	0.480	1.62	0.78	0.14	0.16	0.62	0.28
Jul-25	0.150	3.310	0.497	1.62	0.80	0.13	0.15	0.66	0.33
Aug-25	0.135	3.310	0.447	1.62	0.72	0.11	0.12	0.60	0.37
Sep-25	0.100	3.310	0.331	1.62	0.54	0.13	0.15	0.39	0.39
Oct-25	0.070	3.310	0.232	1.62	0.38	0.10	0.11	0.26	0.38
Nov-25	0.040	3.310	0.132	1.62	0.21	0.06	0.07	0.15	0.35
Dec-25	0.030	3.310	0.099	0.00	0.00	0.05	0.00	0.00	0.32
totals			3.310		5.04	1.32	1.39	3.65	3.65

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Exposed Groundwater Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AI.4 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

Pond 3 Surface Area: *7.18 acres*

Month	(1) Monthly Distribution	(2) Free Water Surface Evaporation [ft./yr.]	(3) Gross Evaporation Rate [ft./mo.]	(4) Surface Area [acres]	(5) Gross Volumetric Evaporation Rate [acre-ft./mo.]	(6) Average Monthly Precip. [ft./mo.]	(7) Effective Precip. Credit [acre-ft./mo.]	(8) Net Volumetric Evaporative Loss Rate (unlagged) [acre-ft./mo.]	(9) Net Volumetric Evaporative Loss Rate (lagged) [acre-ft./mo.]
Jan-25	0.030	3.310	0.099	0.00	0.00	0.04	0.00	0.00	1.13
Feb-25	0.035	3.310	0.116	7.18	0.83	0.05	0.25	0.58	1.00
Mar-25	0.055	3.310	0.182	7.18	1.31	0.12	0.60	0.70	0.99
Apr-25	0.090	3.310	0.298	7.18	2.14	0.17	0.85	1.28	1.01
May-25	0.120	3.310	0.397	7.18	2.85	0.22	1.11	1.75	1.11
Jun-25	0.145	3.310	0.480	7.18	3.45	0.14	0.70	2.74	1.28
Jul-25	0.150	3.310	0.497	7.18	3.56	0.13	0.65	2.91	1.53
Aug-25	0.135	3.310	0.447	7.18	3.21	0.11	0.55	2.66	1.72
Sep-25	0.100	3.310	0.331	7.18	2.38	0.13	0.65	1.72	1.79
Oct-25	0.070	3.310	0.232	7.18	1.66	0.10	0.50	1.16	1.70
Nov-25	0.040	3.310	0.132	7.18	0.95	0.06	0.30	0.65	1.54
Dec-25	0.030	3.310	0.099	0.00	0.00	0.05	0.00	0.00	1.35
totals			3.310		22.34	1.32	6.18	16.15	16.15

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Exposed Groundwater Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AI.4 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

Pond 4 Surface Area: *10.27* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]
Jan-25	0.030	3.310	0.099	0.00	0.00	0.04	0.00	0.00	1.62
Feb-25	0.035	3.310	0.116	10.27	1.19	0.05	0.36	0.83	1.43
Mar-25	0.055	3.310	0.182	10.27	1.87	0.12	0.86	1.01	1.41
Apr-25	0.090	3.310	0.298	10.27	3.06	0.17	1.22	1.84	1.45
May-25	0.120	3.310	0.397	10.27	4.08	0.22	1.58	2.50	1.60
Jun-25	0.145	3.310	0.480	10.27	4.93	0.14	1.01	3.92	1.83
Jul-25	0.150	3.310	0.497	10.27	5.10	0.13	0.93	4.16	2.18
Aug-25	0.135	3.310	0.447	10.27	4.59	0.11	0.79	3.80	2.46
Sep-25	0.100	3.310	0.331	10.27	3.40	0.13	0.93	2.46	2.56
Oct-25	0.070	3.310	0.232	10.27	2.38	0.10	0.72	1.66	2.43
Nov-25	0.040	3.310	0.132	10.27	1.36	0.06	0.43	0.93	2.20
Dec-25	0.030	3.310	0.099	0.00	0.00	0.05	0.00	0.00	1.93
totals			3.310		31.95	1.32	8.84	23.11	23.11

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Exposed Groundwater Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AI.4 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AI.3).

Totals

Month	(1) Total Net Volumetric Evaporative Loss Rate (unlagged) [acre-ft./mo.]	(2) Total Net Volumetric Evaporative Loss Rate (lagged) [acre-ft./mo.]	(3) Lagged Stream Depletion Factor [unitless]
Jan-25	0.00	3.09	0.07
Feb-25	1.58	2.73	0.06
Mar-25	1.92	2.69	0.06
Apr-25	3.49	2.76	0.06
May-25	4.75	3.03	0.07
Jun-25	7.46	3.48	0.08
Jul-25	7.92	4.15	0.09
Aug-25	7.23	4.67	0.11
Sep-25	4.68	4.86	0.11
Oct-25	3.15	4.61	0.11
Nov-25	1.77	4.19	0.10
Dec-25	0.00	3.68	0.08
totals	43.95	43.94	1.00

Notes:

(1) = Column (8) from Pond 1 + Column (8) from Pond 2 + Column (8) from Pond 3 + Column (8) from Pond 4

(2) = Column (9) from Pond 1 + Column (9) from Pond 2 + Column (9) from Pond 3 + Column (9) from Pond 4

(3) = Column (2) / Column (2) total

Pond 1

Area of Exposed Groundwater: *17.80* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]
Jan	0.030	3.390	0.102	0.00	0.00	0.04	0.00	0.00	0.77
Feb	0.035	3.390	0.119	17.80	2.11	0.05	0.62	1.49	1.00
Mar	0.055	3.390	0.186	17.80	3.32	0.12	1.50	1.82	1.43
Apr	0.090	3.390	0.305	17.80	5.43	0.17	2.12	3.31	2.26
May	0.120	3.390	0.407	17.80	7.24	0.22	2.74	4.50	3.33
June	0.145	3.390	0.492	17.80	8.75	0.14	1.74	7.01	5.00
Jul	0.150	3.390	0.509	17.80	9.05	0.13	1.62	7.43	6.26
Aug	0.135	3.390	0.458	17.80	8.15	0.11	1.37	6.78	6.59
Sep	0.100	3.390	0.339	17.80	6.03	0.13	1.62	4.41	5.68
Oct	0.070	3.390	0.237	17.80	4.22	0.10	1.25	2.97	4.37
Nov	0.040	3.390	0.136	17.80	2.41	0.06	0.75	1.66	3.08
Dec	0.030	3.390	0.102	0.00	0.00	0.05	0.00	0.00	1.64
totals			3.390		56.71	1.32	15.33	41.38	41.38

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 7 - Challenger Pond Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.5).

Pond 2

Area of Exposed Groundwater: *2.30* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]
Jan	0.030	3.390	0.102	0.00	0.00	0.04	0.00	0.00	0.10
Feb	0.035	3.390	0.119	2.30	0.27	0.05	0.08	0.19	0.13
Mar	0.055	3.390	0.186	2.30	0.43	0.12	0.19	0.24	0.19
Apr	0.090	3.390	0.305	2.30	0.70	0.17	0.27	0.43	0.30
May	0.120	3.390	0.407	2.30	0.94	0.22	0.35	0.59	0.44
June	0.145	3.390	0.492	2.30	1.13	0.14	0.23	0.90	0.65
Jul	0.150	3.390	0.509	2.30	1.17	0.13	0.21	0.96	0.81
Aug	0.135	3.390	0.458	2.30	1.05	0.11	0.18	0.87	0.85
Sep	0.100	3.390	0.339	2.30	0.78	0.13	0.21	0.57	0.73
Oct	0.070	3.390	0.237	2.30	0.55	0.10	0.16	0.39	0.56
Nov	0.040	3.390	0.136	2.30	0.31	0.06	0.10	0.21	0.39
Dec	0.030	3.390	0.102	0.00	0.00	0.05	0.00	0.00	0.21
totals			3.390		7.33	1.32	1.98	5.35	5.35

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 7 - Challenger Pond Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.5).

Pond 3

Area of Exposed Groundwater: *2.60* *acres*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Month	Monthly Distribution	Free Water Surface Evaporation	Gross Evaporation Rate	Surface Area	Gross Volumetric Evaporation Rate	Average Monthly Precip.	Effective Precip. Credit	Net Volumetric Evaporative Loss Rate (unlagged)	Net Volumetric Evaporative Loss Rate (lagged)	Total Net Volumetric Evaporative Loss Rate (lagged)	Lagged Stream Depletion Factor
		[ft./yr.]	[ft./mo.]	[acres]	[acre-ft./mo.]	[ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft]	[unitless]
Jan	0.030	3.390	0.102	0.00	0.00	0.04	0.00	0.00	0.08	0.94	0.02
Feb	0.035	3.390	0.119	2.60	0.31	0.05	0.09	0.22	0.16	1.30	0.02
Mar	0.055	3.390	0.186	2.60	0.48	0.12	0.22	0.26	0.22	1.84	0.03
Apr	0.090	3.390	0.305	2.60	0.79	0.17	0.31	0.48	0.37	2.92	0.06
May	0.120	3.390	0.407	2.60	1.06	0.22	0.40	0.66	0.54	4.30	0.08
June	0.145	3.390	0.492	2.60	1.28	0.14	0.25	1.03	0.82	6.46	0.12
Jul	0.150	3.390	0.509	2.60	1.32	0.13	0.24	1.08	0.97	8.03	0.15
Aug	0.135	3.390	0.458	2.60	1.19	0.11	0.20	0.99	0.97	8.41	0.16
Sep	0.100	3.390	0.339	2.60	0.88	0.13	0.24	0.64	0.78	7.18	0.14
Oct	0.070	3.390	0.237	2.60	0.62	0.10	0.18	0.44	0.58	5.51	0.10
Nov	0.040	3.390	0.136	2.60	0.35	0.06	0.11	0.24	0.39	3.86	0.07
Dec	0.030	3.390	0.102	0.00	0.00	0.05	0.00	0.00	0.17	2.01	0.04
totals			3.390		8.28	1.32	2.24	6.04	6.04	52.77	1.00

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. See Figure 2 - NOAA TR33 Class A Pan Evaporation.

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 7 - Challenger Pond Areas). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover.

(5) = Column (3) * Column (4).

(6) = From AII.1 Precipitation Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

(9) = Column (8) Lagged utilizing AWAS program (See AII.5).

(10) = Pond 1, Column (9) + Pond 2, Column (9) + Pond 3, Column (9).

EXHIBIT G-1

AI.6 Evaporative Loss Worksheet - Amen Aggregate Resource

2025

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Month	Monthly Distribution	Free Water Surface Evaporation [ft./yr.]	Gross Evaporation Rate [ft./mo.]	Surface Area [acres]	Gross Evaporation [acre-ft.]	Average Monthly Precip. [ft.]	Effective Precip. Credit [acre-ft.]	Net Evaporative Loss (unlagged) [acre-ft.]
Jan-25	0.030	3.667	0.110	0.00	0.00	0.04	0.00	0.00
Feb-25	0.035	3.667	0.128	1.01	0.13	0.05	0.04	0.09
Mar-25	0.055	3.667	0.202	1.01	0.20	0.12	0.08	0.12
Apr-25	0.090	3.667	0.330	1.14	0.38	0.17	0.14	0.24
May-25	0.120	3.667	0.440	1.14	0.50	0.22	0.18	0.32
Jun-25	0.145	3.667	0.532	1.14	0.61	0.14	0.11	0.50
Jul-25	0.150	3.667	0.550	1.26	0.69	0.13	0.11	0.58
Aug-25	0.135	3.667	0.495	1.26	0.62	0.11	0.10	0.52
Sep-25	0.100	3.667	0.367	1.26	0.46	0.13	0.11	0.35
Oct-25	0.070	3.667	0.257	1.38	0.35	0.10	0.10	0.25
Nov-25	0.040	3.667	0.147	1.38	0.20	0.06	0.06	0.14
Dec-25	0.030	3.667	0.110	1.38	0.15	0.05	0.05	0.10
totals	1.00				4.29	1.32	1.08	3.21

Notes:

(1) = SEO Monthly fraction of evaporation for elevations below 6500 ft from Guidelines for Substitute Water Supply Plans.

(2) = Free Water Surface Evaporation from NOAA Technical Report NWS 33 = Class A Pan Evaporation * Kp, where Kp = 1.0. = 40.4" = 3.667 ft/yr

(3) = Column (1) * Column (2).

(4) = Total Free Water Surface Area (see Figure 2 - Site Plan).

(5) = Column (3) * Column (4). For months where Mean Ave. Temp. <32, ice cover = 0.0 Evap.

(6) = From AI.5 Climate Data.

(7) = (Column (6) * 70%) * Column (4)

(8) = Column (5) -Column (7).

2025

Annual Extration = 350,000 tons

	(1)	(2)	(3)	(4)	(5)
Month	Monthly Fraction of Annual Extraction	Monthly Gravel Extraction	Monthly Volume of Water Extracted	Volume of Water Used for Dust Control	Total
		[tons]	[acre-ft.]	[acre-ft.]	[acre-ft.]
Jan-25	0.10	33,738	0.99	0.00	0.99
Feb-25	0.06	22,429	0.66	0.00	0.66
Mar-25	0.17	59,638	0.25	0.31	0.56
Apr-25	0.10	36,602	1.08	0.31	1.39
May-25	0.13	46,396	1.37	0.31	1.68
Jun-25	0.11	39,864	1.17	1.20	2.37
Jul-25	0.11	37,090	1.09	1.20	2.29
Aug-25	0.07	23,723	0.70	1.20	1.90
Sep-25	0.04	12,878	0.38	0.75	1.13
Oct-25	0.01	4,644	0.14	0.75	0.89
Nov-25	0.03	10,064	0.30	0.31	0.61
Dec-25	0.07	22,932	0.67	0.13	0.80
totals	1.00	350,000.00	8.80	6.48	15.27

Notes:

(1) = Monthly fraction of extraction
(2) = Column (1) x 400,000 tons
(3) =Column (2) x (2000 lbs/ton) x (0.04) x (1/62.4 ft^3/lbs) x (1/43,560 acre-ft/ft^3)
(4) = Monthly distribution of groundwater to be used for dust control
(5) = Totals

2025

Month	(1) Monthly Evaporative Loss [acre-ft]	(2) Monthly Volume of Mined & Dust Water [acre-ft]	(3) Total Unlagged Depletions [acre-ft]	(4) Total Lagged Depletions [acre-ft]
Jan-25	0.00	0.99	0.99	1.08
Feb-25	0.09	0.66	0.75	0.96
Mar-25	0.12	0.56	0.68	0.83
Apr-25	0.24	1.39	1.63	1.30
May-25	0.32	1.68	2.00	1.69
Jun-25	0.50	2.37	2.87	2.31
Jul-25	0.58	2.29	2.87	2.57
Aug-25	0.52	1.90	2.42	2.42
Sep-25	0.35	1.13	1.48	1.87
Oct-25	0.25	0.89	1.14	1.47
Nov-25	0.14	0.61	0.75	1.12
Dec-25	0.10	0.80	0.90	1.04
totals	**3.21**	**15.27**	**18.48**	**18.66**

Notes:

(1) = Columns (8) from AI.1

(2) = Columns (5) from AI.2

(3) = Sum of Columns (1-2)

(4) = Column (3) Lagged in Real Time with IDS AWAS (See AII.7)

EXHIBIT G-1

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

October 4, 2012

WEILAND, INC.
PETER WAYLAND
P.O. BOX 18087
BOULDER, CO 80308

RE: COMPACTED CLAY LINER APPROVAL
GARDELS WEST RESERVOIR (WDID 0403396)
GARDELS PIT, DRMS M-2005-033 (WDID 0403019)
S19-T5N-R68W, WATER DIVISION 1, WATER DISTRICT 4

Dear Peter:

The purpose of this letter is to approve the lining of the west mining cell of the Gardels Pit. This reservoir is located in the SESENW of Section 19, Township 5 North, Range 68 West of the 6th P.M. and is a part of the Gardels Pit (DRMS M-2005-033). This compacted clay liner leak test commenced June 15, 2012 and concluded on September 14, 2012. A site inspection was done by our office on October 2, 2012.

Your report dated October 1, 2012 provides the liner summary and leak test result. The test data provided indicates that **the reservoir has been lined to the design standard** referenced in the August 1999 State Engineer Guidelines for Lining Criteria for Gravel Pits (1999 SEO Guidelines). **Meeting the design standard requires that during reservoir operations all water inflows and outflows for the liner perimeter enclosed area be accounted for on a monthly basis.**

With this liner approval, the Gardels West Reservoir is now classified as a lined reservoir in accordance with the 1999 SEO Guidelines. Water shall not be impounded in the reservoir except pursuant to lawful diversions allowed by statute or decree. At all other times, all inflow of water into the reservoir from any source, including precipitation and ground water inflows shall be removed to prevent illegal storage of water. Prior to ANY use of this site, the owner or operator will need to coordinate with Jason Smith, District 4 Water Commissioner, to review operations, measurement structures, stage-storage curves, and accounting.

Please contact me at the number below if you have any questions.

Sincerely,

Jonathan M. Hernandez, P.E.
Water Resource Engineer

ec: Jason Smith, District 4 Water Commissioner (Jason.Smith2@state.co.us)
WDID File (0403396, 0403019)

EXHIBIT G-1

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF WATER RESOURCES

John W. Hickenlooper
Governor

Mike King
Executive Director

Dick Wolfe, P.E.
Director/State Engineer

David L. Nettles, P.E.
Division Engineer

October 4, 2012

WEILAND, INC.
PETER WAYLAND
P.O. BOX 18087
BOULDER, CO 80308

RE: COMPACTED CLAY LINER APPROVAL
BROWNWOOD SOUTH EAST RESERVOIR (WDID 0403398)
BROWNWOOD PIT, DRMS M-1979-059 (WDID 0403014)
S20-T5N-R68W, WATER DIVISION 1, WATER DISTRICT 4

Dear Peter:

The purpose of this letter is to approve the lining of the south east mining cell of the Brownwood Pit. This reservoir is located in the SWSW of Section 20, Township 5 North, Range 68 West of the 6th P.M. and is a part of the Brownwood Pit (DRMS M-1979-059). This compacted clay liner leak test commenced May 10, 2012 and concluded on August 9, 2012. A site inspection was done by our office on October 2, 2012.

Your report dated October 2, 2012 provides the liner summary and leak test result. The test data provided indicates that **the reservoir has been lined to the design standard** referenced in the August 1999 State Engineer Guidelines for Lining Criteria for Gravel Pits (1999 SEO Guidelines). **Meeting the design standard requires that during reservoir operations all water inflows and outflows for the liner perimeter enclosed area be accounted for on a monthly basis.**

With this liner approval, the Brownwood South East Reservoir is now classified as a lined reservoir in accordance with the 1999 SEO Guidelines. Water shall not be impounded in the reservoir except pursuant to lawful diversions allowed by statute or decree. At all other times, all inflow of water into the reservoir from any source, including precipitation and ground water inflows shall be removed to prevent illegal storage of water. Prior to ANY use of this site, the owner or operator will need to coordinate with Jason Smith, District 4 Water Commissioner, to review operations, measurement structures, stage-storage curves, and accounting.

Please contact me at the number below if you have any questions.

Sincerely,

Jonathan M. Hernandez, P.E.
Water Resource Engineer

ec: Jason Smith, District 4 Water Commissioner (Jason.Smith2@state.co.us)
WDID File (0403398, 0403014)

EXHIBIT G-1

APPENDIX II

Description: **LOVELAND NCWCD**

Time Series Identifier:	**USC00055236.NOAA.Precip.Month**	**Data Source:**	**NOAA**
Located in Water Division, District:	**1, 4**	**Measurement Type:**	**Precip**
Located in County, State:	**LARIMER, CO**	**Data Interval:**	**Monthly**
Located in HUC:	**10190006**	**Data Units:**	**IN**
Latitude, Longitude	**40.435000 , -105.085000**		
Elevation:	**5,079.99**		

Time Series Creation History:

Available Data: **1989 To 2017**
Selected Time Series From: **1989-01 To 2017-12**

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
1989	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	2.21	NC
1990	1.00	0.14	0.54	0.67	0.67	4.56	0.97	2.89	0.29	1.67	1.43	2.37	17.19
1991	0.49	0.73	0.58	0.45	0.03	0.25	0.83	2.04	2.06	3.05	1.47	1.12	13.10
1992	0.65	1.71	0.03	0.48	0.02	3.05	1.17	1.19	1.88	1.48	2.86	0.00	14.52
1993	0.17	1.11	0.30	0.38	0.84	1.43	2.14	1.12	2.55	1.04	0.95	2.70	14.71
1994	2.01	1.23	0.18	0.41	0.80	0.56	2.53	1.28	2.91	1.07	1.77	0.72	15.47
1995	0.81	0.69	0.44	0.21	0.94	0.69	3.16	6.80	3.44	0.82	0.18	1.84	20.02
1996	0.16	0.63	0.11	1.10	0.28	1.51	0.85	2.76	1.56	2.44	0.70	2.74	14.86
1997	0.48	0.72	0.09	0.91	0.77	0.67	3.26	2.57	2.61	1.98	3.11	2.24	19.41
1998	1.25	0.46	0.28	0.12	0.28	2.05	1.99	2.05	1.32	1.09	0.54	0.90	12.34
1999	3.43	0.89	NC	0.45	0.06	0.67	NC	1.83	2.26	1.70	1.85	1.57	NC
2000	1.05	0.72	0.16	0.09	0.28	1.11	0.71	1.50	1.22	0.89	0.60	1.85	10.17
2001	0.57	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2002	NC	NC	NC	NC	NC	NC	NC	NC	NC	0.29	0.47	1.95	NC
2003	0.94	0.61	0.01	0.01	0.97	3.92	2.54	2.63	2.99	0.76	1.58	0.31	17.26
2004	0.09	0.55	0.37	0.47	0.88	0.47	1.96	2.04	2.48	2.66	2.06	2.04	16.06
2005	1.34	1.78	0.21	1.07	0.51	0.78	3.20	2.26	2.61	0.53	0.92	0.37	15.58
2006	3.19	0.11	0.29	0.11	0.59	1.61	0.14	0.71	0.10	1.59	1.72	0.37	10.54
2007	2.22	0.62	1.01	1.03	0.39	1.67	1.96	1.55	0.25	1.15	1.87	1.58	15.28
2008	1.43	0.39	1.57	0.04	0.36	1.14	0.80	1.89	1.32	0.52	2.58	1.43	13.47
2009	0.63	0.07	0.68	0.58	0.26	1.31	4.92	2.02	2.32	2.14	1.34	1.16	17.42
2010	2.28	0.71	1.34	0.23	0.76	2.11	3.30	1.97	2.44	2.50	0.73	0.06	18.42
2011	0.54	0.76	0.33	0.46	0.84	0.29	2.30	4.63	1.67	2.31	0.16	1.64	15.91
2012	1.45	0.88	1.41	0.18	1.45	0.01	0.50	1.62	0.11	2.12	0.08	1.19	11.01
2013	0.81	0.49	0.33	0.08	1.04	1.26	3.22	3.24	1.44	1.32	1.11	6.63	20.96
2014	1.24	0.46	0.50	1.81	0.40	1.22	0.58	5.32	0.65	2.91	2.68	1.46	19.23
2015	0.92	1.04	0.81	0.30	1.57	0.37	2.74	6.44	2.66	1.19	1.02	0.05	19.10
2016	2.24	1.80	1.36	0.52	1.26	2.85	2.30	2.23	0.23	1.08	0.80	0.25	16.92
2017	0.46	0.24	0.72	0.91	0.46	0.67	2.42	4.11	0.39	0.44	1.91	1.86	14.59
2018	1.50	0.57	0.38	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC

Notes:

Years shown are water years.
A water year spans October of the previous calendar year to September of the current year (all within the indicated water year).
Annual values and statistics are computed only on non-missing data.
NC indicates that a value is not computed because of missing data or the data value itself is missing.

Description: **LOVELAND NCWCD**

Time Series Identifier:	**USC00055236.NOAA.Precip.Month**	**Data Source:**	**NOAA**
Located in Water Division, District:	**1, 4**	**Measurement Type:**	**Precip**
Located in County, State:	**LARIMER, CO**	**Data Interval:**	**Monthly**
Located in HUC:	**10190006**	**Data Units:**	**IN**
Latitude, Longitude	**40.435000 , -105.085000**		
Elevation:	**5,079.99**		

Time Series Creation History:

Available Data: **1989 To 2017**
Selected Time Series From: **1989-01 To 2017-12**

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Min:	0.09	0.07	0.01	0.01	0.02	0.01	0.14	0.71	0.10	0.29	0.08	0.00	10.17
Max:	3.43	1.80	1.57	1.81	1.57	4.56	4.92	6.80	3.44	3.05	3.11	6.63	20.96
Mean:	1.19	0.74	0.54	0.50	0.64	1.39	2.02	2.64	1.68	1.51	1.35	1.52	15.74

Notes:

Years shown are water years.
A water year spans October of the previous calendar year to September of the current year (all within the indicated water year).
Annual values and statistics are computed only on non-missing data.
NC indicates that a value is not computed because of missing data or the data value itself is missing.

Description: **LOVELAND NCWCD**

Time Series Identifier:	**USC00055236.NOAA.TempMean.Month**	**Data Source:**	**NOAA**
Located in Water Division, District:	**1, 4**	**Measurement Type:**	**MeanTemp**
Located in County, State:	**LARIMER, CO**	**Data Interval:**	**Monthly**
Located in HUC:	**10190006**	**Data Units:**	**F**
Latitude, Longitude	**40.435000 , -105.085000**		
Elevation:	**5,079.99**		

Time Series Creation History:

Available Data: **1989 To 2017**
Selected Time Series From: **1989-01 To 2017-12**

Water Year	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Average
1989	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	60.06	NC
1990	50.00	39.82	25.10	33.73	31.04	36.69	47.62	54.29	68.63	69.00	68.94	64.69	49.13
1991	49.82	41.16	22.05	23.76	38.08	41.54	46.61	57.87	66.30	70.41	69.35	60.78	48.98
1992	49.34	34.18	31.96	30.95	38.60	41.36	52.74	58.40	64.46	68.29	66.39	63.00	49.97
1993	51.89	32.05	24.13	24.15	27.60	41.61	46.54	57.76	63.58	69.29	66.97	57.42	46.92
1994	47.32	32.72	32.03	31.85	28.69	42.70	47.28	60.43	69.95	70.55	70.62	63.76	49.83
1995	49.63	35.89	33.30	31.23	35.26	40.52	44.25	50.59	62.75	70.39	73.61	60.59	49.00
1996	49.43	41.18	32.89	25.87	33.15	36.67	48.63	58.02	67.43	71.44	69.38	60.04	49.51
1997	50.76	36.38	33.23	25.49	31.47	41.90	41.99	57.33	66.89	71.65	69.14	63.73	49.16
1998	50.08	35.25	30.95	33.46	35.09	37.60	46.50	59.15	62.23	72.78	71.53	66.85	50.12
1999	49.89	42.77	NC	33.76	39.63	43.78	NC	55.24	64.63	73.18	70.74	58.59	NC
2000	50.46	44.64	35.80	33.08	39.31	41.41	51.30	60.82	66.61	75.05	73.19	63.19	52.91
2001	50.01	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
2004	NC	NC	NC	NC	29.99	45.01	47.45	59.35	62.02	69.19	66.71	60.88	NC
2005	49.87	36.83	30.55	30.94	34.74	39.23	46.44	55.33	65.30	73.77	69.33	62.41	49.56
2006	50.54	40.78	27.89	35.46	29.32	37.01	50.85	59.26	70.71	74.04	71.14	57.20	50.35
2007	48.42	38.25	26.85	19.51	28.49	44.17	45.74	57.29	66.45	75.10	72.97	62.96	48.85
2008	51.46	39.18	22.68	25.07	32.25	38.16	44.20	54.81	64.60	72.23	67.97	58.94	47.63
2009	48.48	41.09	24.08	30.87	35.58	39.54	44.56	57.21	62.62	68.55	66.75	60.67	48.33
2010	41.11	38.77	21.51	26.54	26.37	38.59	46.67	52.20	66.34	71.61	70.72	62.69	46.93
2011	52.16	36.51	32.57	26.42	25.78	41.21	46.45	51.18	65.65	73.70	73.45	61.45	48.88
2012	50.22	37.26	24.30	33.02	27.75	46.14	52.28	57.58	71.28	75.21	70.83	63.30	50.76
2013	47.07	38.46	28.96	26.88	27.89	35.64	40.52	55.90	67.99	71.66	71.13	64.12	48.02
2014	46.59	38.26	26.21	28.07	25.75	38.70	47.69	56.17	65.28	71.35	68.73	61.80	47.88
2015	52.66	33.57	30.27	30.97	33.11	41.86	48.14	51.89	68.05	71.09	70.81	65.96	49.87
2016	54.49	37.39	27.33	28.01	35.64	40.67	47.92	52.91	69.97	73.16	69.03	62.97	49.96
2017	54.89	43.60	24.38	27.30	39.40	45.72	47.89	54.60	67.55	73.34	68.29	62.32	50.77
2018	47.24	42.14	30.63	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
Min:	41.11	32.05	21.51	19.51	25.75	35.64	40.52	50.59	62.02	68.29	66.39	57.20	46.92
Max:	54.89	44.64	35.80	35.46	39.63	46.14	52.74	60.82	71.28	75.21	73.61	66.85	52.91
Mean:	49.76	38.33	28.32	29.02	32.40	40.70	47.09	56.22	66.29	71.84	69.91	61.94	49.27

Notes:

Years shown are water years.
A water year spans October of the previous calendar year to September of the current year (all within the indicated water year).
Annual values and statistics are computed only on non-missing data.
NC indicates that a value is not computed because of missing data or the data value itself is missing.

Report Date: 2018-01-16 **Refresh Date:** 2017-10-16

AII.2. Gardels IDS AWAS Model Output.

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	770	20,000.00	0.2	410.5

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep.
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0	0	0
2	0.0074	0.2878	0.2878
3	0.010	0.842	0.554
4	0.018	1.764	0.922
5	0.025	3.136	1.372
6	0.039	5.211	2.075
7	0.044	7.767	2.556
8	0.042	10.327	2.560
9	0.029	12.354	2.028
10	0.020	13.756	1.402
11	0.012	14.641	0.885
12	0.002	14.973	0.333
13	0.000	15.033	0.060
14	0.008	15.332	0.299
15	0.010	15.889	0.556
16	0.018	16.811	0.922
17	0.025	18.183	1.372
18	0.039	20.258	2.075
19	0.044	22.814	2.556
20	0.042	25.374	2.560
21	0.029	27.401	2.028
22	0.020	28.803	1.402
23	0.012	29.688	0.885
24	0.002	30.020	0.333
25	0.000	30.080	0.060
26	0.008	30.379	0.299
27	0.010	30.936	0.556
28	0.018	31.858	0.922
29	0.025	33.230	1.372
30	0.039	35.305	2.075
31	0.044	37.861	2.556
32	0.042	40.421	2.560
33	0.029	42.448	2.028
34	0.020	43.850	1.402
35	0.012	44.734	0.885
36	0.002	45.067	0.333

AII.2. Gardels IDS AWAS Model Output.

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	770	20,000.00	0.2	254.7

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep.
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0	0	0
2	0.0023	0.1059	0.1059
3	0.003	0.278	0.172
4	0.006	0.572	0.294
5	0.008	0.997	0.425
6	0.012	1.648	0.652
7	0.013	2.415	0.766
8	0.012	3.161	0.747
9	0.008	3.722	0.561
10	0.006	4.106	0.384
11	0.003	4.342	0.236
12	0.000	4.411	0.069
13	0.000	4.423	0.012
14	0.002	4.531	0.108
15	0.003	4.703	0.172
16	0.006	4.997	0.294
17	0.008	5.422	0.425
18	0.012	6.074	0.652
19	0.013	6.840	0.766
20	0.012	7.587	0.747
21	0.008	8.147	0.561
22	0.006	8.531	0.384
23	0.003	8.767	0.236
24	0.000	8.836	0.069
25	0.000	8.848	0.012
26	0.002	8.956	0.108
27	0.003	9.128	0.172
28	0.006	9.423	0.294
29	0.008	9.848	0.425
30	0.012	10.499	0.652
31	0.013	11.266	0.766
32	0.012	12.012	0.747
33	0.008	12.573	0.561
34	0.006	12.957	0.384
35	0.003	13.193	0.236
36	0.000	13.262	0.069

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,000	25,000.00	0.2	971

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.003	0.077	0.077
2	0.004	0.269	0.192
3	0.003	0.480	0.211
4	0.003	0.667	0.187
5	0.002	0.821	0.154
6	0.002	0.932	0.112
7	0.001	1.009	0.077
8	0.001	1.084	0.076
9	0.002	1.177	0.093
10	0.002	1.294	0.116
11	0.003	1.450	0.156
12	0.004	1.664	0.215
13	0.005	1.943	0.278
14	0.005	2.250	0.307
15	0.005	2.545	0.295
16	0.004	2.801	0.256
17	0.003	3.013	0.212
18	0.002	3.175	0.162
19	0.002	3.295	0.120
20	0.002	3.409	0.114
21	0.002	3.536	0.126
22	0.003	3.681	0.145
23	0.003	3.862	0.181
24	0.005	4.098	0.237
25	0.005	4.396	0.297
26	0.005	4.720	0.324
27	0.005	5.029	0.309
28	0.004	5.297	0.268
29	0.003	5.520	0.223
30	0.002	5.692	0.172
31	0.002	5.820	0.129
32	0.002	5.941	0.121
33	0.002	6.074	0.133
34	0.003	6.225	0.151
35	0.003	6.410	0.186
36	0.005	6.651	0.241
37	0.005	6.952	0.301
38	0.006	7.279	0.327
39	0.005	7.591	0.312
40	0.004	7.861	0.271
41	0.003	8.087	0.225

Brownwood 11.6 acre Pond

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	4,171	40,137.00	0.2	633

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.009	0.380	0.380
3	0.013	1.070	0.689
4	0.023	2.250	1.181
5	0.033	4.012	1.761
6	0.051	6.707	2.696
7	0.058	10.024	3.316
8	0.056	13.425	3.401
9	0.043	16.247	2.822
10	0.032	18.396	2.149
11	0.023	19.952	1.556
12	0.010	20.820	0.868
13	0.008	21.351	0.531
14	0.016	22.152	0.801
15	0.018	23.199	1.047
16	0.028	24.692	1.493
17	0.037	26.730	2.038
18	0.055	29.671	2.941
19	0.061	33.206	3.535
20	0.059	36.801	3.596
21	0.045	39.796	2.995
22	0.035	42.099	2.303
23	0.025	43.793	1.694
24	0.012	44.783	0.990
25	0.009	45.423	0.640
26	0.017	46.321	0.898
27	0.020	47.454	1.134
28	0.029	49.025	1.570
29	0.038	51.131	2.106
30	0.056	54.133	3.002
31	0.062	57.722	3.589
32	0.060	61.366	3.644
33	0.046	64.404	3.038
34	0.035	66.746	2.342
35	0.025	68.474	1.728
36	0.013	69.494	1.021
37	0.010	70.161	0.667
38	0.018	71.084	0.922
39	0.020	72.239	1.155
40	0.029	73.828	1.589
41	0.038	75.951	2.123

Brownwood 11.6 acre Pond

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	4,171	40,137.00	0.2	633

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.056	78.969	3.017
43	0.062	82.572	3.603
44	0.060	86.228	3.656
45	0.046	89.276	3.049
46	0.035	91.628	2.351
47	0.025	93.364	1.736
48	0.013	94.392	1.028
49	0.010	95.066	0.673
50	0.018	95.994	0.928
51	0.020	97.155	1.161
52	0.029	98.749	1.594
53	0.038	100.877	2.128
54	0.056	103.898	3.021
55	0.062	107.504	3.606
56	0.060	111.163	3.659
57	0.046	114.214	3.051
58	0.036	116.568	2.354
59	0.025	118.307	1.739
60	0.013	119.337	1.030
61	0.010	120.012	0.675
62	0.018	120.942	0.930
63	0.020	122.104	1.162
64	0.029	123.699	1.595
65	0.038	125.828	2.129
66	0.056	128.850	3.022
67	0.062	132.457	3.607
68	0.060	136.117	3.660
69	0.046	139.169	3.052
70	0.036	141.523	2.354
71	0.025	143.262	1.739
72	0.013	144.293	1.031

Brownwood 3.92 acre Pond

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,400	20,000.00	0.2	807

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.002	0.061	0.061
3	0.004	0.239	0.178
4	0.007	0.557	0.318
5	0.010	1.075	0.518
6	0.016	1.870	0.796
7	0.020	2.962	1.092
8	0.022	4.217	1.255
9	0.019	5.441	1.224
10	0.016	6.481	1.039
11	0.012	7.298	0.817
12	0.007	7.856	0.558
13	0.004	8.186	0.330
14	0.005	8.445	0.259
15	0.005	8.741	0.297
16	0.008	9.131	0.390
17	0.011	9.691	0.560
18	0.016	10.512	0.821
19	0.020	11.619	1.107
20	0.022	12.883	1.264
21	0.019	14.113	1.230
22	0.016	15.156	1.043
23	0.012	15.975	0.819
24	0.007	16.534	0.559
25	0.004	16.865	0.331
26	0.005	17.124	0.259
27	0.005	17.421	0.297
28	0.008	17.810	0.390
29	0.011	18.371	0.560
30	0.016	19.192	0.821
31	0.020	20.299	1.107
32	0.022	21.563	1.264
33	0.019	22.793	1.230
34	0.016	23.836	1.043
35	0.012	24.655	0.819
36	0.007	25.214	0.559

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,000	25,000.00	0.2	971

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.002	8.260	0.173
43	0.002	8.390	0.130
44	0.002	8.513	0.122
45	0.002	8.646	0.134
46	0.003	8.798	0.152
47	0.003	8.985	0.187
48	0.005	9.226	0.242
49	0.005	9.527	0.301
50	0.006	9.855	0.328
51	0.005	10.168	0.313
52	0.004	10.439	0.271
53	0.003	10.664	0.226
54	0.002	10.838	0.174
55	0.002	10.968	0.130
56	0.002	11.091	0.123
57	0.002	11.225	0.134
58	0.003	11.377	0.152
59	0.003	11.564	0.187
60	0.005	11.805	0.242

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,000	25,000.00	0.2	1,466

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.006	0.134	0.134
2	0.013	0.728	0.594
3	0.015	1.574	0.846
4	0.014	2.453	0.879
5	0.013	3.281	0.828
6	0.011	3.999	0.719
7	0.009	4.572	0.573
8	0.009	5.075	0.503
9	0.009	5.608	0.534
10	0.011	6.201	0.592
11	0.013	6.924	0.723
12	0.018	7.842	0.918
13	0.022	9.035	1.193
14	0.025	10.441	1.406
15	0.024	11.931	1.490
16	0.023	13.352	1.421
17	0.020	14.647	1.294
18	0.017	15.770	1.123
19	0.014	16.694	0.924
20	0.013	17.502	0.808
21	0.013	18.301	0.800
22	0.014	19.125	0.824
23	0.016	20.049	0.924
24	0.020	21.142	1.093
25	0.024	22.488	1.346
26	0.027	24.026	1.538
27	0.026	25.631	1.605
28	0.024	27.152	1.522
29	0.022	28.534	1.381
30	0.018	29.733	1.199
31	0.015	30.723	0.990
32	0.014	31.588	0.866
33	0.014	32.438	0.849
34	0.015	33.305	0.867
35	0.017	34.266	0.962
36	0.021	35.392	1.126
37	0.025	36.766	1.374
38	0.027	38.329	1.563
39	0.026	39.956	1.627
40	0.024	41.497	1.540
41	0.022	42.894	1.398

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,000	25,000.00	0.2	1,466

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.018	44.107	1.213
43	0.015	45.110	1.002
44	0.014	45.986	0.876
45	0.014	46.845	0.859
46	0.015	47.720	0.875
47	0.017	48.689	0.969
48	0.021	49.821	1.132

Pond 3

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3000	25,000.00	0.2	2,081

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.003	0.043	0.043
2	0.011	0.466	0.422
3	0.018	1.346	0.880
4	0.021	2.513	1.167
5	0.022	3.803	1.290
6	0.021	5.089	1.287
7	0.018	6.261	1.171
8	0.017	7.297	1.036
9	0.016	8.280	0.983
10	0.017	9.273	0.993
11	0.019	10.361	1.088
12	0.024	11.638	1.277
13	0.029	13.231	1.594
14	0.035	15.181	1.949
15	0.039	17.414	2.234
16	0.039	19.764	2.350
17	0.038	22.085	2.321
18	0.035	24.268	2.184
19	0.030	26.220	1.952
20	0.027	27.935	1.715
21	0.025	29.509	1.574
22	0.025	31.016	1.507
23	0.026	32.551	1.535
24	0.030	34.217	1.666

Pond 4

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3000	25,000.00	0.2	332

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.016	0.757	0.757
2	0.016	1.725	0.968
3	0.012	2.491	0.767
4	0.009	3.050	0.559
5	0.006	3.423	0.374
6	0.002	3.576	0.153
7	0.001	3.657	0.081
8	0.004	3.874	0.217
9	0.005	4.166	0.292
10	0.008	4.624	0.458
11	0.011	5.262	0.637
12	0.017	6.216	0.954
13	0.019	7.330	1.114
14	0.018	8.426	1.096
15	0.013	9.280	0.855
16	0.010	9.909	0.629
17	0.006	10.342	0.433
18	0.002	10.546	0.204
19	0.002	10.671	0.125
20	0.005	10.926	0.255
21	0.006	11.252	0.326
22	0.009	11.740	0.487
23	0.012	12.402	0.663
24	0.018	13.379	0.977

Sed Pond

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3000	25,000.00	0.2	588

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.001	0.025	0.025
2	0.001	0.069	0.044
3	0.001	0.108	0.039
4	0.001	0.139	0.031
5	0.000	0.160	0.021
6	0.000	0.171	0.011
7	0.000	0.178	0.007
8	0.000	0.187	0.009
9	0.000	0.198	0.011
10	0.000	0.217	0.018
11	0.001	0.244	0.027
12	0.001	0.286	0.042
13	0.001	0.338	0.052
14	0.001	0.394	0.056
15	0.001	0.441	0.047
16	0.001	0.478	0.037
17	0.000	0.504	0.026
18	0.000	0.520	0.016
19	0.000	0.531	0.011
20	0.000	0.544	0.013
21	0.000	0.558	0.014
22	0.000	0.579	0.021
23	0.001	0.609	0.030
24	0.001	0.653	0.044
25	0.001	0.707	0.054
26	0.001	0.764	0.057
27	0.001	0.812	0.048
28	0.001	0.850	0.038
29	0.000	0.877	0.027
30	0.000	0.894	0.017
31	0.000	0.906	0.012
32	0.000	0.920	0.013
33	0.000	0.934	0.015
34	0.000	0.956	0.022
35	0.001	0.986	0.030
36	0.001	1.031	0.045
37	0.001	1.085	0.054
38	0.001	1.142	0.057
39	0.001	1.191	0.049
40	0.001	1.229	0.038
41	0.000	1.256	0.027

Sed Pond

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3000	25,000.00	0.2	588

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.000	1.273	0.017
43	0.000	1.285	0.012
44	0.000	1.299	0.014
45	0.000	1.314	0.015
46	0.000	1.335	0.022
47	0.001	1.365	0.030
48	0.001	1.410	0.045
49	0.001	1.464	0.054
50	0.001	1.522	0.057
51	0.001	1.570	0.049
52	0.001	1.609	0.038
53	0.000	1.636	0.027
54	0.000	1.653	0.017
55	0.000	1.665	0.012
56	0.000	1.679	0.014
57	0.000	1.693	0.015
58	0.000	1.715	0.022
59	0.001	1.745	0.030
60	0.001	1.790	0.045

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,158

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.000	0.003	0.003
3	0.000	0.016	0.013
4	0.001	0.038	0.022
5	0.001	0.073	0.035
6	0.001	0.126	0.054
7	0.001	0.204	0.078
8	0.002	0.296	0.093
9	0.002	0.391	0.095
10	0.001	0.476	0.085
11	0.001	0.548	0.072
12	0.001	0.605	0.057
13	0.001	0.648	0.043
14	0.001	0.687	0.038
15	0.001	0.729	0.043
16	0.001	0.778	0.049
17	0.001	0.837	0.059
18	0.002	0.913	0.076
19	0.002	1.010	0.098
20	0.002	1.122	0.111
21	0.002	1.233	0.112
22	0.002	1.334	0.101
23	0.001	1.420	0.086
24	0.001	1.491	0.071
25	0.001	1.546	0.055
26	0.001	1.595	0.050
27	0.001	1.648	0.053
28	0.001	1.707	0.058
29	0.001	1.775	0.068
30	0.002	1.858	0.084
31	0.002	1.964	0.105
32	0.002	2.082	0.118
33	0.002	2.200	0.118
34	0.002	2.306	0.106
35	0.001	2.398	0.092
36	0.001	2.473	0.076
37	0.001	2.533	0.060
38	0.001	2.587	0.054
39	0.001	2.644	0.057
40	0.001	2.705	0.062
41	0.001	2.777	0.071

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,158

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.002	2.863	0.087
43	0.002	2.971	0.108
44	0.002	3.092	0.121
45	0.002	3.213	0.121
46	0.002	3.321	0.109
47	0.001	3.415	0.094
48	0.001	3.492	0.077
49	0.001	3.554	0.062
50	0.001	3.609	0.055
51	0.001	3.667	0.058
52	0.001	3.730	0.063
53	0.001	3.803	0.072
54	0.002	3.890	0.088
55	0.002	3.999	0.109
56	0.002	4.121	0.122
57	0.002	4.242	0.121
58	0.002	4.352	0.109
59	0.001	4.446	0.094
60	0.001	4.524	0.078
61	0.001	4.586	0.062
62	0.001	4.642	0.056
63	0.001	4.701	0.059
64	0.001	4.764	0.064
65	0.001	4.837	0.073
66	0.002	4.926	0.088
67	0.002	5.035	0.109
68	0.002	5.157	0.122
69	0.002	5.279	0.122
70	0.002	5.388	0.110
71	0.001	5.483	0.095
72	0.001	5.561	0.078
73	0.001	5.624	0.062
74	0.001	5.680	0.056
75	0.001	5.739	0.059
76	0.001	5.802	0.064
77	0.001	5.876	0.073
78	0.002	5.964	0.088
79	0.002	6.073	0.110
80	0.002	6.196	0.122
81	0.002	6.317	0.122
82	0.002	6.427	0.110

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,158

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
83	0.001	6.522	0.095
84	0.001	6.600	0.079

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,610

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.000	0.003	0.003
3	0.001	0.022	0.019
4	0.001	0.063	0.041
5	0.002	0.136	0.073
6	0.002	0.252	0.116
7	0.003	0.429	0.176
8	0.004	0.659	0.230
9	0.004	0.921	0.262
10	0.004	1.182	0.262
11	0.004	1.427	0.244
12	0.003	1.644	0.218
13	0.003	1.827	0.183
14	0.003	1.986	0.159
15	0.003	2.143	0.157
16	0.003	2.307	0.165
17	0.003	2.493	0.186
18	0.004	2.712	0.219
19	0.005	2.983	0.271
20	0.006	3.300	0.317
21	0.006	3.641	0.342
22	0.005	3.977	0.335
23	0.005	4.288	0.312
24	0.004	4.568	0.280
25	0.004	4.809	0.240
26	0.003	5.020	0.212
27	0.003	5.226	0.206
28	0.004	5.435	0.209
29	0.004	5.662	0.227
30	0.005	5.919	0.257
31	0.006	6.225	0.306
32	0.006	6.574	0.349
33	0.006	6.945	0.371
34	0.006	7.308	0.362
35	0.005	7.645	0.337
36	0.005	7.948	0.303
37	0.004	8.210	0.262
38	0.004	8.441	0.231
39	0.004	8.665	0.224
40	0.004	8.891	0.226
41	0.004	9.133	0.242

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,610

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.005	9.404	0.271
43	0.006	9.723	0.319
44	0.006	10.084	0.361
45	0.006	10.467	0.383
46	0.006	10.839	0.373
47	0.006	11.186	0.346
48	0.005	11.497	0.312
49	0.004	11.767	0.270
50	0.004	12.006	0.239
51	0.004	12.236	0.231
52	0.004	12.468	0.232
53	0.004	12.716	0.248
54	0.005	12.993	0.276
55	0.006	13.316	0.324
56	0.006	13.682	0.366
57	0.006	14.069	0.387
58	0.006	14.445	0.376
59	0.006	14.795	0.350
60	0.005	15.110	0.315
61	0.004	15.382	0.273
62	0.004	15.624	0.242
63	0.004	15.857	0.233
64	0.004	16.091	0.235
65	0.004	16.341	0.250
66	0.005	16.620	0.278
67	0.006	16.945	0.325
68	0.006	17.312	0.367
69	0.006	17.701	0.388
70	0.006	18.078	0.378
71	0.006	18.430	0.351
72	0.005	18.746	0.316
73	0.004	19.019	0.274
74	0.004	19.262	0.243
75	0.004	19.496	0.234
76	0.004	19.731	0.235
77	0.004	19.982	0.251
78	0.005	20.261	0.279
79	0.006	20.587	0.326
80	0.006	20.955	0.368
81	0.006	21.344	0.389
82	0.006	21.722	0.378

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3,500	20,115.00	0.2	1,610

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
83	0.006	22.074	0.352
84	0.005	22.390	0.317

Pond 3

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.001	0.021	0.021
3	0.003	0.137	0.116
4	0.005	0.363	0.226
5	0.008	0.759	0.396
6	0.013	1.380	0.621
7	0.018	2.303	0.923
8	0.021	3.468	1.165
9	0.021	4.745	1.278
10	0.019	5.972	1.227
11	0.017	7.080	1.108
12	0.014	8.031	0.951
13	0.012	8.798	0.767
14	0.011	9.461	0.663
15	0.012	10.136	0.675
16	0.013	10.862	0.726
17	0.015	11.711	0.849
18	0.019	12.747	1.035
19	0.024	14.049	1.302
20	0.026	15.563	1.514
21	0.026	17.161	1.599
22	0.024	18.684	1.522
23	0.022	20.064	1.380
24	0.018	21.265	1.201
25	0.015	22.263	0.998
26	0.014	23.138	0.875
27	0.015	24.008	0.871
28	0.016	24.915	0.906
29	0.018	25.930	1.015
30	0.022	27.118	1.188
31	0.026	28.561	1.443
32	0.028	30.204	1.643
33	0.028	31.922	1.718
34	0.026	33.554	1.632
35	0.023	35.035	1.481
36	0.020	36.330	1.295
37	0.017	37.413	1.084
38	0.016	38.367	0.954
39	0.016	39.311	0.943
40	0.017	40.284	0.973
41	0.019	41.361	1.077

Pond 3

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.023	42.606	1.245
43	0.027	44.101	1.495
44	0.029	45.792	1.692
45	0.029	47.555	1.763
46	0.027	49.228	1.673
47	0.024	50.747	1.519
48	0.020	52.076	1.329
49	0.017	53.192	1.115
50	0.016	54.175	0.983
51	0.016	55.145	0.971
52	0.017	56.144	0.998
53	0.019	57.244	1.100
54	0.023	58.510	1.266
55	0.027	60.024	1.515
56	0.029	61.734	1.709
57	0.029	63.513	1.779
58	0.027	65.201	1.688
59	0.024	66.734	1.533
60	0.020	68.076	1.342
61	0.017	69.203	1.127
62	0.016	70.197	0.994
63	0.016	71.178	0.981
64	0.017	72.186	1.008
65	0.020	73.294	1.108
66	0.023	74.568	1.274
67	0.027	76.090	1.522
68	0.029	77.806	1.716
69	0.029	79.591	1.785
70	0.027	81.285	1.694
71	0.024	82.823	1.538
72	0.020	84.170	1.347
73	0.017	85.302	1.132
74	0.016	86.300	0.998
75	0.016	87.284	0.984
76	0.018	88.295	1.011
77	0.020	89.407	1.112
78	0.023	90.684	1.277
79	0.027	92.209	1.525
80	0.030	93.927	1.719
81	0.029	95.715	1.788
82	0.027	97.411	1.696

Pond 3

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
83	0.024	98.951	1.540
84	0.021	100.299	1.349
85	0.017	101.433	1.133
86	0.016	102.433	1.000
87	0.016	103.418	0.986
88	0.018	104.430	1.012
89	0.020	105.543	1.113
90	0.023	106.821	1.278
91	0.027	108.347	1.526
92	0.030	110.066	1.720
93	0.029	111.855	1.788
94	0.027	113.551	1.697
95	0.024	115.092	1.541
96	0.021	116.442	1.349
97	0.017	117.576	1.134
98	0.016	118.576	1.000
99	0.016	119.562	0.986
100	0.018	120.575	1.013
101	0.020	121.688	1.113
102	0.023	122.967	1.278
103	0.027	124.493	1.526
104	0.030	126.213	1.720
105	0.029	128.001	1.789
106	0.027	129.698	1.697
107	0.024	131.239	1.541
108	0.021	132.589	1.350

Pond 4

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.000	0.000	0.000
2	0.002	0.030	0.030
3	0.004	0.196	0.166
4	0.007	0.521	0.325
5	0.012	1.090	0.569
6	0.018	1.980	0.890
7	0.025	3.301	1.320
8	0.030	4.967	1.666
9	0.030	6.795	1.828
10	0.028	8.549	1.755
11	0.025	10.134	1.585
12	0.020	11.495	1.360
13	0.017	12.592	1.097
14	0.016	13.540	0.948
15	0.016	14.506	0.966
16	0.019	15.547	1.041
17	0.022	16.764	1.217
18	0.028	18.246	1.482
19	0.034	20.110	1.864
20	0.038	22.276	2.166
21	0.037	24.562	2.287
22	0.035	26.739	2.177
23	0.031	28.714	1.974
24	0.026	30.432	1.719
25	0.022	31.860	1.427
26	0.021	33.111	1.252
27	0.021	34.357	1.246
28	0.023	35.656	1.298
29	0.026	37.110	1.455
30	0.031	38.811	1.701
31	0.037	40.876	2.065
32	0.041	43.227	2.351
33	0.040	45.684	2.457
34	0.037	48.019	2.334
35	0.033	50.138	2.119
36	0.028	51.990	1.852
37	0.024	53.540	1.550
38	0.022	54.905	1.365
39	0.023	56.255	1.350
40	0.024	57.649	1.394
41	0.027	59.192	1.543

Pond 4

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
42	0.033	60.974	1.782
43	0.038	63.114	2.140
44	0.042	65.534	2.420
45	0.041	68.055	2.521
46	0.038	70.448	2.393
47	0.034	72.621	2.173
48	0.029	74.522	1.902
49	0.024	76.118	1.596
50	0.023	77.525	1.407
51	0.023	78.913	1.389
52	0.025	80.343	1.430
53	0.028	81.919	1.576
54	0.033	83.732	1.812
55	0.039	85.899	2.168
56	0.042	88.345	2.446
57	0.041	90.890	2.545
58	0.038	93.304	2.415
59	0.034	95.497	2.193
60	0.029	97.417	1.920
61	0.025	99.030	1.613
62	0.023	100.452	1.422
63	0.023	101.856	1.403
64	0.025	103.299	1.443
65	0.028	104.887	1.588
66	0.033	106.711	1.824
67	0.039	108.889	2.178
68	0.042	111.344	2.455
69	0.042	113.897	2.553
70	0.038	116.320	2.423
71	0.034	118.520	2.201
72	0.029	120.447	1.927
73	0.025	122.066	1.619
74	0.023	123.495	1.428
75	0.024	124.903	1.409
76	0.025	126.351	1.448
77	0.028	127.944	1.593
78	0.033	129.772	1.828
79	0.039	131.954	2.182
80	0.042	134.412	2.459
81	0.042	136.969	2.557
82	0.039	139.395	2.426

Pond 4

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	3500	20,115.00	0.2	1,436

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
83	0.034	141.598	2.203
84	0.029	143.528	1.930
85	0.025	145.149	1.622
86	0.023	146.579	1.430
87	0.024	147.990	1.411
88	0.025	149.440	1.450
89	0.028	151.034	1.594
90	0.033	152.864	1.829
91	0.039	155.047	2.183
92	0.042	157.507	2.460
93	0.042	160.065	2.558
94	0.039	162.492	2.427
95	0.034	164.696	2.204
96	0.029	166.626	1.930
97	0.025	168.249	1.622
98	0.023	169.680	1.431
99	0.024	171.091	1.411
100	0.025	172.542	1.451
101	0.028	174.137	1.595
102	0.033	175.967	1.830
103	0.039	178.151	2.184
104	0.042	180.612	2.461
105	0.042	183.170	2.558
106	0.039	185.597	2.427
107	0.034	187.802	2.205
108	0.029	189.732	1.931

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,700	40,000.00	0.20	653

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.00	0.00	0.00
2	0.02	0.62	0.62
3	0.024	1.861	1.240
4	0.043	4.022	2.161
5	0.061	7.300	3.278
6	0.095	12.273	4.973
7	0.110	18.518	6.245
8	0.110	25.099	6.581
9	0.086	30.772	5.673
10	0.064	35.139	4.367
11	0.043	38.216	3.077
12	0.018	39.851	1.635
13	0.009	40.617	0.765
14	0.020	41.620	1.003
15	0.026	43.050	1.430
16	0.044	45.307	2.257
17	0.062	48.633	3.326
18	0.095	53.629	4.997
19	0.110	59.887	6.257
20	0.110	66.473	6.587
21	0.086	72.149	5.676
22	0.064	76.518	4.369
23	0.043	79.595	3.078
24	0.018	81.231	1.636
25	0.009	81.997	0.766
26	0.020	83.000	1.003
27	0.026	84.430	1.431
28	0.044	86.687	2.257
29	0.062	90.013	3.326
30	0.095	95.010	4.997
31	0.110	101.267	6.257
32	0.110	107.853	6.587
33	0.086	113.529	5.676
34	0.064	117.898	4.369
35	0.043	120.976	3.078
36	0.018	122.611	1.636
37.00	0.009	123.377	0.766
38.00	0.020	124.380	1.003
39.00	0.026	125.810	1.431
40.00	0.044	128.067	2.257
41.00	0.062	131.393	3.326
42.00	0.095	136.390	4.997
43.00	0.110	142.647	6.257
44.00	0.110	149.233	6.587

Pond 1

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,700	40,000.00	0.20	653

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
45.00	0.086	154.909	5.676
46.00	0.064	159.278	4.369
47.00	0.043	162.356	3.078
48.00	0.018	163.991	1.636
49.00	0.009	164.757	0.766
50.00	0.020	165.760	1.003
51.00	0.026	167.190	1.431
52.00	0.044	169.447	2.257
53.00	0.062	172.773	3.326
54.00	0.095	177.770	4.997
55.00	0.110	184.027	6.257
56.00	0.110	190.613	6.587
57.00	0.086	196.289	5.676
58.00	0.064	200.658	4.369
59.00	0.043	203.736	3.078
60.00	0.018	205.371	1.636

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,700	40,000.00	0.20	641

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.00	0.00	0.00
2	0.00	0.08	0.08
3	0.003	0.243	0.163
4	0.006	0.527	0.284
5	0.008	0.957	0.431
6	0.012	1.604	0.647
7	0.014	2.413	0.809
8	0.014	3.261	0.848
9	0.011	3.991	0.729
10	0.008	4.554	0.564
11	0.006	4.949	0.395
12	0.002	5.156	0.208
13	0.001	5.253	0.097
14	0.003	5.382	0.129
15	0.003	5.569	0.187
16	0.006	5.865	0.296
17	0.008	6.301	0.437
18	0.012	6.951	0.650
19	0.014	7.762	0.810
20	0.014	8.611	0.849
21	0.011	9.340	0.730
22	0.008	9.904	0.564
23	0.006	10.299	0.395
24	0.002	10.506	0.208
25	0.001	10.603	0.097
26	0.003	10.732	0.129
27	0.003	10.919	0.187
28	0.006	11.214	0.296
29	0.008	11.651	0.437
30	0.012	12.301	0.650
31	0.014	13.112	0.810
32	0.014	13.961	0.849
33	0.011	14.690	0.730
34	0.008	15.254	0.564
35	0.006	15.649	0.395
36	0.002	15.856	0.208
37	0.001	15.953	0.097
38	0.003	16.082	0.129
39	0.003	16.269	0.187
40	0.006	16.564	0.296
41	0.008	17.001	0.437
42	0.012	17.651	0.650
43	0.014	18.461	0.810
44	0.014	19.310	0.849

Pond 2

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,700	40,000.00	0.20	641

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
45	0.011	20.040	0.730
46	0.008	20.604	0.564
47	0.006	20.999	0.395
48	0.002	21.206	0.208
49	0.001	21.303	0.097
50	0.003	21.432	0.129
51	0.003	21.619	0.187
52	0.006	21.914	0.296
53	0.008	22.351	0.437
54	0.012	23.001	0.650
55	0.014	23.811	0.810
56	0.014	24.660	0.849
57	0.011	25.390	0.730
58	0.008	25.954	0.564
59	0.006	26.348	0.395
60	0.002	26.556	0.208

Pond 3

Boundary Condition	Dist. To Alluvial Boundary	Transmissivity	Specific Yield	X to Well
	[ft.]	[g.p.d./ft.]	[nd]	[ft.]
Alluvial Aquifer	1,700	40,000.00	0.20	424

Time	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
[month]	[c.f.s.]	[acre-ft.]	[acre-ft.]
1	0.00	0.00	0.00
2	0.00	0.13	0.13
3	0.004	0.331	0.204
4	0.007	0.691	0.360
5	0.010	1.222	0.532
6	0.015	2.037	0.815
7	0.017	3.002	0.965
8	0.016	3.975	0.973
9	0.012	4.753	0.777
10	0.009	5.333	0.581
11	0.006	5.721	0.388
12	0.002	5.890	0.169
13	0.001	5.965	0.075
14	0.003	6.129	0.164
15	0.004	6.352	0.223
16	0.007	6.721	0.369
17	0.010	7.257	0.536
18	0.015	8.075	0.817
19	0.017	9.041	0.966
20	0.016	10.015	0.974
21	0.012	10.792	0.778
22	0.009	11.373	0.581
23	0.006	11.761	0.388
24	0.002	11.930	0.169
25	0.001	12.005	0.075
26	0.003	12.169	0.164
27	0.004	12.392	0.223
28	0.007	12.761	0.369
29	0.010	13.297	0.536
30	0.015	14.115	0.817
31	0.017	15.081	0.966
32	0.016	16.054	0.974
33	0.012	16.832	0.778
34	0.009	17.413	0.581
35	0.006	17.801	0.388
36	0.002	17.970	0.169
37	0.001	18.045	0.075
38	0.003	18.209	0.164
39	0.004	18.432	0.223
40	0.007	18.801	0.369
41	0.010	19.337	0.536
42	0.015	20.154	0.817
43	0.017	21.121	0.966
44	0.016	22.094	0.974

AII.7. Amen Aggregate Resource IDS AWAS Model Output

EXHIBIT C-1

Boundary = Alluvial Aquifer
Distance to Boundary = 445.9 ft
Transmissivity = 40,000 gal/day/ft
Specific Yield=0.2
Average Distance to Well=2,180 ft

Month	Dep. Rate	Vol. of Dep.	Vol. of Dep. This Step
	[c.f.s.]	[acre-ft.]	[acre-ft.]
Jan-23	0.00	23.56	0.08
Feb-23	0.00	23.61	0.06
Mar-23	0.01	23.99	0.38
Apr-23	0.02	24.91	0.92
May-23	0.02	26.14	1.23
Jun-23	0.04	28.26	2.12
Jul-23	0.04	30.81	2.55
Aug-23	0.04	33.45	2.64
Sep-23	0.03	35.61	2.16
Oct-23	0.03	37.57	1.97
Nov-23	0.02	39.02	1.44
Dec-23	0.01	39.87	0.86
Jan-24	0.02	40.88	1.00
Feb-24	0.01	41.81	0.94
Mar-24	0.01	42.66	0.85
Apr-24	0.03	44.13	1.47
May-24	0.03	46.09	1.96
Jun-24	0.05	48.82	2.73
Jul-24	0.05	52.00	3.19
Aug-24	0.05	55.07	3.06
Sep-24	0.04	57.40	2.34
Oct-24	0.03	59.30	1.89
Nov-24	0.02	60.71	1.41
Dec-24	0.02	61.98	1.27
Jan-25	0.02	44.19	1.08
Feb-25	0.01	45.15	0.96
Mar-25	0.01	45.98	0.83
Apr-25	0.02	47.28	1.30
May-25	0.03	48.97	1.69
Jun-25	0.04	51.28	2.31
Jul-25	0.04	53.85	2.57
Aug-25	0.04	56.27	2.42
Sep-25	0.03	58.14	1.87
Oct-25	0.02	59.61	1.47
Nov-25	0.02	60.73	1.12
Dec-25	0.02	61.77	1.04

EXHIBIT G-1

APPENDIX III

EXHIBIT G-1

AIII.1 BTD HCU Credit and Return Flow based on 02CW392.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	1920 -1979 Ave. Farm Headgate Delivery per share	HCU per share	Return Flow Factor	Average Return Flow Per Share	Farm Headgate Delivery 0.318 Share	HCU 0.318 Share	Average Return Flow Per 0.318 Share
	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]
Jan	0.000	0.00	1.70%	2.92	0.00	0.00	0.93
Feb	0.000	0.00	1.40%	2.41	0.00	0.00	0.76
Mar	0.000	0.00	1.10%	1.89	0.00	0.00	0.60
Apr	0.000	0.00	0.60%	1.03	0.00	0.00	0.33
May	20.388	10.89	38.00%	7.75	6.48	3.46	2.46
Jun	40.458	21.61	32.70%	13.23	12.87	6.87	4.21
Jul	52.963	28.29	31.20%	16.52	16.84	9.00	5.25
Aug	40.352	21.56	37.90%	15.29	12.83	6.86	4.86
Sept	17.637	9.42	61.80%	10.90	5.61	3.00	3.47
Oct	0.000	0.00	0.10%	0.17	0.00	0.00	0.05
Nov	0.000	0.00	2.50%	4.29	0.00	0.00	1.37
Dec	0.000	0.00	2.00%	3.44	0.00	0.00	1.09
	171.80	91.78		79.84	54.63	29.19	25.39

(1) = (Row (1) from Table 9 of Spronk 09') / (20.792 shares)

(2) = (Column (1) Montly value / total) x 91.78

(3) = Rows 4 and 5 from Table 10 of Spronk Rebuttal (12/1/09)

(4) = Irrigation Season Returns = % of Monthly Farm Headgate Diversions, Non-Irrigation = % of Annual Farm Headgate Diversions

(5) = Column (1) x 0.318

(6) = Column (2) x 0.318

(7) = Column (4) x 0.318

AIII.2 HCU Credit and Return Flow based Weiss HCU.

	(1)	(2)	(3)	(4)
	1955 -1986 Ave. Farm Headgate Delivery 19 Shares	HCU for 19 Shares	Return Flows for 19 Shares	Return Flow Factors
	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]	[acre-ft./mo.]
Jan	0.000	0.00	0.82	0.32%
Feb	0.000	0.00	0.45	0.18%
Mar	0.000	0.00	0.24	0.09%
Apr	0.000	0.00	0.13	0.05%
May	24.990	11.83	9.47	37.90%
Jun	71.620	34.07	28.77	40.17%
Jul	94.710	44.41	42.27	44.63%
Aug	51.270	25.50	28.62	55.82%
Sept	10.580	4.56	12.84	121.36%
Oct	0.000	0.00	5.71	2.26%
Nov	0.000	0.00	2.81	1.11%
Dec	0.000	0.00	1.52	0.60%
	253.17	120.37	133.65	

(1) = Column (4) Table 5 from Weiss HCU. Note Oct set to 0
(2) = Column (5) Table 5 from Weiss HCU. Note Oct set to 0
(3) = Column (7) Table 5 from Weiss HCU. Note Oct set to 0
(4) = Column (7) Table 5 from Weiss HCU. Note Oct set to 0
(5) = Column (1) * (11/19)
(6) = Column (2) * (11/19)
(7) = Column (4) * (11/19)

EXHIBIT G-1

APPENDIX IV

Upstream Sites

Month	(1) Average Historical BTDM **Surface Water Supply** (0.318 share)	(2) **Total** BTD & MFG HCU Credits Available	(3) **HCU factor**	(4) **Gardels** Total Net Evaporative Loss	(5) **Brownwood** Total Net Evaporative Loss	(6) **Total** Net Evaporative Loss	(7) **Total** BTDM **HCU Credits** Applied	(8) **Total BTDM Surface Water Deliveries**	(9) **Return Flow** Factor	(10) **Total BTDM Return Flow** Obligation	(11) Total **Remaining** Losses / Replacement Requirement
	[acre-ft./mo.]	[acre-ft./mo.]	[%]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[%]	[acre-ft.]	[acre-ft.]
Jan-25	0.00	0.00	0.00%	0.07	1.01	1.08	0.00	0.00	1.70%	0.89	1.97
Feb-25	0.00	0.00	0.00%	0.41	1.19	1.60	0.00	0.00	1.40%	0.73	2.33
Mar-25	0.00	0.00	0.00%	0.73	1.46	2.19	0.00	0.00	1.10%	0.57	2.76
Apr-25	0.00	0.00	0.00%	1.22	1.99	3.20	0.00	0.00	0.60%	0.31	3.51
May-25	6.48	3.46	53.42%	1.80	2.69	4.49	3.46	6.48	38.00%	2.46	1.02
Jun-25	12.87	6.87	53.42%	2.73	3.84	6.57	6.57	12.30	32.70%	4.02	0.00
Jul-25	16.84	9.00	53.42%	3.32	4.71	8.04	8.04	15.04	31.20%	4.69	0.00
Aug-25	12.83	6.86	53.42%	3.31	4.92	8.23	6.86	12.83	37.90%	4.86	1.38
Sep-25	5.61	3.00	53.42%	2.59	4.28	6.87	3.00	5.61	61.80%	3.47	3.87
Oct-25	0.00	0.00	0.00%	1.79	3.40	5.18	0.00	0.00	0.10%	0.05	5.24
Nov-25	0.00	0.00	0.00%	1.12	2.56	3.68	0.00	0.00	2.50%	1.31	4.99
Dec-25	0.00	0.00	0.00%	0.40	1.59	1.99	0.00	0.00	2.00%	1.05	3.04
totals	54.63	29.19		19.47	33.64	53.11	27.92	52.26		24.42	30.10

Notes:

(1) = Column (1) from **AII.1** BTD&M HCU Credit and Return Flow based on 02CW392

(2) = Column (2) from **AII.1** BTD&M HCU Credit and Return Flow based on 02CW392

(3) = Column (2)/ Column (1)

(4) = Column (10) from **AI.1. Evaporative Loss Worksheet – Gardels Pit**

(5) = Column (10) from **AI.2. Evaporative Loss Worksheet – Brownwood Pit**

(6) = Column (4) + Column (5)

(7) = IF(Column (6) > Column (2)), THEN = Column (2), IF(Column (6) < Column (2)), THEN = Column (6)

(8) = Column (7)/Column (3).

(9) = Column (3) from **AII.1** BTD&M HCU Credit and Return Flow based on 02CW392

(10) For Sept-April = Previous 12 month total Column (8) * Column (9). For or May-Sept = Column (8) * Column (9)

(11) = If Month = (Jan, Feb, Mar, Apr, Oct, Nov, Dec) = (Column (6) - Column (7) + Column (10)), Else = (Column (6) - Column (7))

Downstream Sites

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Month	Ave Historical Hill & Brush **Farm HG Delivery 1955-1986 (11 shares)**	**Total** Hill & Brush **HCU Credits** Available **(11 shares)**	**HCU factor**	**Bonser** Total Net Evaporative Loss	**Bonser First Fill and Pump Shutdown**	**Kirtright** Total Net Evaporative Loss	**Amen** Total Mining & Evaporative Losses	**Challenger** Total Net Evaporative Loss	**Total** Net Evaporative Loss	**Total** Hill & Brush **HCU Credits** Applied	**Total Hill & Brush Surface Water Deliveries**	**Return Flow** Factor	**Total** Hill & Brush **Return Flow** Obligation	Total **Remaining Losses**	Total Remaining Loss + Conveyance Loss / **Replacement Requirement**
	[acre-ft.]	[acre-ft.]	[%]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[%]	[acre-ft.]	[acre-ft.]	
Jan-25	0.00	0.00	0%	3.45	0.00	3.09	1.08	0.94	8.56	0.00	0.00	0.32%	0.41	8.97	9.08
Feb-25	0.00	0.00	0%	3.19	0.00	2.73	0.96	1.30	8.18	0.00	0.00	0.18%	0.22	8.40	8.51
Mar-25	0.00	0.00	0%	3.10	0.00	2.69	0.83	1.84	8.46	0.00	0.00	0.09%	0.12	8.58	8.70
Apr-25	0.00	0.00	0%	3.23	0.00	2.76	1.30	2.92	10.21	0.00	0.00	0.05%	0.06	10.28	10.43
May-25	14.47	6.85	47%	3.58	0.00	3.03	1.69	4.30	12.60	6.85	14.47	37.90%	5.48	5.75	5.84
Jun-25	41.46	19.72	48%	4.28	0.00	3.48	2.31	6.47	16.53	16.53	34.74	40.17%	13.96	0.00	0.00
Jul-25	54.83	25.71	47%	4.65	0.00	4.15	2.57	8.04	19.40	19.40	41.37	44.63%	18.46	0.00	0.00
Aug-25	29.68	14.76	50%	5.24	0.00	4.67	2.42	8.41	20.75	14.76	29.68	55.82%	16.57	5.99	6.09
Sep-25	6.13	2.64	43%	5.36	0.00	4.86	1.87	7.19	19.27	2.64	6.13	121.36%	7.43	16.63	16.89
Oct-25	0.00	0.00	0%	5.12	0.00	4.61	1.47	5.52	16.72	0.00	0.00	2.26%	2.85	19.57	19.86
Nov-25	0.00	0.00	0%	4.68	0.00	4.19	1.12	3.86	13.85	0.00	0.00	1.11%	1.40	15.26	15.47
Dec-25	0.00	0.00	0%	4.05	0.00	3.68	1.04	2.01	10.78	0.00	0.00	0.60%	0.76	11.54	11.69
totals	146.57	69.69		49.92	0.00	43.94	18.66	52.79	165.31	60.18	126.39		67.74	110.97	112.54

Notes:

(1) = Column (4) Table 5 from Weiss HCU. Note Oct set to 0

(2) = Column (5) Table 5 from Weiss HCU. Note Oct set to 0

(3) = Column (2)/Column (1)

(4) = Sum of Column (9) from **AI.3 Evaporative Loss Worksheet – Bonser Pit**

(5) = Place Marker for Potential Future Shutdown

(6) = Column (2) page 4 from **AI.4. Evaporative Loss Worksheet – Kirtright Pit**

(7) = Column (4) from **AI.8. Total Net Water Loss / Replacement - Amen Aggregate Resource**

(8) = Column (9) from **AI.5. Evaporative Loss Worksheet – Challenger Pit**

(9) = Column (4) + Column (5) + Column (6) + Column (7) + Column (8)

(10) = IF(Column (9) > Column (2)), THEN = Column (2), IF(Column (9) < Column (2)), THEN = Column (9)

(11) = Column (10)/Column (3)

(12) For May-Sept Monthly values of (Runoff + Retrun Flow) from Table 5 Weiss HCU / Monthly Farm Delivery value.

(13) For Sept-April = Previous 12 month total Column (11) / (Retrun Flows). For May-Sept. Monthly Farm Delivery/(Runoff + Return Flows)

(14) = If Month = (Jan, Feb, Mar, Apr, Oct, Nov, Dec) = (Column (9) - Column (10) + Column (13)), Else = (Column (9) - Column (10))

(15) = Column (14) + 0.25% per mile weighted for each site where the weight is the Monthly Evap. for the Site / Monthly Total Value in Column (9)

Site	Distance [mi.]	Conveyance Loss
Bonser	3.12	0.78%
Kirtright	4.07	1.02%
Amen	8.44	2.11%
Challenger	9.41	2.35%

Replacements

Month	(1) **Brownwood, Gardels** Replacement Requirement [acre-ft.]	(2) **Bonser, Kirtright, Amen, Challenger** Replacement Requirement [acre-ft.]	(3) Total Replacement Requirement [acre-ft.]	(4) Total **City of Loveland** Replacements [acre-ft.]	(5) **Brownwood SE** Replacements [acre-ft.]	(6) **BTDM Direct Return Flow** Requirement [acre-ft.]	(7) **Hill & Brush Direct Return Flow** Requirement [acre-ft.]
Jan-25	1.97	9.08	11.05	11.05	0.00	0.00	0.00
Feb-25	2.33	8.51	10.83	10.83	0.00	0.00	0.00
Mar-25	2.76	8.70	11.46	11.46	0.00	0.00	0.00
Apr-25	3.51	10.43	13.94	13.94	0.00	0.00	0.00
May-25	1.02	5.84	6.86	6.86	0.00	2.46	5.48
Jun-25	0.00	0.00	0.00	0.00	0.00	4.02	13.96
Jul-25	0.00	0.00	0.00	0.00	0.00	4.69	18.46
Aug-25	1.38	6.09	7.46	7.46	0.00	4.86	16.57
Sep-25	3.87	16.89	20.76	20.76	0.00	3.47	7.43
Oct-25	5.24	19.86	25.09	25.09	0.00	0.00	1.21
Nov-25	4.99	15.47	20.45	20.45	0.00	0.00	0.00
Dec-25	3.04	11.69	14.73	14.73	0.00	0.00	0.00
totals	30.10	112.54	142.64	142.64	0.00	19.51	63.12

Notes:

(1) = Column (9) from Upstream Sites
(2) = Column (11) from Downstream sites
(3) = Column (1) + Column (2)
(4) = Total deliveries at City of Loveland's WWTP located at 920 S. Boise Ave. Loveland, CO
(5) = Deliveries from Brownwood Reservoir SE
(6) = BTDM Direct Return Flow requirement at the Brownwood Return Flow Structure
(7) = Hill & Brush Direct Return Flow requirement at the Brownwood Return Flow Structure

EXHIBIT G-1

APPENDIX V

AV.1 Monthly Accounting Sheet - Gardels Pit

MONTHLY WATER ACCOUNTING WORKSHEET
Gardels Pit M-2005-033 WDID 0402547

Month	(1) Gross Evaporation Rate	(2) Exposed Groundwater Area	(3) Gross Volumetric Evaporation Rate	(4) Average Monthly Precip.	(5) Average Effective Monthly Precip.	(6) Average Monthly Precip. Volumetric Rate Credit	(7) Net Volumetric Evaporation Rate	(8) Lagged Stream Depletion Factor	(9) Net Lagged Volumetric Evaporation Rate
	[ft./mo.]	[acres]	[acre-ft/mo.]	[ft./mo.]	[ft./mo.]	[acre-ft/mo.]	[acre-ft/mo.]	[1]	[acre-ft]
January	0.10	*0.00*	0.00	0.04	0.03	0.00	0.00	0.00	0.03
February	0.11	*8.80*	1.01	0.05	0.04	0.31	0.70	0.02	0.18
March	0.18	*8.80*	1.58	0.12	0.08	0.74	0.84	0.04	0.32
April	0.29	*8.80*	2.59	0.17	0.12	1.05	1.54	0.06	0.53
May	0.39	*8.80*	3.45	0.22	0.15	1.36	2.10	0.09	0.78
June	0.47	*8.80*	4.17	0.14	0.10	0.86	3.31	0.14	1.19
July	0.49								
August	0.44								
September	0.33								
October	0.23								
November	0.13								
December	0.10								
Annual Total	3.27		12.81	1.32	0.52	4.31	8.49	0.36	3.03

Notes:

(1) = (Monthly fraction of evaporation) for elevations below 6500 ft per SEO guidelines X (39.24 inches per year) Gross free water surface evaporation from NOAA Technical Report NWS 33

(2) = Sum of pond 1 & pond 2 surface areas.

(3) = Column (1) X Column (2). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(4) = Monthly average precipitation (1989-2017) as recorded at NCWCD Loveland

(5) = Column (4) X .70

(6) = Column (5) X Column (2)

(7) = Column (3) - Column (6)

(8) = Lagged stream depletion factor fraction as detrrmined by IDS AWAS.

(9) = The annual total of Column (7) X Column (8)

AV.2 Monthly Accounting Sheet - Brownwood Pit

MONTHLY WATER ACCOUNTING WORKSHEET

Brownwood Pit M-1986-122

Month	(1) Gross Evaporation Rate	(2) Exposed Groundwater Area	(3) Gross Volumetric Evaporation Rate	(4) Average Monthly Precip.	(5) Average Effective Monthly Precip.	(6) Average Monthly Precip. Volumetric Rate Credit	(7) Net Volumetric Evaporation Rate	(8) Lagged Stream Depletion Factor	(9) Net Lagged Volumetric Evaporation Rate
	[ft./mo.]	[acres]	[acre-ft/mo.]	[ft./mo.]	[ft./mo.]	[acre-ft/mo.]	[acre-ft/mo.]	[1]	[acre-ft]
January	0.10	*0.00*	0.00	0.04	0.03	0.00	0.00	0.03	1.02
February	0.11	*15.52*	1.78	0.05	0.04	0.54	1.23	0.04	1.21
March	0.18	*15.52*	2.79	0.12	0.08	1.30	1.49	0.05	1.49
April	0.29	*15.52*	4.57	0.17	0.12	1.85	2.72	0.06	2.03
May	0.39	*15.52*	6.09	0.22	0.15	2.39	3.70	0.09	2.75
June	0.47	*15.52*	7.36	0.14	0.10	1.52	5.84	0.12	3.93
July	0.49								
August	0.44								
September	0.33								
October	0.23								
November	0.13								
December	0.10								
Annual Total	3.27		22.58	1.32	0.52	7.60	14.98	1.00	34.34

Notes:

(1) = (Monthly fraction of evaporation) for elevations below 6500 ft per SEO guidelines X (39.24 inches per year) Gross free water surface evaporation from NOAA Technical Report NWS 33

(2) = Sum of pond 1 & pond 2 surface areas.

(3) = Column (1) X Column (2). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(4) = Monthly average precipitation (1989-2017) as recorded at NCWCD Loveland

(5) = Column (4) X .70

(6) = Column (5) X Column (2)

(7) = Column (3) - Column (6)

(8) = Lagged stream depletion factor fraction as detrrmined by IDS AWAS.

(9) = The annual total of Column (7) X Column (8)

AV.3 Monthly Accounting Sheet - Bonser Pit

MONTHLY WATER ACCOUNTING WORKSHEET

Bonser Pit M-2000-156

Month	(1) Gross Evaporation Rate	(2) Exposed Groundwater Area	(3) Gross Volumetric Evaporation Rate	(4) Average Monthly Precip.	(5) Average Effective Monthly Precip.	(6) Average Monthly Precip. Volumetric Rate Credit	(7) Net Volumetric Evaporation Rate	(8) Lagged Stream Depletion Factor	(9) Net Lagged Volumetric Evaporation Rate
	[ft./mo.]	[acres]	[acre-ft/mo.]	[ft./mo.]	[ft./mo.]	[acre-ft/mo.]	[acre-ft/mo.]	[1]	[acre-ft]
January	0.10	*0.00*	0.00	0.04	0.03	0.00	0.00	0.17	3.45
February	0.12	*22.18*	2.57	0.05	0.04	0.78	1.80	0.15	3.19
March	0.18	*22.18*	4.04	0.12	0.08	1.86	2.17	0.15	3.10
April	0.30	*22.18*	6.61	0.17	0.12	2.64	3.96	0.16	3.23
May	0.40	*22.18*	8.81	0.22	0.15	3.42	5.39	0.17	3.58
June	0.48	*22.18*	10.65	0.14	0.10	2.17	8.47	0.21	4.28
July	0.50								
August	0.45								
September	0.33								
October	0.23								
November	0.13								
December	0.10								
Annual Total	3.31		32.67	1.32	0.52	10.87	21.79	1.00	20.82

Notes:

(1) = (Monthly fraction of evaporation) for elevations below 6500 ft per SEO guidelines X (39.72 inches per year) Gross free water surface evaporation from NOAA Technical Report NWS 33

(2) = Sum of pond 1 & pond 2 surface areas.

(3) = Column (1) X Column (2). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(4) = Monthly average precipitation (1989-2017) as recorded at NCWCD Loveland

(5) = Column (4) X .70

(6) = Column (5) X Column (2)

(7) = Column (3) - Column (6)

(8) = Lagged stream depletion factor fraction as detrrmined by IDS AWAS.

(9) = The annual total of Column (7) X Column (8)

AV.4 Monthly Accounting Sheet - Kirtright Pit

MONTHLY WATER ACCOUNTING WORKSHEET

Kirtright Pit M-1986-123

Month	(1) Gross Evaporation Rate	(2) Exposed Groundwater Area	(3) Gross Volumetric Evaporation Rate	(4) Average Monthly Precip.	(5) Average Effective Monthly Precip.	(6) Average Monthly Precip. Volumetric Rate Credit	(7) Net Volumetric Evaporation Rate	(8) Lagged Stream Depletion Factor	(9) Net Lagged Volumetric Evaporation Rate
	[ft./mo.]	[acres]	[acre-ft/mo.]	[ft./mo.]	[ft./mo.]	[acre-ft/mo.]	[acre-ft/mo.]	[1]	[acre-ft]
January	0.10	*0.00*	0.00	0.04	0.03	0.00	0.00	0.07	2.34
February	0.12	*14.65*	1.70	0.05	0.04	0.51	1.18	0.06	2.07
March	0.18	*14.65*	2.67	0.12	0.08	1.23	1.43	0.06	2.03
April	0.30	*14.65*	4.36	0.17	0.12	1.74	2.62	0.06	2.08
May	0.40	*14.65*	5.82	0.22	0.15	2.26	3.56	0.07	2.28
June	0.48	*14.65*	7.03	0.14	0.10	1.44	5.59	0.08	2.60
July	0.50								
August	0.45								
September	0.33								
October	0.23								
November	0.13								
December	0.10								
Annual Total	3.31		21.58	1.32	0.52	7.18	14.38	1.00	13.39

Notes:

(1) = (Monthly fraction of evaporation) for elevations below 6500 ft per SEO guidelines X (39.72 inches per year) Gross free water surface evaporation from NOAA Technical Report NWS 33

(2) = Sum of pond 1 & pond 2 surface areas.

(3) = Column (1) X Column (2). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(4) = Monthly average precipitation (1989-2017) as recorded at NCWCD Loveland

(5) = Column (4) X .70

(6) = Column (5) X Column (2)

(7) = Column (3) - Column (6)

(8) = Lagged stream depletion factor fraction as detrrmined by IDS AWAS.

(9) = The annual total of Column (7) X Column (8)

AV.5 Monthly Accounting Sheet - Challenger Pit

MONTHLY WATER ACCOUNTING WORKSHEET

Challenger Pit M-1985-26

Month	(1) Gross Evaporation Rate	(2) Exposed Groundwater Area	(3) Gross Volumetric Evaporation Rate	(4) Average Monthly Precip.	(5) Average Effective Monthly Precip.	(6) Average Monthly Precip. Volumetric Rate Credit	(7) Net Volumetric Evaporation Rate	(8) Lagged Stream Depletion Factor	(9) Net Lagged Volumetric Evaporation Rate
	[ft./mo.]	[acres]	[acre-ft/mo.]	[ft./mo.]	[ft./mo.]	[acre-ft/mo.]	[acre-ft/mo.]	[1]	[acre-ft]
January	0.10	*0.00*	0.00	0.04	0.03	0.00	0.00	0.02	0.55
February	0.12	*22.70*	2.69	0.05	0.04	0.79	1.90	0.02	0.77
March	0.19	*22.70*	4.23	0.12	0.08	1.91	2.33	0.03	1.09
April	0.31	*22.70*	6.93	0.17	0.12	2.70	4.22	0.06	1.73
May	0.41	*22.70*	9.23	0.22	0.15	3.50	5.74	0.08	2.54
June	0.49	*22.70*	11.16	0.22	0.15	3.50	7.66	0.08	2.54
July	0.51	*22.70*	11.54	0.14	0.10	2.22	9.32	0.12	3.82
August	0.46								
September	0.34								
October	0.24								
November	0.14								
December	0.10								
Annual Total	3.39		45.79	1.32	0.67	14.62	31.17	1.00	13.03

Notes:

(1) = (Monthly fraction of evaporation) for elevations below 6500 ft per SEO guidelines X (40.68 inches per year) Gross free water surface evaporation from NOAA Technical Report NWS 33

(2) = Sum of pond 1 & pond 2 surface areas.

(3) = Column (1) X Column (2). Set to 0.00 for months where Mean Ave. Temp. <32 due to ice cover

(4) = Monthly average precipitation (1989-2017) as recorded at NCWCD Loveland

(5) = Column (4) X .70

(6) = Column (5) X Column (2)

(7) = Column (3) - Column (6)

(8) = Lagged stream depletion factor fraction as detrrmined by IDS AWAS.

(9) = The annual total of Column (7) X Column (8)

AV.6 Monthly Accounting Sheet - Amen Aggregate Resource

MONTHLY WATER ACCOUNTING WORKSHEET

Amen Aggregate Resource M-1986-123

Month	(1) Monthy Unit Evap. Loss	(2) Pit Size	(3) Exposed Groundwater Area	(4) Gross Evap.	(5) Effective Precip.	(6) Effective Precip. Credit	(7) Net Evap.	(8) Aggregate Mined	(9) Water in Mined Product	(10) Water Used for Dust Supression	(11)	(12) Total Operational Losses	(13) Lagged Effect on Stream	(14) Transit Loss	(15) Total Replacement Requirement
	[ft]	[acres]	[acres]	[acre-ft.]	[ft.]	[acre-ft]	[acre-ft]	[tons]	[acre-ft]	[gallons]	[acre-ft]	[acre-ft]	[acre-ft]	[acre-ft]	[acre-ft]
January	0.10		*0.65*	0.07	0.03	0.02	0.05	*38,557*	*1.14*	*101,829.16*	*0.31*	*1.50*	*0.94*	0.02	0.96
February	0.12		*0.65*	0.08	0.04	0.02	0.06	*25,634*	*0.75*	*101,829.16*	*0.31*	*1.13*	*1.08*	0.02	1.10
March	0.19		*0.65*	0.12	0.08	0.05	0.07	*68,158*	*2.01*	*391,023.96*	*1.20*	*3.28*	*2.45*	0.05	2.50
April	0.31		*0.88*	0.27	0.12	0.10	0.17	*41,830*	*1.23*	*391,023.96*	*1.20*	*2.60*	*2.58*	0.05	2.63
May	0.41		*0.88*	0.36	0.15	0.14	0.22	*53,024*	*1.56*	*391,023.96*	*1.20*	*2.98*	*2.80*	0.06	2.85
June	0.49		*0.88*	0.43	0.10	0.09	0.34	*45,558*	*1.34*	*244,389.98*	*0.75*	*2.43*	*2.46*	0.05	2.51
July	0.51														
August	0.46														
September	0.34														
October	0.24														
November	0.14														
December	0.10														
Annual Total	3.39			1.33	0.92		0.91	*400,000*	8.03		6.73	*13.91*	*20.02*	0.25	12.55
MAXIMUMS			1.74					400,000			6.73	25.00			

Notes:

(1) = (Monthly fraction of evaporation for elevations below 6500 ft per SEO guidelines) x (Gross free water surface evaporation from NOAA Technical Report NWS 33 of 40.4 inches per year)
(2) = Estimate of pit size in acres
(3) = (Estimate of linear distance of dewatering trench X 4ft/ 43,560) + (Estimate of any pond area in acres)
(4) = Column (1) X Column (3)
(5) = 70% of average precipitation (1989-2017) as recorded at NCWCD Loveland
(6) = Column (3) x Column (5)
(7) = Column (4) - Column (6)
(8) = Actual Aggregate Mined in Tons
(9) = {Column (8) X 2000lbs/ton X 0.04} / {8.34lbs H_2O per gal. X 325,851 gallons per acre-ft}
(10) = Volume of water used for dust supression [gallons]
(11) = Volume of water used for dust supression [acre-ft]
(12) = Column (7) + Column (9) + Column (11)
(13) = Stream Depletion as Determined by IDS AWAS
(14) = Column (13) x .02. (2% Transit Loss)
(15) = Column (13) + Column (14)

2022

Upstream Sites

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Month	**Total** BTD & MFG HCU Credits Available	**Gardels** Total Net Evaporative Loss	**Brownwood** Total Net Evaporative Loss	**Total** Net Evaporative Loss	**Total** BTD & MFG **HCU Credits** Applied	**Total** BTD & MFG **HCU deliveries**	**Return Flow** Factor	**Total Return Flow** Obligation	Total **Remaining** Losses/ Replacement Requirement
	[acre-ft./mo.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]
January	0.00	0.03	1.02	1.06	0.00	0.00	0.45%	0.00	1.06
February	0.00	0.18	1.21	1.39	0.00	0.00	0.37%	0.00	1.39
March	0.00	0.32	1.49	1.81	0.00	0.00	0.33%	0.00	1.81
April	0.00	0.53	2.03	2.56	0.00	0.00	0.62%	0.00	2.56
May	1.89	0.78	2.75	3.53	1.89	7.38	63.97%	4.72	1.64
June	5.88	1.19	3.93	5.12	5.12	11.58	50.48%	5.84	0.00
July	10.20	0.00	0.00	0.00	0.00	0.00	41.94%		
August	7.64	0.00	0.00	0.00	0.00	0.00	44.96%		
September	2.03	0.00	0.00	0.00	0.00	0.00	7.57%		
October	0.00	0.00	0.00	0.00	0.00	0.00	5.52%		
November	0.00	0.00	0.00	0.00	0.00	0.00	1.13%		
December	0.00	0.00	0.00	0.00	0.00	0.00	0.59%		
totals	27.64	3.03	12.43	15.46	7.01	18.95			8.46

Notes:

(1) = Column (6) from **AIII.2 Brownwood Farm Average Historical Consumptive Use (HCU) and Return Flows (1951-1979)**

(2) = Column (9) from **AV.1 Evaporative Loss Worksheet – Gardels Pit**

(3) = Column (9) from **AV.2 Evaporative Loss Worksheet – Brownwood Pit**

(4) = Column (2) + Column (3)

(5) = IF(Column (4) > Column (1)), THEN = Column (1), IF(Column (4) < Column (1)), THEN = Column (4)

(6) = Column (5)/ 25.63% (May), Column (5)/ 44.20% (June), Column (5)/ 54.61% (July), Column (5)/ 54.21% (Aug), Column (5)/ 29.72% (Sept)

(7) = Column (11) from **AIII.2 Brownwood Farm Average Historical Consumptive Use (HCU) and Return Flows (1951-1979)**

(8) = Column (6) * Column (7) for May-Aug, Total of previous 12 months Column (6)* Column (7) for Oct-April

(9) = Column (4) - Column (5)

2022
Downstream Sites

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Month	**Total** Hill & Brush **HCU Credits** Available	**Bonser** Total Net Evaporative Loss	**Bonser First Fill and Pump Shutdown (2022)**	**Kirtright** Total Net Evaporative Loss	**Amen** Total Mining & Evaporative Losses	**Challenger** Total Net Evaporative Loss	**Total** Net Losses	**Total** Hill & Brush **HCU Credits** Applied	**Total** Hill & Brush Deliveries	**Return Flow** Factor	**Total Return Flow** Obligation	Total **Remaining** Losses / Replacement Requirement
	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]	[acre-ft.]		[acre-ft.]	[acre-ft.]
January	0.00	3.45	0.87	2.34	0.96	0.55	8.17	0.00	0.00	0.11%	0.00	8.17
February	0.00	3.19	0.75	2.07	1.10	0.77	7.88	0.00	0.00	0.06%	0.00	7.88
March	0.00	3.10	0.66	2.03	2.50	1.09	9.37	0.00	0.00	0.03%	0.00	9.37
April	0.00	3.23	0.57	2.08	2.63	1.73	10.24	0.00	0.00	0.01%	0.00	10.24
May	11.57	3.58	0.57	2.28	2.85	2.54	11.82	11.57	19.28	32.79%	6.32	0.25
June	32.56	4.28	0.57	2.60	2.51	2.54	12.49	12.49	20.82	34.15%	7.11	0.00
July										36.18%		
August										41.84%		
September										2.82%		
October										0.93%		
November										0.45%		
December										0.23%		
totals	44.12	20.82	5.41	13.39	12.55	9.21	59.96	24.06			13.43	35.90

Notes:

(1) = Column (13) from **AIII.6 Challenger/Pfeif Farm Average Historical Consumptive Use (HCU) and Return Flows (1950-1986)**
(2) = Column (9) from **AV.3 Evaporative Loss Worksheet – Bonser Pit**
(3) = Total from **AVI.5 First Fill and Pump Shutdown Summary**
(4) = Column (9) from **AV.4. Evaporative Loss Worksheet – Kirtright Pit**
(5) = Column (4) from **AV.6 Total Net Water Loss / Replacement - Amen Aggregate Resource**
(6) = Column (9) from **AV.5. Evaporative Loss Worksheet – Challenger Pit**
(7) = Column (2) + Column (3) + Column (4) + Column (5) + Column (6)
(8) = IF(Column (7) > Column (1)), THEN = Column (1), IF(Column (7) < Column (1)), THEN = Column (7)
(9) = Column (8) / 60%
(10) = Column (12) from **AIII.6. Challenger/Pfeif Farm Average Historical Consumptive Use (HCU) and Return Flows (1950-1986)**
(11) = Column (9) * Column (10)
(12) = Column (7) - Column (8)

2022 Replacements

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Month	**Brownwood, Gardels** Replacement Requirement	**Bonser, Kirtright, Amen, Challenger** Replacement Requirement	Total Replacement Requirement	*Actual* ***City of Loveland*** *Deliveries*	***Actual Brownwood SE*** *Deliveries*	***Actual BTDM Direct Return Flow*** *Deliveries*	***Actual BTDM Return Flow*** *Delivered from* ***Storage*** *Deliveries*	***Actual Hill & Brush Direct Return Flow*** *Deliveries*	***Actual Hill & Brush Return Flow*** *Delivered from* ***Storage*** *Requirement*	**Net Effect of Stream**
	[acre-ft.]	[acre-ft.]	[acre-ft.]	*[acre-ft.]*	*[acre-ft.]*	*[acre-ft.]*	[acre-ft.]	*[acre-ft.]*	*[acre-ft.]*	[acre-ft.]
January	1.06	8.60	9.65	*9.65*	*0.00*	*0.00*	0.00	*0.00*	*0.00*	0.01
February	1.39	8.29	9.68	*10.03*	*0.00*	*0.00*	0.00	*0.00*	*0.00*	-0.34
March	1.81	9.86	11.68	*12.35*	*0.00*	*0.00*	0.00	*0.00*	*0.00*	-0.67
April	2.56	10.78	13.34	*14.64*	*0.00*	*0.00*	0.00	*0.00*	*0.00*	-1.30
May	1.64	0.26	1.90	*4.59*	*0.00*	*4.72*	0.00	*6.32*	*0.00*	-2.69
June	0.00	0.00	0.00	*0.77*	*0.00*	*5.84*	0.00	*7.11*	*0.00*	-0.77
July										
August										
September										
October										
November										
December										
totals	8.46	37.80	46.25	*100.00*	0.00	*10.56*	0.00	*7.11*	0.00	*-5.77*

Notes:

(1) = Column (9) from Upstream Sites
(2) = Column (12) from Downstream sites * 5.28% transit loss (0.5% per mile @ 10.56 mi.)
(3) = Column (1) + Column (2)
(4) = Total Actual deliveries at City of Loveland's WWTP located at 920 S. Boise Ave. Loveland, CO
(5) = Actual Deliveries from Brownwood Reservoir SE
(6) = Actual BTDM Direct Return Flow Deliveries at the Brownwood Return Flow Structure
(7) = Actual BTDM Deliveries from Brownwood Reservoir SE
(8) = Actual Hill & Brush Direct Return Flow Deliveries at the Hill & Brush Return Flow Structure
(9) = Actual Hill & Brush Deliveries from Brownwood Reservoir SE
(10) = Column (3) - (Column (4) + Column (5))

EXHIBIT G-1

APPENDIX VI

RENEWAL OF LEASE OF FULLY CONSUMABLE WATER

This renewal ("Lease Renewal") is entered into by and between the City of Loveland, Colorado ("City") and Coulson Excavating Company ("Lessee") (collectively, the "Parties").

Whereas, the Parties entered into a Lease of Fully Consumable Water on January 13, 1998 ("Lease"); and

Whereas, the current Lease expires on December 31, 2022; and

Whereas, Lessee notified the City on October 7, 2022 of its intent to exercise the option to renew the Lease;

Whereas, the Parties desire to renew the Lease for one twenty-five-year term.

Now, therefore, in consideration of the mutual covenants and agreements set forth herein, the Parties agree as follows:

1. The Lease is hereby renewed for a twenty-five-year term effective January 1, 2023 through December 31, 2047, and may be renewed for additional successive terms of twenty-five years pursuant to the terms of Section 1 of the Lease.

2. The Lessee may use the Leased Water only for the purposes of replacement and/or augmentation of depletions associated with the exposure of groundwater from the mining of sand and gravel.

3. Exhibit A to the Lease is hereby replaced with the attached Exhibit A. In accordance with the Lease, the City shall deliver a total annual quantity of no more than one hundred acre-feet, as specified by the Lessee, and at specific monthly delivery times and in specific monthly quantities no greater than those described in the attached Exhibit A, or as otherwise agreed by the City and the Lessee in writing. In no event shall the monthly deliveries exceed the monthly amounts shown on Exhibit A unless agreed in writing by the City and the Lessee.

4. Paragraph 4 of the Lease is hereby replaced in its entirely with the following language:

   In supplying the Leased Water pursuant to this Lease, the City may use any water, including, but not limited to, the sources of water which may be used to extinction (the "Fully Consumable Water") listed on Exhibit B to this Lease Renewal.

5. Paragraph 7 of the Lease is hereby modified as follows: Lessee shall continue to pay the City's reasonable costs incurred in administering the terms of this Lease and accounting for such leased water. For the first five years of this Lease Renewal, the administrative costs shall be $2,000.00 per year, payable in advance. All other terms of Paragraph 7 of the Lease remain in full force and

effect.

6. In addition to the locations of delivery described in Paragraph 8, at the option of the City, delivery of the Leased Water may be made at the following locations, or any other locations available to the City and agreed to by the parties:

   a. The outfall to the Big Thompson River from the decant pond at the Water Treatment Plant, located in the SW1/4 of the SW1/4 of Section 2, Township 5 North, Range 70 West of the 6th P.M., Larimer County, Colorado.

   b. The outfall(s) to the Big Thompson River from the outlet of the water storage reservoir known as Loveland Great Western Reservoir, located in the W ½ of Section 21, Township 5 North, Range 68 West of the 6th P.M, in Larimer County, as decreed and described in Case No. 18CW3125.

   c. For delivery of reusable credits from lawn irrigation return flows as decreed in Case No. 18CW3193: The midpoint of the return flow basins described as follows:

Basin	Location	UTM X[1]	UTM Y[1]
1	SW¼, NW¼, NW¼, T5N, R69W, Sec 7	485348	4474191
2	NE¼, SE¼, NW¼, T5N, R69W, Sec 16	489376	4472175
3	NE¼, SE¼, NW¼, T5N, R69W, Sec 16	489376	4472175
4	SE¼, SE¼, SE¼, T5N, R69W, Sec 24	494830	4469596
5	SE¼, SE¼, SE¼, T5N, R69W, Sec 24	494830	4469596
6	NE¼, NE¼, NE¼, T5N, R68W, Sec 21	499797	4471026
7	NE¼, NE¼, NE¼, T5N, R68W, Sec 21	499797	4471026

7. Section 13 of the Lease regarding notice is hereby revised as follows:

   If to City:

   City of Loveland Water and Power Department
   Attn: Director
   200 North Wilson Avenue
   Loveland, CO 80537

   (no change to City Attorney's address)
   (no change to Lessee's address)

8. All other terms and conditions of the Lease remain unchanged and in full force and effect. In the event of any conflict among the terms, conditions and provisions of this Lease Renewal and the Lease, this Lease Renewal shall control. This Lease Renewal and the Lease (as modified in this Lease Renewal), constitute the entire agreement between the Parties pertaining to the subject matter of the Lease, and fully supersede any and all prior agreements or understandings between or among the Parties pertaining to the subject matter

of the Lease.

9. This Lease Renewal may be executed in two or more counterparts, including by facsimile or electronic mail, each of which shall be deemed an original and all of which shall constitute one and the same Lease Renewal. By affixing an image of one's own signature to this Lease Renewal in an electronic format, the person is signing as if it were an original, wet ink signature.

[Remainder of page intentionally left blank.]

City of Loveland, Colorado

By: _____
Stephen C. Adams, City Manager

Attest:

_____
Assistant City Clerk 10-31-2022
Sterling Wilson

CITY OF LOVELAND SEAL COLORADO

APPROVED AS TO FORM:

_____
Assistant City Attorney

Coulson Excavating Company, Inc.

By: _____
Richard Coulson, CEO

STATE OF COLORADO)
) ss.
COUNTY OF Larimer)

The foregoing Renewal of Lease of Fully Consumable Water was subscribed and sworn to before me this 25th day of October, 2022 by Richard Coulson, CEO, Coulson Excavating Company, Inc.

Witness my hand and official seal.

My commission expires May 20, 2026.

_____
Notary Public

DIANA R MONEYPENNY
Notary Public
State of Colorado
Notary ID # 19904006472
My Commission Expires 05-20-2026

EXHIBIT A

RENEWAL OF LEASE OF FULLY CONSUMABLE WATER

ANNUAL MAXIMUM: 100 Acre Feet

Month	Monthly Maximum Delivery (Acre-Feet)
January	3
February	3.5
March	5.5
April	9
May	12
June	14.5
July	15
August	13.5
September	10
October	7
November	4
December	3

EXHIBIT B

Summary of Reusable Water Rights
City of Loveland

Case No.	Water Right / Ditch Company	Loveland Ownership	Comment
Direct Flow Water Rights			
04CW358	Loveland Pipeline	71.3 cfs	
Changed Water Rights			
00CW108 / 03CW354	Big Thompson Ditch & Mfg Company	2.583 shares	Stored portion of changed water rights
	Barnes Ditch	1306.75 inches	may be reused
	Chubbuck Ditch	596.6 inches	
	George Rist (Buckingham) Ditch	6.1 shares	
	Louden Ditch	191.5 shares	
	South Side Ditch	57.5 shares	
02CW392	Big Thompson Ditch & Mfg Company	3.811 shares	
	Barnes Ditch	24.5 inches	
	Chubbuck Ditch	815.001 inches	
	George Rist (Buckingham) Ditch	89.25 shares	
	Louden Ditch	61.547 shares	
	South Side Ditch	23 shares	
07CW325	Loveland Gard Right	1.0 cfs	1.0 cfs until July 14 and 0.5 cfs thereafter
Storage Water Rights			
18CW3215 (pending)	Great Western Reservoir	1,600 af	Estimated reservoir capacity
Transmountain Water Rights			
various	Windy Gap Project Water*	40 units	Including water stored in Chimney Hollow Reservoir under the Windy Gap Firming Project
Exchange Water Rights			
02CW393	Big Thompson River Exchanges	18.5 cfs	Exchanges from gravel pits located upstream of the Loveland WWTP
02CW394	Big Thompson River Exchanges	75.0 cfs	Exchanges from Loveland WWTP and gravel pits located downstream of the Loveland WWTP

WATER LEASE AGREEMENT

THIS WATER LEASE AGREEMENT is made and entered into by and between the CITY OF LOVELAND, COLORADO, a home rule municipality, whose address is 500 East Third Street, Loveland, Colorado 80537 ("City"), and COULSON EXCAVATING COMPANY, INC., a Colorado corporation whose address is 3609 North County Road 13, Loveland, CO 80538 ("Coulson").

WHEREAS, the City owns certain rights to water which, pursuant to the City's decreed water rights and Colorado state law, may be used, re-used, and successively used to extinction, including water rights decreed for augmentation or replacement of depletions (the "Fully Consumable Water"); and

WHEREAS, Coulson desires to lease from the City Fully Consumable Water to replace depletions, including evaporative losses, caused by on-going sand and gravel mining along the Big Thompson River, as part of augmentation plans to be approved by the Water Court for Water Division 1 and as part of temporary substitute supply plans for current or future sand and gravel pits to be approved by the State of Colorado Division of Water Resources; and

WHEREAS, Coulson's sand and gravel mining operations are permitted through the Colorado Division of Reclamation, Mining, and Safety ("DRMS"), and Coulson is required under the terms of such permits to obtain a permanent Water Court-approved augmentation plan decree that ensures the perpetual replacement of all out-of-priority evaporative depletions to the Big Thompson River in a manner that prevents injury to senior water rights; and

WHEREAS, Coulson Excavating is an on-going family business formed in the City of Loveland in 1949 and operated by three generations of the Coulson family, with strong civic and business ties to the City and its institutions; and

WHEREAS, Coulson and the City entered into a Lease of Fully Consumable Water on January 13th, 1998 (1998 Long Term Lease), whereby the City leases 100 acre-feet of fully consumable water to Coulson, and such leased water may be used by Coulson to replace evaporative depletions caused by Coulson's sand and gravel mining under the terms of the decree pending in Water Court for Water Division 1 and under the terms of current and future temporary substitute supply and augmentation plans; and

WHEREAS, the City desires to lease to Coulson, and Coulson desires to lease from the City, additional amounts of Fully Consumable Water under the terms and conditions of this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the parties agree as follows:

1. Water Lease

a. Amount. The City hereby leases to Coulson the right to receive 50 acre-feet of the City's Fully Consumable Water, as further defined in paragraph 1.d of this Lease, on an annual basis (the "Leased Water").

b. Term. This Water Lease is for a term of fifteen years commencing November 1, 2023 and ending December 31, 2037, unless sooner terminated as provided herein. Coulson shall have the option to renew this lease for four additional successive terms of fifteen years, which option shall terminate only if Coulson is in default of its payment obligations under paragraph 1.f of this Lease, or if Coulson elects not to exercise its option to renew by giving notice to the City pursuant to paragraph 4 of this Lease not later than three months prior to the end of any fifteen-year term. In the event that Coulson elects to renew the Lease for a successive fifteen-year term, Coulson shall not be required to pay any additional amounts under the Lease for the right to receive the amount of leased Fully Consumable Water. Renewal of this lease for additional terms shall be subject to written agreement of both Parties.

c. Subordinate to previous leases of Fully Consumable Water. The parties recognize that the City has committed, through long term lease agreements previously executed by Coulson and Loveland Ready-Mix Concrete ("LRM"), 300 acre-feet of Fully Consumable Water. Such leases include the 1998 Long Term Lease between the City and Coulson. Coulson acknowledges that its right to receive the Leased Water pursuant to this lease is subordinate to the previously-executed long term leases with Coulson and LRM as follows: In the event the available Fully Consumable Water in any year is not sufficient to satisfy the 300 acre feet leased to LRM and Coulson under previous lease agreements, the City shall provide such available water to LRM and Coulson under the terms of those particular lease agreements, and Coulson shall not receive any Fully Consumable Water under this lease.

d. Deliveries. The City shall deliver the Leased Water under this Lease as requested by Coulson, and at specific delivery times as requested by Coulson and as required by the terms of Coulson's augmentation plan decree that includes the Leased Water as a source of replacement.

i. Monthly maximums. Coulson may request for delivery monthly amounts up to a maximum of 5 acre-feet in any particular month, unless otherwise agreed to in writing.

ii. Carryover. Coulson shall not have the right to carryover from month to month or from year to year any Leased Water that was deliverable but not requested for delivery.

iii. Location. In consultation with Coulson, The Leased Water may be available for use by Coulson at the following locations on the Big Thompson River:

1. The outfall to the Big Thompson River from the Water Reclamation Facility, currently located in the NW1/4 of the NE1/4 of the SW1/4 of Section 19, Township 5 North, Range 68 West of the 6th P.M., Larimer County, Colorado.

2. The outfall to the Big Thompson River from the Water Treatment Plant decant pond and Green Ridge Glade Reservoir, located in the SW1/4 of the SW1/4 of Section 2, Township 5 North, Range 70 West of the 6th P.M., Larimer County, Colorado.

3. The future outfall(s) to the Big Thompson River from the outlet of the water storage reservoir known as Loveland Great Western Reservoir, to be located in the W ½ of Section 21, Township 5 North, Range 68 West of the 6th P.M, in Larimer County, as decreed and described in Case No. 18CW3125.

4. Any future outfalls to be constructed to the Big Thompson River from the Gardels Reservoir West in the SE ¼ of the NW ¼ of Section 19, Township 5 North, Range 68 West of the 6th P.M. at a distance of 2324 feet from the North line and 2361 feet from the West line of said Section 19.

5. Reusable lawn irrigation return flow (LIRFs) quantified and available for use at the following locations, pursuant to the decree in Case No. 18CW3193:

Quantification Points for Loveland LIRFs			
Basin	Location	UTM X[1]	UTM Y[1]
1	SW¼, NW¼, NW¼, T5N, R69W, Sec 7	485348	4474191
2	NE¼, SE¼, NW¼, T5N, R69W, Sec 16	489376	4472175
3	NE¼, SE¼, NW¼, T5N, R69W, Sec 16	489376	4472175
4	SE¼, SE¼, SE¼, T5N, R69W, Sec 24	494830	4469596
5	SE¼, SE¼, SE¼, T5N, R69W, Sec 24	494830	4469596
6	NE¼, NE¼, NE¼, T5N, R68W, Sec 21	499797	4471026
7	NE¼, NE¼, NE¼, T5N, R68W, Sec 21	499797	4471026

6. Any other location agreed to by the parties.

iv. Drought or Emergency Conditions. The City shall only be obligated to deliver the Leased Water to Coulson if water meeting the requirements of this Lease is reasonably available to the City. In the event of a drought or other conditions, restrictions, or emergency situations beyond the control of the City which limit the City's ability to deliver all or a portion of the Leased Water to Coulson, as determined at the sole discretion of the City, the City shall not be required to deliver the Leased Water under the terms of this Lease until such time as conditions permit the City's delivery of the Leased Water.

e. Sources.

i. The City may make available for Coulson any Fully Consumable Water that may lawfully be used to extinction. The City shall have the right to deliver the Leased Water to Coulson from any sources described below, at the City's sole discretion or under the terms described below, and shall have the right to determine if any or all of the Leased Water shall be first use or subsequent use water. Such sources of supply may include, but are not specifically limited to:

1. Fully consumable water decreed in Consolidated Case Nos. 00CW108 & 03CW354.

2. Fully consumable water decreed in Case No. 02CW392.

3. Fully consumable water decreed in Case No. 07CW325.

4. Fully consumable water quantified and available pursuant to the decree in Case No. 18CW3193, including LIRFs.

5. Fully consumable water decreed in Case No. 18CW3215 and any subsequent proceedings to make absolute such conditional water rights.

6. Water received pursuant to the City's allotment contracts with the Municipal Subdistrict of the Northern Colorado Water Conservancy District ("Subdistrict"), commonly known as Windy Gap Water.

7. Any water subsequently acquired by the City and determined by water court decree to be fully consumable.

ii. Windy Gap Water Delivery. The Parties agree that approval of the Subdistrict may be required for the City's delivery of Windy Gap Water under this Lease. If the City desires to deliver Windy Gap Water to satisfy its delivery obligation under this lease, and Coulson agrees after receiving notification of such potential delivery, Coulson shall be responsible for completing all forms required by the Subdistrict and for paying all costs imposed by the Subdistrict on the City for such approval, if required, and all costs for pumping, conveyance, and delivery of Windy Gap Water. Such costs may include any assessments and fees for administrative, operating, and maintenance of the Windy Gap Project facilities, including any costs imposed by the Subdistrict for storage in Chimney Hollow Reservoir. The City shall only deliver Windy Gap Water to satisfy this Lease if the City has no other Fully Consumable Water available to the City, as determined by the City in its sole discretion. In the event the only water available to the City to meet the terms of this lease is first use Windy Gap Water and the City is willing to deliver such first use water, the City shall notify Coulson prior to delivering such water and Coulson shall have the option to accept the first use Windy Gap Water and pay the costs of delivering such water pursuant to this paragraph. In the event Coulson refuses to accept the delivery of the first use Windy Gap Water, the City shall be deemed to have met its obligations under this Lease, until such time as a source of Fully Consumable Water, other than first use Windy Gap Water, becomes available. In the event

the City is reasonably able to but fails to exercise its rights under Consolidated Case Nos. 00CW108/03CW354 or Case No. 02CW392 sufficient to meet the demands under this Agreement (unless the exercise of such rights would impair the City's ability to meet the normal domestic needs of the City), and the only water available to the City to meet the terms of this Lease is first use Windy Gap Water, Coulson shall not be required to pay the delivery charges provided in this paragraph for delivery of such first use Windy Gap Water. In the event Windy Gap Water is delivered by the City to satisfy this Lease, Coulson shall promptly pay within thirty days all invoices from the City for such costs of delivery of Windy Gap Water, for all such water delivered consistent with the terms of this paragraph.

iii. Coulson shall take and use the Leased Water as is and the City makes no express or implied warranties of any kind or nature concerning the quality of the Leased Water delivered under this Lease.

f. Administrative Costs. Coulson shall pay the City's reasonable costs incurred to administer the terms of this Lease and coordinate releases and accounting of such Leased Water with the Water Commissioner for Water District 4. The Parties agree that such administrative costs shall be $2,000.00 per year for the first five years of this Lease. After the first five years, the City shall have the right to calculate its reasonable costs of administering this Lease and shall provide notice in writing to Coulson of any such recalculation. The City shall invoice Coulson for the annual administrative costs in January of each year. Coulson shall pay the invoice within thirty days of receipt.

g. Sublease or Assignment. Coulson shall not be permitted to sublease or assign the right to receive delivery of Leased Water under this Water Lease without the express written approval of the City.

2. **Consideration for Water Lease**. In consideration of the right to receive the Leased Water, Coulson shall, upon execution of this Lease:

a. Transfer to the City all right, title, and interest of Coulson in the Osborn Irrigation System ("OIS") water right by Bargain and Sale Deed in a form acceptable to the City. The OIS water right is that water right decreed on November 14, 1939 in Case No. 1077 in the Boulder County District Court as Irrigation Ditch Priority No. 88, Ditch No. 54, in Water District 4 of Water Division 1, located in the

north half of Section 19, Township 5 north, Range 68 west of the Sixth Principal Meridian, in Larimer County.

b. Dedicate to the City 95 acre-feet of credits in the City of Loveland Water Bank by execution of valid and active Holding Receipts from one or more Water Bank Account Nos. 139, 233, 285, 321, 393, and 396 to apply such credits to this Water Lease. The City's Native Water Storage Fee may be applicable to certain holdings in such accounts.

c. Execute the Option Agreement between the City and Coulson for the City's Option to Purchase approximately 109+/- acres located at 5650 E County Road 20E, Loveland Colorado, in a form substantially similar to that attached as Exhibit 1.

d. Transfer or Assign to the City, all of Coulson's right, title, and interest in Gardels Reservoir West including all water rights associated with the same. Such transfers shall occur by Bargain and Sale Deed or as otherwise required by the City, but without warranty.

3. **Coulson Obligation to Decree, Operate, and Maintain Augmentation Plan**.

a. The Parties agree that the City is not responsible for the implementation of any temporary substitute water supply plan ("SWSP") or augmentation plan that uses the Leased Water as a source of replacement. Coulson is responsible for all costs and expenses of obtaining approval of any SWSP or augmentation plan required for their development of sand and gravel mining, including but not specifically limited to the Application of Coulson in Case No. 19CW3157, Water Division 1.

b. The City shall reasonably cooperate with Coulson as necessary to obtain a decree in Case No. 19CW3157 for an augmentation plan for Coulson's existing and former gravel pits. The City shall continue to participate in Case No. 19CW3157 as an opposer as necessary to protect the City's interests and water rights from injury.

c. Coulson agrees that it shall operate and maintain the augmentation plan to be decreed in Case No. 19CW3157, or such other augmentation plan decreed by Water Court for Water Division 1, or any SWSPs required by the State of Colorado, to replace all out-of-priority depletions to the Big Thompson River

caused by the following structures ("Augmented Structures"), as further detailed in the attached Exhibit 2:

i. Pfeiff Pit/Willow Bend Pond. (DRMS permit no. M-1988-077, later combined with DRMS permit no. M-1979-059) (Approximately 4 exposed surface areas). Pfeff Pit/Willow Bend Pond is comprised of a lined pond that has not, as of the date of this Lease, been approved by the Division of Water Resources, located in the SE1/4 of the NW1/4 of Section 20, Township 5 North, Range 68 West of the 6th PM.

ii. Gardels Pit: (DRMS permit no. M 2005-033) (Approximately, 8.8 exposed surface acres). The Gardels Pit is comprised of two unlined ponds, each located in the N ½ of Section 19, Township 5 North, Range 68 West of the 6th PM. The Center of Pond One is 1644 feet from the North line and 475 feet from the East line of said Section 19. The center of Pond Two is 1892 feet from the North line and 1299 feet from the East line of said Section 19.

d. The City owns the real estate known as Larimer County Parcel 8520000907 (Willow Bend Open Space). The Pfeiff/Willow Bend Pond is located on such parcel. As required by the terms of Coulson's DRMS Permit No. M-1988-077/M-1979-059 and this Agreement, Coulson or its successors or assigns are required to replace in perpetuity all out-of-priority depletions caused by the Pfeiff/Willow Bend Pond.

e. The City owns the real estate known as Larimer County Parcel 8519109701. The Gardels Pit (Ponds 1 and 2) are located on such parcel. As required by the terms of Coulson's DRMS Permit No. M 2005-033 and this Agreement, Coulson or its successors or assigns are required to replace in perpetuity all out-of-priority depletions caused by the Ponds.

f. The Parties agree that Coulson is obligated to continue prosecuting to successful decree the Application in Case No. 19CW3157, Water Division 1 that sufficiently replaces all out-of-priority depletions caused by the Augmented Structures, or, if necessary, any additional water court actions as required by the State of Colorado. The City shall have no obligation or liability in any way related to augmentation of out of priority depletions caused by the Augmented Structures. This provision shall survive any termination or expiration of this Lease.

g. The City hereby grants Coulson a revocable license across the real estate described in paragraphs 3.d and 3.e, above (Pfeiff and Gardel's Pit parcels), for the purposes of monitoring the levels of the ponds located on such parcels to ensure compliance and monitoring of the ponds consistent with decree requirements or other state regulatory requirements.

h. In the event that Coulson is unable to operate and maintain the augmentation plan that replaces depletions to the Augmented Structures or Coulson otherwise fails to adequately replace the out-of-priority depletions caused by such ponds in a manner acceptable to the Colorado Division of Water Resources, the amount of Leased Water the City is required to deliver to Coulson shall be reduced pro-rata by the annual amount of out-of-priority depletions caused by such Augmented Structures as determined by the decree in Case No. 19CW3157 or other decree of the Water Court. Thereafter, in the event that Coulson resumes its ability to provide adequate replacement, that same amount shall be added back into the City's annual and monthly delivery obligation under the terms of this Lease.

4. Notices. Written notices required under this Water Lease and all other correspondence between the parties shall be directed to the following and shall be deemed received when hand-delivered or three (3) days after being sent by certified mail, return receipt requested:

If to the City: City of Loveland Water and Power Department
Attention: Water Resources Manager
200 North Wilson Avenue
Loveland, Colorado 80537

If to Coulson: Coulson Excavating Company
3609 North County Road 13
Loveland, CO 80538

5. Coulson agrees to exercise its rights under this Water Lease at its own risk. Coulson shall indemnify and hold harmless the City from and against any cost, expense, or liability arising out of this Water Lease or related activities, including any cost, expense or liability that may relate to the replacement of out-of-priority depletions for the Augmented Structures. Nothing in this Water Lease is intended to constitute a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions of the Colorado Governmental Immunity Act, C.R.S. §24-10-101 *et seq.*, as applicable now or hereafter amended.

6. Governing Law and Venue. This Water Lease shall be governed by the laws of the State of Colorado, and venue shall be in the County of Larimer, State of Colorado or the Water Court for Water Division 1 in the State of Colorado.

7. Severability. In the event a court of competent jurisdiction holds any provision of this Water Lease invalid or unenforceable, such holding shall not invalidate or render unenforceable any other provision of this Water Lease.

8. Headings. Paragraph headings used in this Water Lease are for convenience of reference and shall in no way control or affect the meaning or interpretation of any provision of this Lease.

9. Assignability. Coulson shall not assign this Water Lease without the City's prior written consent.

10. Binding Effect. This Water Lease shall be binding upon, and shall inure to the benefit of, the parties hereto and their respective heirs, personal representatives, successors, and assigns.

11. Entire Agreement. This Water Lease contains the entire agreement of the parties relating to the subject matter hereof and, except as provided herein, may not be modified or amended except by written agreement of the parties.

IN WITNESS WHEREOF, the parties have executed this Water Lease on the day and year written below.

CITY OF LOVELAND, COLORADO

By: _____
Stephen C. Adams, City Manager

Date:_____

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Sr. Assistant City Attorney

LESSEE
Coulson Excavating Company, Inc.

By: _____

STATE OF COLORADO)
) ss.
COUNTY OF LARIMER)

The foregoing Water Lease was acknowledged before me this ____ day of _____, 20__, by _____.

Witness my hand and official seal.

_____
Notary Public

My commission expires _____.

OPTION AGREEMENT FOR THE PURCHASE AND SALE OF REAL PROPERTY

THIS OPTION AGREEMENT FOR THE PURCHASE AND SALE OF REAL PROPERTY (this "**Agreement**") is made and entered into on the date of execution by the parties. by and between **Coulson Excavating Company, Inc.** ("**Sellers**"), and the **CITY OF LOVELAND, COLORADO, a home rule municipal corporation** ("**Purchaser**") (each a "**Party**" and together, the "**Parties**").

W I T N E S S E T H:

For and in consideration of the option of Purchaser to purchase and the obligation of Sellers to sell the real property hereinafter described for an agreed upon appraised value, and other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Parties agree to be legally bound whereby Sellers agree to sell, and Purchaser agrees to purchase said real property, if Purchaser exercises the option to purchase for the purchase price further described below, on the terms and conditions as set forth in this Agreement.

1. **Option**. In consideration of the execution by the City of the Water Lease Agreement between the Parties dated _____ (the "Option Consideration"), receipt of which is hereby acknowledged, Sellers grant to Purchaser an exclusive and irrevocable option to purchase the Property (described in Section 4 of this Agreement) (the "Option").

2. **Term**. Purchaser's Option shall run from the Effective Date of this Agreement to and through (1) the date that is twenty years thereafter, or (2) the date that is two years following the date that Sellers provide written notice via certified mail, return receipt requested to Purchaser that Sellers have completed sand or gravel mining and completed reclamation of the Property described below, to the full satisfaction of the State of Colorado Division of Mining, Reclamation, and Safety ("DRMS"), whichever date is later (the "Term"). In the event Purchaser fails to exercise the Option by 11:59 p.m. on the expiration date of the Term, this Agreement will terminate.

3. **Exercise**. In the event Purchaser exercises the Option, it shall do so by notifying Sellers (the "Notice of Exercise") prior to the end of the Option Term specified in Section 2 above. The Notice of Exercise shall be deemed timely if given in accordance with Section 15 below consistent with the terms and conditions in Section 2.

4. **Description of Real Property**. The real property that is the subject matter of this Agreement is approximately 113-acres (+/-) of real property located in the County of Larimer, State of Colorado, depicted as the "Coulson Option Property" on the survey attached as **Exhibit A**, and legally described in **Exhibit B** attached hereto and incorporated herein by this reference and as further defined by a survey of

the property as described in Section 7 below (the "Property"). Unless otherwise agreed by the Parties, and with the exception of the asphalt batch and process plants, the Property shall include all fences, landscaping, irrigation systems, and other improvements, if any, now located thereon, including all fixtures of a permanent nature. Sellers agree that the Property shall be conveyed by Sellers to Purchaser with all of Sellers' right, title, and interest in and to all bonuses, rents, royalties, royalty interests and other benefits that may be payable. At time of conveyance of the property, Sellers agree that no person, business entity, or other legal entity acting by or through Sellers shall engage in activities, extracting or otherwise dealing with the minerals and any mineral rights, which may cause disturbance or subsidence of the surface of the Property, or which may result in the construction of additional improvements upon the Property.

5. Conditions of Conveyance to Purchaser: The following conditions are material conditions of this Option Agreement and are conditions of conveyance of the Property from Sellers to Purchaser at the time of Purchaser's exercise of the Option:

A. Water Rights: The Property shall include all of Sellers' right, title, and interest in and to any and all easements, including conservation easements, rights-of-way, future interests, and rights (inclusive of mineral and water rights, and in and to all strips and gores of land lying between the Property and adjoining property or streets, roads, or highways, open or proposed, except for Seller's rights to the lined water storage reservoir depicted as "Pond 5" on **Exhibit C**, for which Sellers shall retain an easement to operate such reservoir for the storage and delivery of water in accordance with decrees of the Water Court for Water Division 1.

B. Augmentation and permit Obligations: Sellers agree that they and their successors or assigns shall be perpetually obligated to replace all out of priority depletions associated with the unlined Bonser Pond No. 1, Bonser Pond No. 2, and Bonser Pond No. 3, as depicted on the attached **Exhibit C,** in accordance with decrees of the Water Court for Water Division 1. Sellers shall be responsible for satisfaction of all conditions of any regulatory permits associated with the sand and gravel mining operation on the property, including but not limited to the requirements of all permits issued by the Colorado Division of Reclamation, Mining, and Safety.

C. Easements: Purchaser agrees to provide an easement from Pond 5 to the Big Thompson River, as generally depicted on the attached **Exhibit C** and in a form agreeable to Sellers at the time of exercise of the Option, for a pipeline to convey water to and from Pond 5 and the Big Thompson River. Sellers and Purchaser shall agree on the form of any

other easements reasonably necessary for Sellers' access, operation, and management of water storage structures or ponds on the Property for which Sellers are responsible for under decrees of the Water Court for Water Division 1. Sellers agree to provide a public access easement in the location identified in the access easement recorded with the Larimer County Clerk and Recorder's Office on December 10th, 2018 at Reception Number 20180075208, or in an alternative corridor as mutually agreed to by both parties.

D. Ponds. Sellers agree that prior to the expiration of the Term, Sellers shall backfill the Pond 6 and Pond 7 areas depicted on **Exhibit C** prior to Purchaser's exercise of the Option, in a manner sufficient to eliminate all out of priority evaporation of exposed groundwater at such ponds. Sellers agree that it shall not alter or expand or otherwise interfere with the boundaries or shorelines of all other ponds that exist on the Property as of the date of this Agreement. Sellers agree that Purchaser's exercise of the Option shall include all right, title, and interest in the existing Pond Nos. 1, 2, and 3 depicted on **Exhibit C** (the "pre-1981 ponds").

E. Public recreation. Sellers agree that Purchaser shall have the right, but not the obligation, to allow public recreation, including wakeless boating and fishing, on all ponds located on the Property, so long as such recreation does not unreasonably interfere with Sellers operation of Pond 5 for the storage and delivery of water, or Sellers obligation to replace out of priority depletions from Bonser Pond No. 1, Bonser Pond No. 2, and Bonser Pond No. 3.

F. Future use of adjacent property. At such time Purchaser exercises the Option, Sellers shall also execute a covenant in Purchaser's favor restricting the use of the adjacent property, depicted on **Exhibit A** (labeled Coulson Future Residential Approximately 35 Acres) and legally described in **Exhibit D,** to residential use only and prohibiting commercial, industrial, or extractive uses on the surface of such lands, including mineral, oil, or gas extraction.

G. Subdivisions. In the event that, at the time of exercise of the Option, the Larimer County land use regulations require the property to be formally subdivided in order for Purchaser to exercise the Option as described in this Agreement, the Parties shall share equally in all costs of such required land use application. The parcel size and shape shall be adjusted should future land use regulations require the property division to be different than depicted in **Exhibit A.**

5. **Method of Conveyance.** If Purchaser exercises the Option, Sellers agree to sell to Purchaser, and Purchaser agrees to purchase from Sellers, subject to the terms and conditions as set forth herein, the Property. At closing, the Property shall be conveyed by Sellers to Purchaser by a special warranty deed, free and clear of all liens and encumbrances, except and subject to the Permitted Exceptions as referenced in Section 7 below.

6. **Purchase Price.** In the event Purchaser exercises the Option, Sellers shall sell to Purchaser and Purchaser shall purchase from Sellers, the Property, for a purchase price equal to the fair market value of the Property as determined by an appraisal of the Property performed in accordance with Section 7 below, in accordance with the timelines and process described in Sections 7 and 10, below. Within 15 days of Purchaser exercising the Option, Purchaser will deposit the sum of Ten Thousand Dollars ($10,000.00), representing an earnest money deposit, to Land Title Guarantee Company ("**Title Company**").

7. **Survey, Appraisal, and Title Commitment.**

A. Survey. Purchaser obtained a survey of the Property (the "**Survey**") at its sole cost and expense, attached as Exhibit A..

B. Appraisal. Upon Purchaser's Exercise of the Option, Purchaser shall contract and pay for a written appraisal of fair market value of the Property, based on the date of Purchaser's written notice to Sellers of the Exercise of the Option, to be performed by a State of Colorado Certified General Appraiser acceptable to Sellers and Purchaser. Upon receipt of the appraisal, Purchaser shall have a period of 30 days to review the appraisal and reject the same if not satisfied therewith. The appraised fair market value of the Property shall be the total Purchase Price. Any rejection by Purchaser of the appraisal shall be evidenced by written notice to Sellers within said 30 days. If not timely accomplished, Purchaser shall be deemed to have waived its right to object to the appraisal and both parties will move forward with the transfer of the property with a total Purchase Price equivalent to the fair market appraised value. If Purchaser timely rejects the appraisal, the parties agree to meet in good faith to attempt to reach an agreement on a negotiated Purchase Price acceptable to the Parties. If no such agreement is reached within 60 days from the date of Purchaser's receipt of the appraisal,, then Purchaser may contract and pay for a second written appraisal of the Property to be performed by a State of Colorado Certified General Appraiser acceptable to Sellers and Purchaser. In such event, the Purchase Price shall be the averaged appraised fair market value between the two written appraisals, unless Purchaser elects to terminate this Agreement. Purchaser shall

procure a title commitment by the Title Company in the amount of the total Purchase Price agreed to in this Section 7, for the Property, as indicated above in Section 6.

C. Title Commitment. If Purchaser exercises the Option, Purchaser shall have until the expiration of the Inspection Period, as set forth in Section 25 below, including any tolling period, in which to review the title commitment and Survey and to notify Sellers in writing of any matter shown on the title commitment to which Purchaser objects ("**Defect**"). Any matter shown on the title commitment or Survey to which Purchaser does not object on or before the expiration of the Inspection Period shall be deemed a permitted exception ("**Permitted Exception**"). Seller shall have the right, but not the obligation, to cure any Defect to which Purchaser objects. If any such Defect is not cured on or before the date of Closing, Purchaser may elect either: (a) to waive such Defect, in which case the Defect shall become a Permitted Exception; or (b) to terminate this Agreement, and each Party shall thereupon be released from all further obligations under this Agreement. In the event this Agreement is terminated as a result of an uncured Defect, Purchaser shall receive any earnest money deposit. Likewise, any instance where Purchaser timely objects to a condition of the Property and Sellers fail to remedy said condition, Purchaser shall receive any earnest money deposit. The Parties shall comply with all requirements of Title Company and Title Insurance Commitment in order to properly vest title to all relevant Property in Purchaser free and clear of any matters other than the Permitted Exceptions, including Sellers obtaining a release of all relevant Property from any outstanding deed of trust, lien, or other encumbrance.

8. **Right of Refusal on Third Party Offer**. If at any time in the Term of this Agreement, Sellers receive a bona fide offer to purchase fee title to all or any part of the Property from any party, which Third Party Offer Sellers desire to accept, Sellers shall give written notice to Purchaser (the "Notice"). The Notice shall include the specific terms and conditions of the Third Party Offer and attach to it a copy of the Third Party Offer. The Notice shall constitute a representation by Sellers that the copy of the Third Party Offer so attached contains all material provisions of the Third Party Offer. The Notice shall offer the Property, or so much thereof as is included in the Third Party Offer, for sale to Purchaser on the same terms and conditions set forth in the Third Party Offer.

A. Purchaser shall have thirty (30) days following receipt of the Notice of the Third Party Offer within which to accept Sellers' offer. Acceptance shall be made, if at all, by Purchaser giving written notice to Sellers within the thirty (30) day period, which notice shall be

accompanied by cash or certified funds payable to Sellers in the amount of the earnest money deposit, if any, required by the terms of the Third Party Offer. Such acceptance may be contingent subject to approval by the City Council.

B. Upon such acceptance by Purchaser and approval by the City Council, if necessary, Purchaser and Sellers shall proceed to close the sale and purchase of the Property, or so much thereof as was included in the Third Party Offer, at the same price and on the same terms as set forth in the Third Party Offer. Notwithstanding the foregoing and notwithstanding anything to the contrary contained in the Third Party Offer, such closing shall occur within ninety (90) days, but not sooner than sixty (60) days, after the date of acceptance by Purchaser of the Third Party Offer, at a time and place within the City of Loveland designated by Purchaser.

C. Purchaser's failure to accept the Third Party Offer within the thirty (30) day period shall constitute a relinquishment and waiver by Purchaser of this right of first refusal to the portion of the Property which is purchased by a third party pursuant to the Third Party Offer, and Sellers may proceed to sell the Property (or the applicable part of the Property) on the terms contained in the Third Party Offer within the time period set forth in the Third Party Offer; provided, however, that: (i) such sale shall be consummated only upon the same terms and at the same price as stated in the Third Party Offer as provided to Purchaser; and (ii) should Sellers desire to sell the Property for a price or on terms different than those stated in the Third Party Offer, Sellers shall again give written notice to Purchaser and offer the Property for sale to Purchaser at such revised price or on such revised terms, all in accordance with the forgoing procedures, and (iii) Purchaser's Option shall remain in full force and effect for the Property. If Purchaser fails to accept a Third Party Offer within the time and manner described herein, Purchaser shall have an affirmative obligation upon the request of Sellers to provide written acknowledgment thereof, and Sellers may also establish prima fascia evidence of failure to accept the Third Party Offer by affidavit(s) reciting the relevant facts and accompanied by evidence of provision to Purchaser of the notices required herein and the same may be relied upon by any person.

D. Any waiver or exercise by Purchaser of the right of first refusal shall not affect in any way Purchaser's Option to purchase the Property on the terms and conditions of this Agreement. Any conveyance by Sellers to any third party of any part of the Property shall remain subject to this Option for the Term of this Agreement.

9. **Appropriations.** This Agreement is expressly contingent upon the City Council for Purchaser appropriating by ordinance on two readings all monies to be paid under this Agreement, if necessary for Purchaser's purchase. In the event the City Council does not approve such ordinance or the ordinance does not become law at least 30 days prior to closing, this Agreement shall automatically terminate unless agreed to otherwise in writing by both Parties, the earnest money shall be returned to Purchaser, and neither Party shall have any further obligations to one another under this Agreement. This Agreement is also expressly contingent upon a final review and recommendation by the Loveland Open Lands and Trails Advisory Commission and approval of the recommendation by the Parks and Recreation Director.

10. **Closing.**

A. The Property closing shall be held no later than 60 days from the date upon which Purchaser and Sellers have received the appraisal and agree on a sales price, as described in section 7, or as the Parties may otherwise agree in writing, at Title Company's place of business located at 345 E. 27th Street, Loveland, CO 80538, or at such other time and location upon which the Parties may mutually agree.

B. The following shall occur at Closing under this Agreement, each being a condition precedent to the others and all being considered as occurring simultaneously:

(i) Sellers shall execute, have notarized, and deliver to Purchaser a Special Warranty Deed conveying title to the Property to Purchaser in accordance with the provisions of this Agreement, except and subject to the Permitted Exceptions; and

(ii) Sellers shall execute and deliver to Purchaser an affidavit stating that Sellers are not foreign persons, foreign corporations, foreign partnerships, foreign trusts, or foreign estates (as those terms are defined in the Internal Revenue Code and Income Tax Regulations); and

(iii) Sellers shall execute Certificates as to Taxpayer Identification Numbers as required by law; and

(iv) Purchaser shall deliver to Sellers the certified or other immediately available funds required by Section 6 above, from which the payment of any lien or other encumbrance against the Property shall be made to ensure that the Property is free and clear of all liens and encumbrances, except and subject to the Permitted Exceptions; and

(v) Sellers and Purchaser shall each execute and deliver Settlement Statements showing adjustments in and the payment of the costs of the closing in accordance with this Agreement; and

(vi) Purchaser shall execute a Real Property Transfer Declaration as required by Colorado law; and

(viii) Each Party shall deliver to the other such other documents, certificates, and the like as may be required herein, as may be required by the Title Company, and as may be necessary or helpful to carry out each Party's obligations under this Agreement.

11. **Possession and Representations of Sellers.** Possession of the Property shall be delivered to Purchaser immediately following the closing. Sellers shall convey the Property free and clear of any tenancy, renter, or holdover or any third-party claim or right to use or reside on the Property, and no individual shall reside on the Property at closing. Sellers hereby agree to clean up and remove from the Property prior to Closing, all personal property, concrete structures, buildings, trash, debris, tires, steel, iron, glass, barrels, machinery, automobiles, tanks and heavy equipment located on the surface of the Property. In addition, Sellers agree to clean up and remove from the Property all environmental hazards known to Sellers and located on the surface of the Property, including but not limited to asbestos, chemicals, and any unsafe conditions prior to expiration of the Inspection Period noted in Section 24 below.

Sellers represent and warrant as of the date of this Agreement, the following:

A. Other than the water court action in Case No. 19CW3157, there is no litigation proceeding pending (or to Sellers' knowledge threatened) against or relating to any part of the Property, nor do Sellers know of or have reasonable grounds to know of any basis for any such action;

B. Sellers have no knowledge of any pending or threatened condemnation or eminent domain proceeding with respect to the Property or any part thereof;

C. Sellers have not received notice of, and to the best of Sellers' knowledge, there are no violations of any laws, orders, regulations or requirements of any governmental authority affecting the Property or any part thereof;

D. Sellers have the unconditional right and power to execute and deliver this Agreement to consummate this transaction;

E. Sellers have not received notice of default or breach by them or under any of the covenants, conditions, restrictions, rights-of-way or easements affecting

the Property or any portion thereof; no such default or breach now exists or will exist on the date of closing; and no event has occurred and is continuing which, with or without notice and/or the passage of time, shall constitute such a default or breach under any thereof;

F. To the best of Sellers' actual or constructive knowledge without further investigation or inquiry, the Property has never been used as a landfill or waste dump; there has been no installation in, or production, disposal or storage on the Property of any hazardous waste or other toxic substances by Sellers, Sellers' agents, employees, or assigns, any tenant or previous owner or previous tenant; nor has there been any other activity that is known to or reasonably could have resulted in an environmental condition requiring investigation or remediation on the Property; and there is no anticipated, threatened or pending proceeding or inquiry by any governmental authority or agency with respect thereto. Sellers represent that they have provided to Purchaser all environmental reports in their possession;

G. Sellers represent, to the best of Sellers' actual and constructive knowledge and information, that they have provided to Purchaser any and all environmental reports, documentation, data or other information known to Sellers or in their possession related to the Property or any adjacent property, as of the date of this Agreement, and acknowledge their ongoing obligation to provide any new environmental reports, documentation, data or other information to Purchaser promptly upon receipt.

12. **Expenses**. Sellers shall pay the premium for the Owner's Title Insurance Policy and Sellers shall pay for such endorsements as Purchaser may require. Sellers shall pay any recording fees required to release any liens and encumbrances as required under this Agreement. Each Party shall pay its own attorneys' fees. Purchaser shall pay recording fees to perfect title. All other closing costs, including, but not limited to, the cost of the Title Company acting as the Parties' closing agent, shall be divided equally between Sellers and Purchaser.

13. **Prorations.** Real property taxes and assessments shall be prorated as of the date of the most recent mill levy upon Closing. If any errors or omissions are made at closing regarding adjustments or prorations, the Parties shall make the appropriate corrections promptly after the discovery thereof. All prorations shall be final.

14. **Remedies on Default.** If any payment due hereunder is not paid, honored, or tendered when due, or if any other obligation hereunder is not performed as herein provided, there shall be the following remedies:

A. If Purchaser is in default, Sellers may elect to treat this Agreement as terminated, in which case all payments and things of value received hereunder

from Purchaser shall be forfeited by Purchaser and retained by Sellers, except as otherwise expressly provided for in this Agreement, and Sellers may recover such damages as may be proper.

B. If Sellers are in default, Purchaser may elect to treat this Agreement as:

(i) terminated, in which case all payments and things of value received hereunder by Sellers shall be returned to Purchaser, inclusive of the earnest money deposit noted in Section 6 of this Agreement, except as otherwise expressly provided for in this Agreement, and Purchaser may recover such damages as may be proper, or

(ii) being in full force and effect, and Purchaser shall have the right to specific performance, or damages, or both.

15. Governing Law and Venue. This Agreement shall be governed by the laws of the State of Colorado. In addition, the Parties acknowledge that there are legal constraints imposed upon the City by the constitution, statutes, and rules and regulations of the State of Colorado and of the United States and imposed upon the City by its Charter and Code, and that, subject to such constraints, the Parties intend to carry out the terms and conditions of this Agreement. Notwithstanding any other provision of this Agreement to the contrary, in no event shall either of the Parties be required to exercise any power or take any action which shall be prohibited by applicable law. Whenever possible, each provision of this Agreement shall be interpreted in such a manner so as to be effective and valid under applicable law. Venue for any judicial proceeding concerning this Agreement shall only be in the District Court for Larimer County, Colorado.

16. Notices. Any notice or other communication given by either Party to the other relating to this Agreement shall be hand delivered or sent by certified mail, return receipt requested, addressed to such other Party at its address as set forth below, and such notice or other communication shall be deemed given when so hand delivered or three (3) days after so mailed:

If to Sellers:

Coulson Excavating Company, Inc.
3609 N. County Rd 13
Loveland, CO 80538

If to Purchaser:

Open Lands & Trails Manager
Parks & Recreation Department
City of Loveland
500 E. Third Street, Suite 200

Loveland, CO 80537

With a copy to:

City Attorney
City of Loveland
500 East Third Street, Suite 330
Loveland, CO 80537

17. **Assignment.** This Agreement shall not be assigned by either of the Parties without the prior written consent of the other Party, which consent shall not be unreasonably withheld.

18. **Maintenance of the Property.** Sellers shall keep, or cause to be kept, the Property in its condition as of the date hereof until the closing date under this Agreement, subject to normal wear-and-tear and seasonal changes, and agree not to commit or permit waste thereon.

19. **Casualty**. In the event that the Property is substantially damaged by fire, flood, or casualty between the date of this Agreement and the date of closing, this Agreement may, at the option of Purchaser, be declared null and void and of no further force or effect, and the Parties shall be released from all obligations hereunder, and Purchaser shall be entitled to a refund of the amount of money, if any, theretofore paid to Sellers.

20. **Headings**. Section headings used herein are for convenience of reference and shall in no way define, limit, or prescribe the scope or intent of any provision under this Agreement.

21. **Terms Survive Closing.** To the extent necessary to carry out all of the terms, obligations, and rights herein, said terms, obligations, and rights shall be deemed not terminated at the time of Closing, nor shall they be merged with the various documents executed and delivered at such time.

22. **Construction.** Words of the masculine gender shall include the feminine and neutral gender, and when the sentence so indicates, words of the neuter gender shall refer to any gender. Words in the singular shall include the plural and vice versa. This Agreement shall be construed according to its fair meaning and as if prepared by both Parties, and shall be deemed to be and contain the entire understanding and agreement between the Parties. There shall be deemed to be no other terms, conditions, promises, understandings, statements, or representations, express or implied, concerning this Agreement unless set forth in writing and signed by both Parties. The applicability of all Sections of this Agreement shall be reasonably construed as a condition precedent to Purchaser exercising the Option, as the context

provides, or as otherwise provided within each Section of this Agreement. Moreover, is the stated goal of the Parties that this Agreement represents, at a minimum, a legally binding mechanism for Purchaser to exercise the Option provided for in Section one (1), properly execute the Notice of Option to Sellers, and for the Agreement to provide the terms and conditions for the conveyance of the Property from Sellers to Purchaser.

23. No Waiver. No waiver by any Party of the performance or satisfaction of any covenant or condition shall be valid unless in writing and shall not be considered to be a waiver by such Party of any other covenant or condition hereunder.

24. Time is of the Essence; Effective Date. It is agreed that time shall be of the essence to this Agreement and each and every provision hereof. The Effective Date of this Agreement shall be defined as the date upon which the last Party signs this Agreement.

25. Right to Inspect.

a. Purchaser shall be permitted to fully inspect the Property at any time up to 120 days after the Notice of Exercise is properly mailed (the "**Inspection Period**"). Sellers agree that Purchaser and its agents, with prior telephonic or email notice to Sellers, may have reasonable access to the Property to conduct such tests and/or inspections, at Purchaser's expense, as Purchaser deems appropriate, including, without limitation, the presence of environmental hazardous waste, underground storage tanks, or other environmental or geological conditions, including, without limitation, any required reclamation activities not completed or water rights augmentation obligations, which could expose Purchaser to future liability for damages or clean-up expenses. Purchaser is responsible for payment for all inspections and tests performed at Purchaser's request ("**Work**") on the Property and must pay for any damage that occurs to the Property as a result of such Work.

b. Notwithstanding anything contained in this Agreement to the contrary, Purchaser shall have the term of the Inspection Period within which to review the Property and any and all matters related to the purchase or financing of the Property, including, without limitation, the Survey, title matters, governmental requirements, environmental conditions, and any other matters which might affect the feasibility of the Property for Purchaser's anticipated use thereof, to determine whether or not Purchaser desires to proceed with the purchase of the Property from Sellers. In the event that Purchaser shall, within the Inspection Period, give written notice to Sellers of Purchaser's decision not to purchase the Property for any of the reasons set forth in this Section 24, then this Agreement shall be null and void and of no effect, the Parties shall be released from any further obligations hereunder,

and any monies paid to Sellers by Purchaser, including the earnest money deposit, shall be returned to Purchaser. Should Purchaser choose to object to the condition of the Property for any reason set forth in this Section 24 within the Inspection Period, the Inspection Period shall be tolled until Sellers make remedy to the satisfaction of Purchaser and any monies paid to Sellers by Purchaser, including the earnest money deposit, shall be returned to Purchaser if Sellers fail to make remedy to the satisfaction of Purchaser.

26. **Binding Effect; Integration.** This Agreement shall be binding upon and inure to the benefit of the Parties and their respective heirs, successors, and assigns. This Agreement contains the entire agreement between the Parties regarding the Property and supersedes all prior agreements, whether written or oral, between the Parties regarding the same subject. This Agreement shall not be modified by either Party by any oral representation made before or after the execution of this Agreement, and all modifications must be in writing signed by Sellers and Purchaser. This Agreement shall be run with the land and will be recorded in the records of the Larimer County Clerk and Recorder.

27. **No Brokers.** Each Party represents to the other that it has not authorized any broker or finder to act on its behalf in connection with the sale and purchase of the Property and that such Party has not dealt with any broker or finder purporting to act on behalf of any such Party. Notwithstanding anything to the contrary contained herein, the provisions of this Section 27 shall survive the Closing of this transaction or any termination of this Agreement.

28. **Counterparts and Electronic Signatures.** For purposes of this Agreement, there may be any number of counterparts, each of which shall be deemed as originals. This Agreement may be executed by electronic signature in accordance with C.R.S § 24-71.3-101 *et seq.*

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the date and year of both Parties' signature, below.

(Signatures appear on the following pages.)

SELLERS:

By: _____
Coulson Excavating Company, Inc.

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing _____
_____was subscribed and sworn to before me this ____ day of _____, 20__ by _____.

Witness my hand and official seal.

My commission expires _____.

_____
Notary Public

PURCHASER:

CITY OF LOVELAND, COLORADO

By: _____
Stephen C. Adams, City Manager
Date: _____

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Assistant City Attorney

WATER LEASE EXHIBIT 1

EXHIBIT G-1

EXHIBIT A
PROPERTY BOUNDARY EXHIBIT

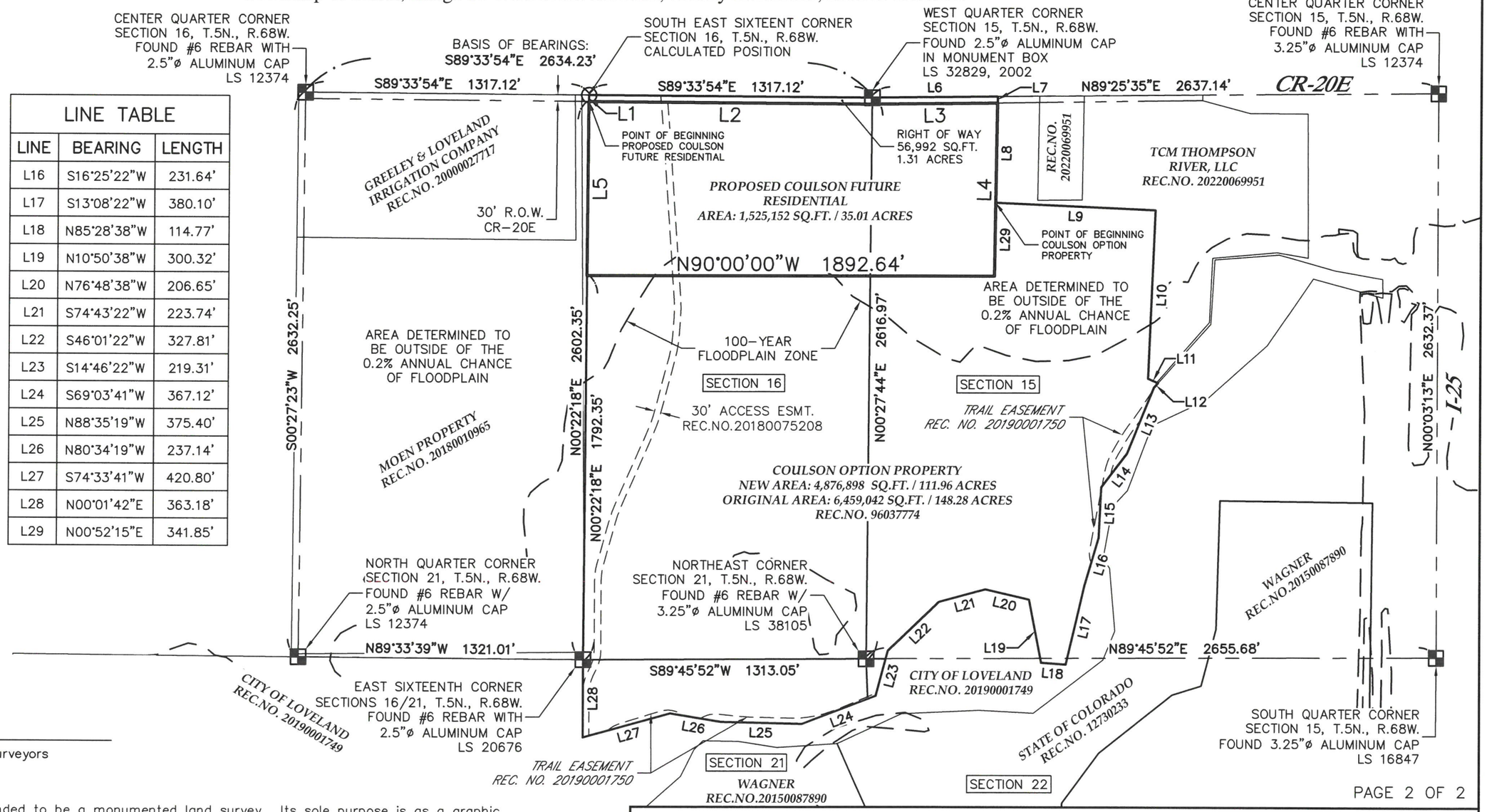
Of 5650 E. County Line Rd. 20E,
Situate in the Southeast Quarter of Section 16, and the Southwest Quarter of Section 15,
and the Northeast Quarter of Section 21 and the Northwest Quarter of Section 22,
Township 05 North, Range 68 West of the 6th P.M., County of Larimer, State of Colorado

LEGEND

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EASEMENT LINE
- SECTION LINE
- FLOODPLAIN BOUNDARY
- FOUND ALIQUOT CORNER AS DESCRIBED
- CALCULATED ALIQUOT CORNER

LINE TABLE		
LINE	BEARING	LENGTH
L1	S00°22'18"W	30.00'
L2	S89°33'54"E	1317.07'
L3	N89°25'35"E	582.63'
L4	S00°52'15"W	805.91'
L5	N00°22'18"E	810.00'
L6	N89°25'35"E	582.85'
L7	S00°52'15"W	30.00'
L8	S00°52'15"W	464.06'
L9	S87°23'25"E	742.21'
L10	S02°20'35"W	784.79'
L11	S65°41'25"E	51.29'
L12	S41°46'22"W	28.35'
L13	S22°12'22"W	332.01'
L14	S37°18'22"W	199.65'
L15	S02°40'22"W	236.24'

LINE TABLE		
LINE	BEARING	LENGTH
L16	S16°25'22"W	231.64'
L17	S13°08'22"W	380.10'
L18	N85°28'38"W	114.77'
L19	N10°50'38"W	300.32'
L20	N76°48'38"W	206.65'
L21	S74°43'22"W	223.74'
L22	S46°01'22"W	327.81'
L23	S14°46'22"W	219.31'
L24	S69°03'41"W	367.12'
L25	N88°35'19"W	375.40'
L26	N80°34'19"W	237.14'
L27	S74°33'41"W	420.80'
L28	N00°01'42"E	363.18'
L29	N00°52'15"E	341.85'



COLORADO LICENSED PAUL B. GROVES 38209 10/6/23 PROFESSIONAL LAND SURVEYOR

Paul B. Groves – On Behalf Of King Surveyors
Colorado Licensed Professional
Land Surveyor #38209

NOTE: This exhibit drawing is not intended to be a monumented land survey. Its sole purpose is as a graphic representation to aid in the visualization of the written property description which it accompanies. The written property description supersedes the exhibit drawing.

NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon. (13-80-105 C.R.S. 2012)

KING SURVEYORS
650 E. Garden Drive | Windsor, Colorado 80550
phone: (970) 686-5011 | fax: (970) 686-5821
email: contact@KingSurveyors.com

PROJECT NO: 20230376
DATE: 10/6/2023
CLIENT: CITY OF LOVELAND PARKS & REC
DWG: 20230376EX
DRAWN: SAF CHECKED: PBG

PROPERTY DESCRIPTION
Coulson Option Property

A parcel of land, being part of the Southeast Quarter (SE1/4) of Section Sixteen (16) and the Southwest Quarter (SW1/4) of Section Fifteen (15) and the Northeast Quarter (NE1/4) of Section Twenty-one (21) and the Northwest Quarter (NW1/4) of Section Twenty-two (22), Township Five North (T.5N.), Range Sixty-eight West (R.68W.) of the Sixth Principal Meridian (6th P.M.), County of Larimer, State of Colorado and being more particularly described as follows:

COMMENCING at the East Quarter corner of said Section 16 and assuming the North line of the Southeast Quarter of said Section 16 as bearing North 89°33'54" West being a Grid Bearing of the Colorado State Plane Coordinate System, North Zone, North American Datum 1983/2011, a distance of 2634.23 feet with all other bearings contained herein relative thereto;

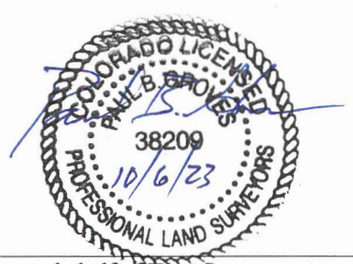
THENCE North 89°25'35" East along the North line of the SW1/4 of said Section 15 a distance of 582.85 feet;
THENCE South 00°52'15" West a distance of 30.00 feet to the Southern Right-Of-Way Line of County Road 20E;
THENCE South 00°52'15" West a distance of 464.06 feet to the **POINT OF BEGINNING**;

THENCE South 87°23'25" East a distance of 742.21 feet;
THENCE South 02°20'35" West a distance of 784.79 feet;
THENCE South 65°41'25" East a distance of 51.29 feet;
THENCE South 41°46'22" West a distance of 28.35 feet;
THENCE South 22°12'22" West a distance of 332.01 feet;
THENCE South 37°18'22" West a distance of 199.65 feet;
THENCE South 02°40'22" West a distance of 236.24 feet;
THENCE South 16°25'22" West a distance of 231.64 feet;
THENCE South 13°08'22" West a distance of 380.10 feet;
THENCE North 85°28'38" West a distance of 114.77 feet;
THENCE North 10°50'38" West a distance of 300.32 feet;
THENCE North 76°48'38" West a distance of 206.65 feet;
THENCE South 74°43'22" West a distance of 223.74 feet;
THENCE South 46°01'22" West a distance of 327.81 feet;
THENCE South 14°46'22" West a distance of 219.31 feet;
THENCE South 69°03'41" West a distance of 367.12 feet;
THENCE North 88°35'19" West a distance of 375.40 feet;
THENCE North 80°34'19" West a distance of 237.14 feet;
THENCE South 74°33'41" West a distance of 420.80 feet;
THENCE North 00°01'42" East a distance of 363.18 feet to the East Sixteenth Corner of Sections 16 and 21;
THENCE North 00°22'18" East along the West line of the West Half of the SE1/4 of Section 16 a distance of 1792.35 feet;
THENCE North 90°00'00" East a distance of 1892.64 feet;
THENCE North 00°52'15" East a distance of 341.85 feet to the **POINT OF BEGINNING**.

Said described parcel of land contains 4,876,898 Square Feet or 111.96 Acres, more or less (±), and is subject to any rights-of-way or other easements of record or as now existing on said described parcel of land.

SURVEYORS STATEMENT

I, Paul B. Groves, a Colorado Licensed Professional Land Surveyor do hereby state that this Property Description was prepared under my personal supervision and checking, and that it is true and correct to the best of my knowledge and belief.



Paul B. Groves - on behalf of King Surveyors
Colorado Licensed Professional
Land Surveyor #38209

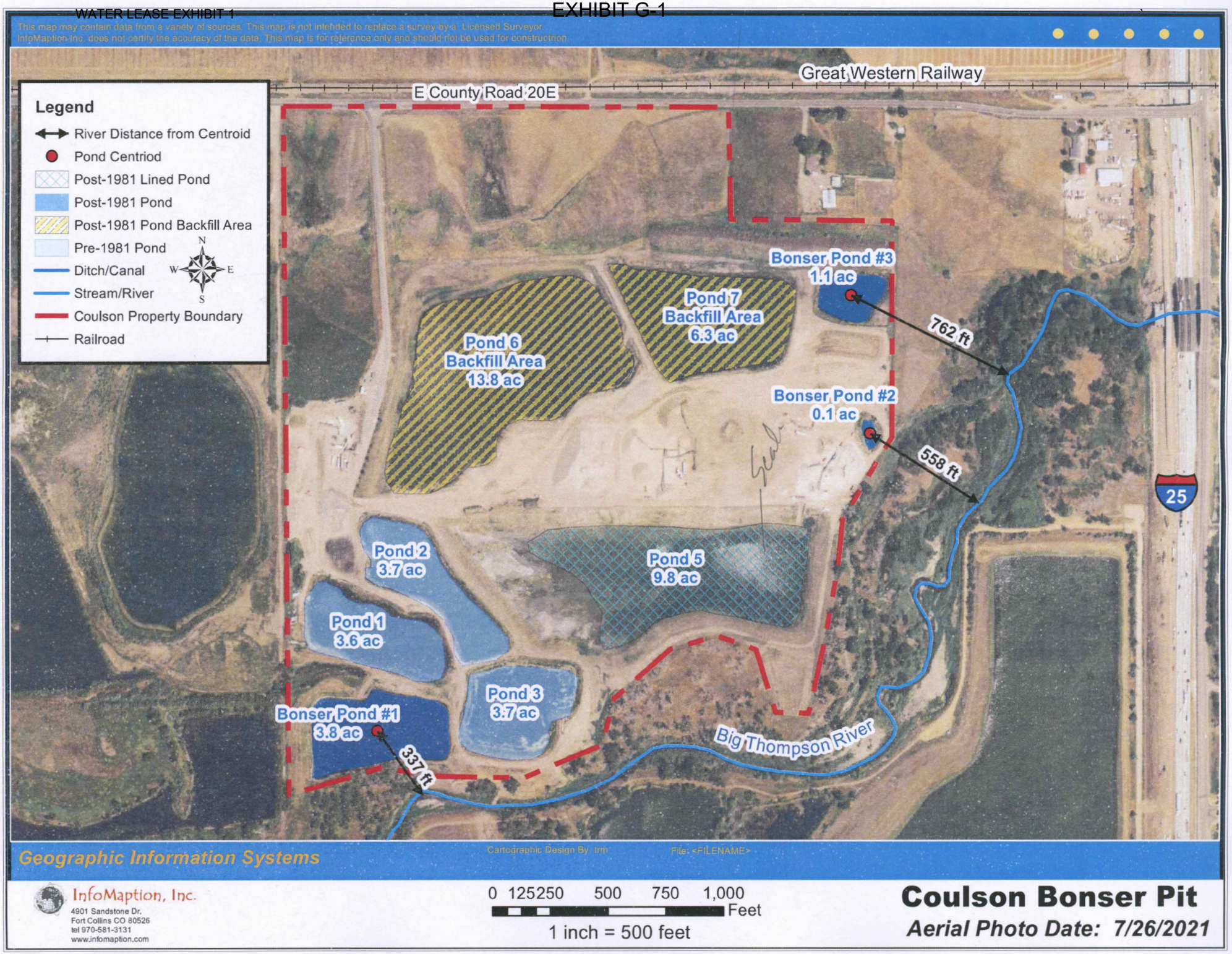
KING SURVEYORS
650 East Garden Drive

Windsor, Colorado 80550
(970) 686-5011

EXHIBIT C

EXHIBIT G-1

WATER LEASE EXHIBIT 1



PROPERTY DESCRIPTION
Proposed Coulson Future Residential

A parcel of land, being part of the Southeast Quarter (SE1/4) of Section Sixteen (16) and the Southwest Quarter (SW1/4) of Section Fifteen (15), Township Five North (T.5N.), Range Sixty-eight West (R.68W.) of the Sixth Principal Meridian (6th P.M.), County of Larimer, State of Colorado and being more particularly described as follows:

COMMENCING at the Center Quarter corner of said Section 16 and assuming the North line of the SE1/4 of said Section 16 as bearing South 89°33'54" East being a Grid Bearing of the Colorado State Plane Coordinate System, North Zone, North American Datum 1983/2011, a distance of 2634.23 feet with all other bearings contained herein relative thereto;

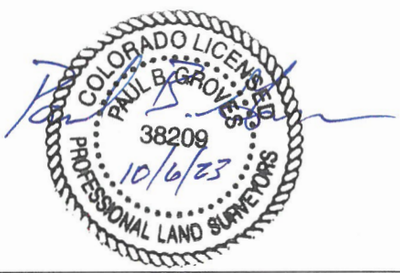
THENCE South 89°33'54" East along the North line of the SE1/4 of Section 16, a distance of 1317.12 feet to the Center-East 16th Corner of said Section 16;
THENCE South 00°22'18" West along the West line of the West Half of the SE1/4 of Section 16 a distance of 30.00 feet to the Southern Right-Of-Way Line of County Road 20E and the **POINT OF BEGINNING**;

THENCE South 89°33'54" East along said Southern Right-Of-Way, a distance of 1317.07 feet;
THENCE North 89°25'35" East a distance of 582.63 feet;
THENCE South 00°52'15" West a distance of 805.91 feet;
THENCE North 90°00'00" West a distance of 1892.64 feet to the West line of the West Half of the SE1/4 of Section 16;
THENCE North 00°22'18" East along said West line, a distance of 810.00 feet to the **POINT OF BEGINNING**.

Said described parcel of land contains 1,525,152 Square Feet or 35.01 Acres, more or less (±), and is subject to any rights-of-way or other easements of record or as now existing on said described parcel of land.

SURVEYORS STATEMENT

I, Paul B. Groves, a Colorado Licensed Professional Land Surveyor do hereby state that this Property Description was prepared under my personal supervision and checking, and that it is true and correct to the best of my knowledge and belief.



Paul B. Groves - on behalf of King Surveyors
Colorado Licensed Professional
Land Surveyor #38209

KING SURVEYORS
650 East Garden Drive
Windsor, Colorado 80550
(970) 686-5011

EXHIBIT G1

EXHIBIT 2 - WATER LEASE AGREEMENT

Geographic Information Systems

Cartographic Design By: trm

File: <FILENAME>

InfoMaption, Inc.
4901 Sandstone Dr.
Fort Collins CO 80526
tel 970-581-3131
www.infomaption.com

0 125 250 500 750 1,000 Feet

1 inch = 490 feet

Coulson Gardels Pit

Aerial Photo Date: 7/26/21

ADDENDUM I

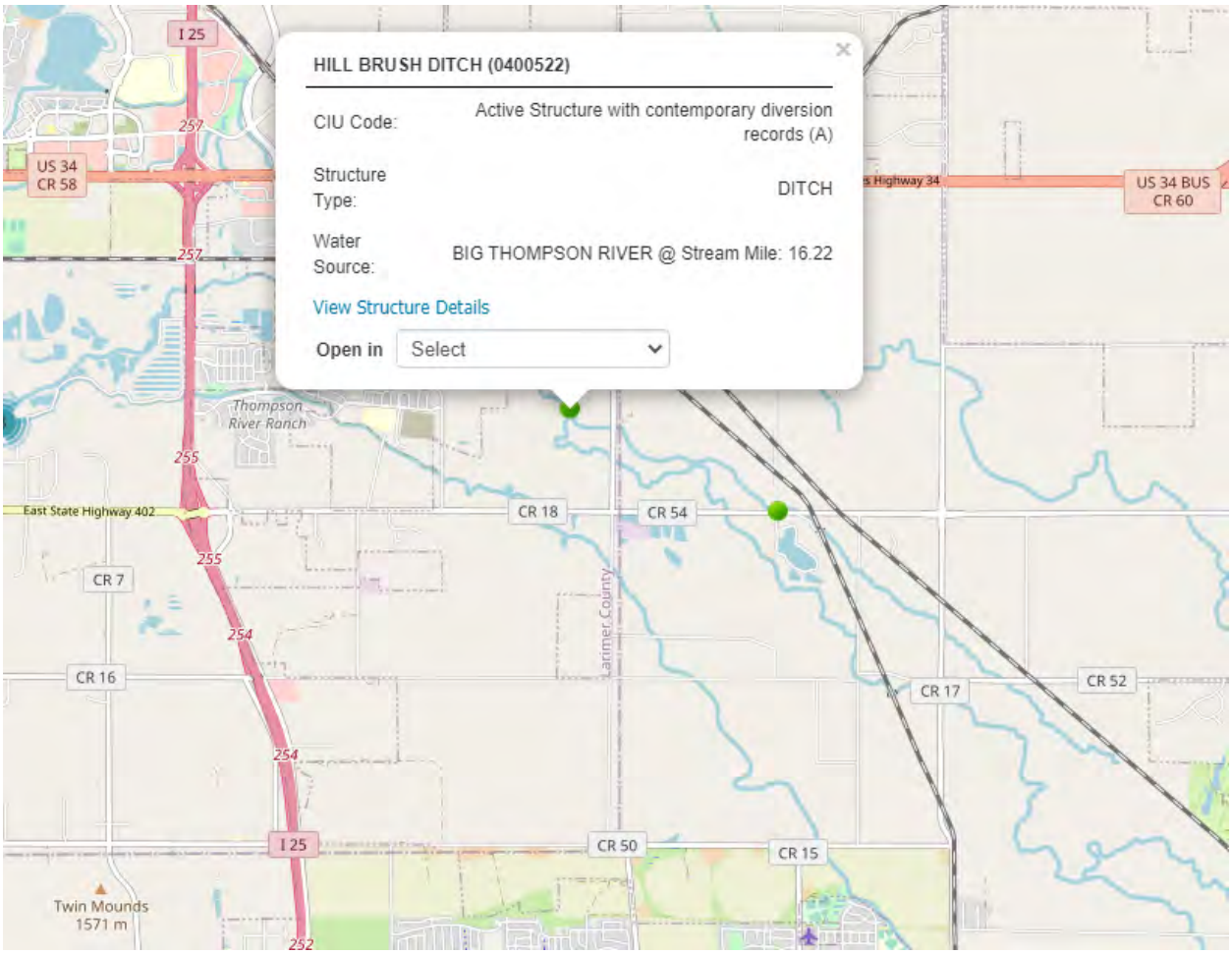
Hill and Brush Historical Consumptive Use Analysis

Paul Weiss, P.E.
Williams and Weiss Consulting
May 2023

The Hill and Brush (H&B) ditch is a mutual ditch company comprised of 128 outstanding shares. Coulson Excavating Company, Inc. (CEC) intends to change the use on 19 of the 26 shares that were historically used on the Pfeif/Challenger farm. A study period of 1955 – 1986 has been used to analyze and quantify the historical consumptive use (HCU) of the share water.

The H&B ditch is located on the lower portion of the Big Thompson River and its Water District identification number (WDID) is 0400522. The headgate is built on the north side of the river, and the ditch follows a south and east flow path generally paralleling the Big Thompson River. Diversions under the H&B generally begin in late April and early May and rarely divert past September. The ditch superintendent adjusts the river headgate in coordination with the Big Thompson water commissioner, although all farm headgates are operated by individual shareholders and irrigators.

Figure 1: H&B Headgate Location



Section 1 Hill and Brush Water Rights

The original direct flow water right was decreed for 61.081 cfs for irrigation. In case 84CW0204 34.801 cfs were abandoned, leaving 27.00 cfs as absolute with a June 30, 1866 appropriation date. The administrative priority for this right is 6025.00000. There have been no water court change of use decrees under the Hill and Brush ditch. By virtue of its 19 shares, CEC has a pro-rata river headgate allocation of 4.01 cfs.

Historical monthly deliveries under the 27.00 cfs right were developed using CDSS Hydrobase data. Monthly time series were queried under the S:1 U:1 water class. Additionally, daily data was queried under the same S:1 U:1 class to verify that daily diversions did not exceed 27 cfs. There were 13 days in the 1955-86 period of record that exceeded 27 cfs. Accordingly, the corresponding monthly values were reduced to reflect a maximum daily diversion of 27 cfs.

Table 1. Reduction in Historical Deliveries

Month	Reduction (AF)
Aug-78	7.93
Jul-78	7.93
Jun-78	27.77
Jun-71	11.90
Jul-62	21.62

For the selected study period of 1955-86, the annual average river headgate diversion under the direct flow right is 2021.46 AF (Appendix A-1). After correcting for recorded direct flows greater than 27.00 cfs, the annual average headgate diversion is 2019.05 AF (Appendix A-2). Finally, the average annual headgate diversion pro-rated for 26 shares is 410.12 AF (Appendix A-3), or 15.77 AF per share.

Section 2 Pfeif/Challenger Farm

The Pfeif/Challenger Farm was historically irrigated with 26 shares of H&B by the Pfeif family from 1944 to 1981. In 1981 the land and water rights were sold to Albert Challenger, and the land was farmed through 1986. In 1987 the Challenger Pit mining operation began mining gravel at the location under Permit #M1985-026. Mining operations ceased in 2000's, and the land has since been subdivided into the Heritage Crossing PUD and the Lakota Lakes PUD, and recorded exemptions for the parcels north of the railroad easement. Of the original 26 H&B shares, 19 are currently owned by CEC. The 19 shares owned by CEC have been used in temporary substitute water plans to offset evaporative depletions from the unlined ponds.

All irrigation water was supplied by ditch deliveries. No groundwater wells existed on the Pfeif Farm.

Section 3 Historical Consumptive Use Analysis

The study period for the Pfeif/Challenger farm is 1955-1986, coinciding with readily available data from the State's CDSS Hydrobase and with the transition from farming to gravel mining on the property. The 1955-1986 study period contains representative periods of dry and wet year flows on the Big Thompson River. For this analysis, all 26 shares used on the Pfeif/Challenger Farm were considered and results are pro-rated for the 19 shares being considered in the Substitute Water Supply Plan.

Climate Data

The primary weather station used for data acquisition is the NOAA Fort Collins weather station, which has an 1893-2022 period of record. Pre-developed datasets for this station are available via the CDSS StateCU input files for Division 1, and through templates provided by IDSCU. Values for several climate data types for the two datasets (StateCU and IDSCU) were compared and found to be nearly identical.

Soils Data

Information for the soil types underlying the Pfeif/Challenger Farm were acquired through the NRCS Soil Survey website. The soils distribution consists of 33.1% Aquolls and Aquepts, 41.7% Colby loam, and 25.2% Kim loam. Corresponding available water holding capacities for these soil types were derived from the Soil Conservation Service National Engineering Handbook, Section 15; Irrigation. This information was then used to compute the weighted average holding capacity of 1.65 (in/ft) for the historical farm.

Farming Practices

A site tour of the Hill and Brush ditch system, and the Pfeif/Challenger farm was performed on October 25, 2022. In attendance at the tour was Jim Croissant, the Hill and Brush ditch superintendent. Mr. Croissant is familiar with historical operations at the Pfeif/Challenger farm, and farmed it himself from 1982 to 1986. According to Mr. Croissant, the Hill and Brush delivery loss is on the order of 15%. These losses are frequently offset by gains into the ditch originating from runoff from up gradient farms and seepage from the up gradient Farmers Ditch. Ditch turnouts from the Hill and Brush to individual farms are controlled by the land owners, not the ditch superintendent. The concrete turnout structures are sized based upon the share ownership in the Hill and Brush, and correspond to an inch opening per share. This allows the superintendent to visually confirm the correct amount of water is being turned out of the ditch. There are no recording devices on the ditch turnouts for the Pfeif/Challenger farm. From the ditch turnout, waster travels down an unlined ditch for approximately 600 feet to the Pfeif/Challenger farm. For purposes of quantifying monthly deliveries to the farm, it is estimated that 15% of the pro-rata river headgate diversion would ultimately reach the Pfeif/Challenger farm.

The historical cropping pattern on the Pfeif/Challenger farm consisted of corn (silage), alfalfa, spring grains (barley) and pasture grass. The corn was irrigated using a row and furrow system, while the pasture grass, barley, and afalfa was flood irrigated with bermed borders. The land nearest the river was sub-irrigated at times due to high groundwater levels. These sections of the farm were always planted with pasture grass. The acreages in production for the four crops is based upon historical aerial photography (Appendix B1-B3), and information provided by Mr. Croissant as described in the affidavit of historical use.

Table 2. Irrigated Acreage for 1955 to 1986 Study Period

Crop Type	1955 - 1968	1969 - 1981	1982 - 1986
Alfalfa	21.7	21.7	19.7
Corn (Silage)	21.7	21.7	39.4
Pasture Grass	49.5	50.1	53.0
Barley	21.7	21.7	0
Total acreage	114.5	115.1	112.1

CDSS Map Viewer was used to identify nearby groundwater monitoring wells. A couple wells in the general vicinity had limited data on depth to groundwater in the range of 9' to 6'. The irrigated fields at the Challenger Farm had a distinct groundwater elevation difference between the upper fields and the lower fields near the river. Based upon this data, and information collected during the site visit, it is estimated that the average depth to groundwater for the areas planted in corn, alfalfa, and barley was 6 to 7', and the average depth to groundwater for the areas planted in pasture grass was 4'.

IDSCU Model

Crop consumptive use is referred to as evapotranspiration (ET), and is based upon a relationship between crop, climate, water, and soil. Direct measurement of ET rates is difficult and requires considerable instrumentation. Therefore, the measurement of climatic factors is most often used to estimate ET based on an equation or model that relates the climatic factors to the ET rate. Several models or equations are available for estimating crop ET. In Colorado, the Blaney-Criddle method is commonly used to establish historical consumptive use estimates and is often used as the standard for water court proceedings. The following sections describe the data acquisition and processing tasks.

The consumptive use of Hill and Brush water was calculated using the Integrated Decision Support Consumptive Use Model (IDSCU-Version 3.3.162). The model was executed for a 32-year period of record (1955-1986) using the Blaney-Criddle ET method. This is a monthly time step method developed initially by the Natural Resources Conservation Service (formerly the Soil Conservation Service). It uses temperature, precipitation, and crop data information. For the evapotranspiration calculations, the Blaney-Criddle default crop coefficients were adjusted to account for lower mean temperatures that occur at higher elevations for a given level of solar radiation. Per ASCE and CDSS documentation, consumptive use estimates should be increased by 10% for each 1,000 meters increase in elevation above sea level. Provided below is a description of the parameterization of key variables and coefficients as used for the Blaney-Criddle ET method:

- Cropping Patterns: The cropping patterns were established based upon information provided by Jim Croissant.
- Weather Data: Climate data for the Fort Collins, Colorado NOAA station served as the primary source. The template provided by IDSCU contained a full period of record for all required climate types.

- Soils Type: The soil types used for the consumptive use analysis were determined from the NRCS Soil Survey database. The soils on the farm are aquets and loams. An average farm-wide value of 1.65 in/ft was used in the IDSCU model. Actual soil storage is based on the water holding capacity of the soil and the maximum root depth of the crop.
- Crop Coefficients: The model's default crop coefficients were adjusted for elevation. Based upon the farm elevation of 4,790 feet, the coefficients were increased by 14.6%.
- Surface Supplies: the Hill and Brush historical diversion data was used to populate the monthly surface water supply distributions table. An ownership level of 26 shares was designated.
- System Efficiency: the maximum application efficiency was set at 65% for corn, and 55% for pasture grass, alfalfa, and barley reflecting the farming practices on the property.
- Soil Moisture Reservoir: IDSCU has several parameters that describe how soil moisture affects the water budget. For this analysis, the fraction of winter precipitation carryover was set at 50%. This means that up to 50% of the winter precipitation was made available for soil storage each year. The extra soil moisture will contribute to the water available during the growing season, lowering the amount of surface or ground water required. The fraction of MaxAllowSW at start of simulation was set to 1.
- Effective Rainfall: The SCS method was selected for calculating effective rainfall, with the net depth of application set to 3 inches, which is a standard value used for average soils of loamy nature. Rainfall amounts greater than the effective rainfall are made available for soil storage, up to its holding capacity

The IDSCU model was simulated for the 32-year period of record, 1955-1986. For the given scenario, the average farm consumptive use from 26 shares of H&B ditch water is 183.90 AF, or 7.07 AF per share. This serves as an initial estimate of historical consumptive use (HCU).

As described earlier, high groundwater existed on the irrigated parcels and as a result a portion of the crops' consumptive use will have been met by the groundwater. Consumptive use met by groundwater must be subtracted from the initial estimate of ditch water HCU. According to tables developed by the State's Division of Water Resources, groundwater depths at a level of 6 to 7 feet can account for up to 15% of the consumptive use for alfalfa, and groundwater depths at a level of 4 feet can account for up to 20% of the consumptive use for grass. No reduction would have occurred for corn or barley, as their root systems do not reach a depth of 6 feet.

Table 3. Crop Reduction Percentages for Ground Water

Depth to Ground Water (Feet)	Percent Reduction in CU Credit[1]	
	Native Grass	Alfalfa
1	85%	100%
2	50%	90%
3	30%	75%
4	20%	50%
5	15%	35%
6	10%	20%
7	5%	15%
8	0%	10%

1. Adapted from *EVAPOTRANSPIRATION AND AGRONOMIC RESPONSES IN FORMERLY IRRIGATED MOUNTAIN MEADOWS, South Park, Colorado*, March 1, 1990; Revised September 1, 1991

To account for the effects of the high groundwater, intermediate IDSCU runs were performed independently for Alfalfa and Grass. These intermediate runs are used to establish the potential reduction in HCU using the IDSCU's monthly net water requirement value (NWR) multiplied by the percent reduction, which were 20% for grass and 15% for alfalfa. The final step was to reduce the monthly on farm depletion of surface water, taking into account months with surface water shortages. In months with shortages, the actual reduction can be no greater than the potential reduction minus the actual on farm shortage.

Following the logic described above, the annual average HCU for H&B ditch water was reduced by 18.20 AF, resulting in 165.70 AF of HCU, or 6.37 AF per share. Based upon the average on farm delivery of 13.41 AF per share, the net efficiency of the share water is 47%. For the 19 H&B shares being considered in this case, the annual HCU is 121.09 AF.

Water balance results for the HCU analysis are provided in Appendix C.

Section 4 Return Flow Analysis

Based upon the HCU analysis performed for the Pfeif/Challenger Farm, the annual farm delivery of 13.41 AF per share resulted in 6.37 AF of consumptive use and 7.03 AF of runoff. The runoff can be separated into a surface component that returns to the natural waterway intra-monthly and a sub-surface, or groundwater, component that returns to the natural waterway over a period of months or even years. Based upon the immediate proximity to the Big Thompson River, and common runoff patterns for flood irrigation and row and furrow irrigation (Farm Irrigation Rating Index (FIRI), USDA-SCS, 1991), the runoff from the Pfeif/Challenger farm is distributed as 55% surface and 45% sub-surface. Due to the short distance of the farm to the Big Thompson River, a significant percentage of the sub-surface runoff will return to the river in the first month.

The groundwater component of the farm runoff was modeled using the IDS Alluvial Water Accounting System software (IDSAWAS – version 1.5.85). Conceptually, the model computes stream depletions or accretions by a well pumping from, or recharging to, an aquifer hydraulically connected to the stream. For irrigation water return flow analysis, the IDSWAS Glover Equation can be applied to quantify steady-

state, subsurface return flow patterns on a monthly time step. The required input parameters are: W= distance from the stream to an impermeable boundary, X= distance from the stream to the recharge well (or in this case, the centroid of the farm), transmissivity, and specific yield. The distance from the centroid of the Pfeif/Challenger Farm to the Big Thompson River was used for X, and is 694 feet. The distance from the Big Thompson River to the low yielding stratum (Pierre Shale formation north of the property and running generally parallel to the river), as identified using the CDSS Map Viewer maps, was used for W, and is 1700 feet. The value for specific yield value of 0.2 is based upon published specific yield tables (McWhorter, 1977). The transmissivity value of 35,062 gpd/ft is derived from the transmissivity contours provided in Map Viewer and a weighted average of the farm land. Prior sampling of underlying soils supports a transmissivity in this range.

Results from IDSAWAS show that 99% of the lagged groundwater returns would have occurred within a 12 month period, and that 36% would have returned in the first month. Based upon the historical farm deliveries and computed farm runoff from the HCU analysis, the steady-state groundwater returns for the 19 H&B shares used on the Pfeif/Challenger Farm can be estimated.

Table 4. Monthly Farm Runoff and Historical Return Patterns for 19 shares of H&B (acre-feet)

	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
Runoff	0.00	0.00	0.00	0.00	13.17	37.55	50.31	25.77	6.03	0.83	0.00	0.00	133.66
Surface	0.00	0.00	0.00	0.00	7.24	20.65	27.67	14.17	3.31	0.46	0.00	0.00	73.51
Sub-surf	0.00	0.00	0.00	0.00	5.93	16.90	22.64	11.60	2.71	0.37	0.00	0.00	60.15
Lagged	0.82	0.45	0.24	0.13	2.23	8.12	14.60	14.45	9.53	5.25	2.81	1.52	60.15
Total	0.82	0.45	0.24	0.13	9.47	28.77	42.27	28.62	12.84	5.71	2.81	1.52	133.66

Section 5 HCU Summary

The following table summarizes deliveries, consumptive use, and runoff for the 19 shares of H&B historically used at the Pfeif / Challenger Farm for the 1955 to 1986 study period.

Table 5. HCU Summary

Water Balance For Pfeif / Challenger Farm for 19 Shares of Hill and Brush (units acre-feet)

	River Diversion	Conveyance Loss	Farm Delivery	Consumptive Use	Runoff	Retrun Flows
Jan	0.00	0.00	0.00	0.00	0.00	0.82
Feb	0.00	0.00	0.00	0.00	0.00	0.45
Mar	0.00	0.00	0.00	0.00	0.00	0.24
Apr	0.00	0.00	0.00	0.00	0.00	0.13
May	29.41	4.41	24.99	11.83	13.17	9.47
Jun	84.26	12.64	71.62	34.07	37.55	28.77
Jul	111.43	16.71	94.71	44.41	50.31	42.27
Aug	60.31	9.05	51.27	25.50	25.77	28.62
Sep	12.45	1.87	10.58	4.56	6.03	12.84
Oct	1.85	0.28	1.57	0.74	0.83	5.71
Nov	0.00	0.00	0.00	0.00	0.00	2.81
Dec	0.00	0.00	0.00	0.00	0.00	1.52
Annual	299.70	44.96	254.75	121.09	133.66	133.66

Appendix A-1. Headgate Diversions under Native Right (acre-feet)

year	nov	dec	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	total
1955	0	0	0	0	0	0	223.74	752.54	745.6	614.49	0	0	2336.36
1956	0	0	0	0	0	0	513.92	782.49	565.69	568.87	272.14	0	2703.11
1957	0	0	0	0	0	0	0	535.74	808.87	452.24	89.26	0	1886.11
1958	0	0	0	0	0	0	0	672.6	709.1	511.74	71.41	0	1964.86
1959	0	0	0	0	0	0	39.67	491.31	676.57	404.63	19.84	0	1632.02
1960	0	0	0	0	0	0	267.97	779.12	1055.02	140.83	0	0	2242.94
1961	0	0	0	0	0	0	112.19	546.65	786.46	413.98	242.05	0	2101.32
1962	0	0	0	0	0	0	776.94	806.89	1408.09	541.5	474.85	104.33	4112.59
1963	0	0	0	0	0	0	765.04	746.39	731.51	777.53	183.47	0	3203.95
1964	0	0	0	0	0	0	597.03	1060.18	1269.44	355.05	0	293.56	3575.26
1965	0	0	0	0	0	0	412.57	825.14	773.57	720.01	55.54	0	2786.82
1966	0	0	0	0	0	0	240	829.1	581.17	105.13	0	0	1755.4
1967	0	0	0	0	0	0	202.32	386.78	527.61	466.12	41.65	0	1624.49
1968	0	0	0	0	0	0	115.04	803.32	882.66	364.96	0	0	2165.98
1969	0	0	0	0	0	0	120.99	664.47	874.72	119.01	75.37	0	1854.57
1970	0	0	0	0	0	0	190.42	478.02	672.41	608.93	69.42	0	2019.2
1971	0	0	0	0	0	0	91.24	860.84	569.26	422.49	55.54	0	1999.37
1972	0	0	0	0	0	0	366.95	507.78	678.36	71.41	0	0	1624.49
1973	0	0	0	0	0	0	33.72	741.83	712.08	464.14	0	0	1951.76
1974	0	0	0	0	0	0	456.21	456.21	868.77	309.43	0	0	2090.61
1975	0	0	0	0	0	0	275.71	470.09	1198.03	809.27	0	0	2753.1
1976	0	0	0	0	0	0	236.04	559.35	902.49	678.36	359.01	0	2735.25
1977	0	0	0	0	0	0	89.26	805.3	27.77	0	0	0	922.33
1978	0	0	0	0	0	0	0	575.22	1344.81	686.29	0	0	2606.32
1979	0	0	0	0	0	0	0	81.32	573.23	495.88	160.66	0	1311.09
1980	0	0	0	0	0	0	0	257.86	372.9	230.09	0	0	860.84
1981	0	0	0	0	0	0	0	251.9	648.6	0	0	0	900.51
1982	0	0	0	0	0	0	0	0	476.04	636.7	0	0	1112.74
1983	0	0	0	0	0	0	0	35.7	511.74	255.87	138.85	0	942.16
1984	0	0	0	0	0	0	0	481.99	773.57	382.82	325.29	0	1963.67
1985	0	0	0	0	0	0	0	541.5	684.31	124.96	0	0	1350.76
1986	0	0	0	0	0	0	212.23	416.54	640.67	277.69	49.59	0	1596.72
Average	0	0	0	0	0	0	198.10	568.88	751.60	406.58	83.87	12.43	2021.46

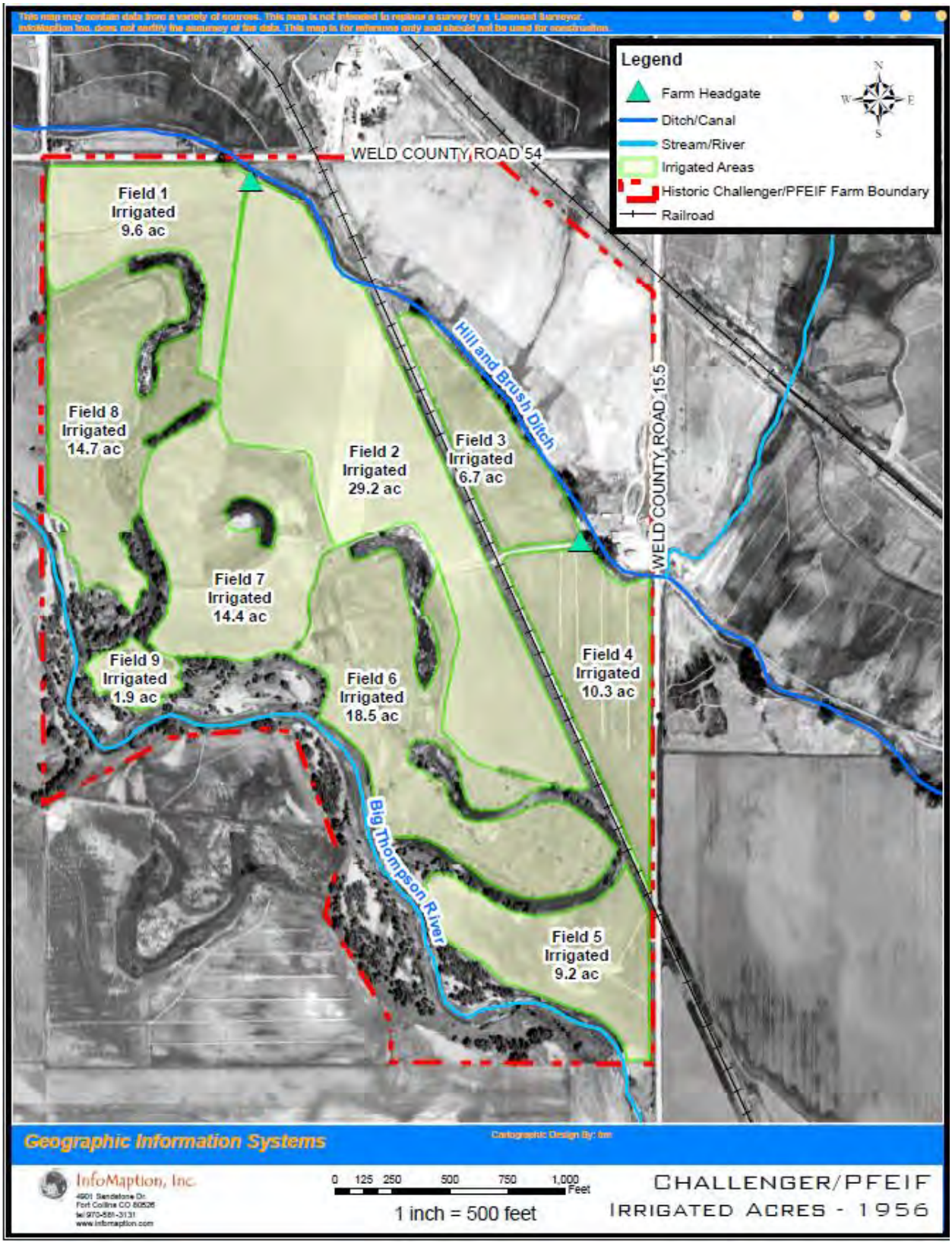
Appendix A-2. Adjusted Headgate Diversions under Native Right (acre-feet)

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
1955	0	0	0	0	223.74	752.54	745.6	614.49	0	0	0	0	2336.37
1956	0	0	0	0	513.92	782.49	565.69	568.87	272.14	0	0	0	2703.11
1957	0	0	0	0	0	535.74	808.87	452.24	89.26	0	0	0	1886.11
1958	0	0	0	0	0	672.6	709.1	511.74	71.41	0	0	0	1964.85
1959	0	0	0	0	39.67	491.31	676.57	404.63	19.84	0	0	0	1632.02
1960	0	0	0	0	267.97	779.12	1055.02	140.83	0	0	0	0	2242.94
1961	0	0	0	0	112.19	546.65	786.46	413.98	242.05	0	0	0	2101.33
1962	0	0	0	0	776.94	806.89	1386.47	541.5	474.85	104.33	0	0	4090.98
1963	0	0	0	0	765.04	746.39	731.51	777.53	183.47	0	0	0	3203.94
1964	0	0	0	0	597.03	1060.18	1269.44	355.05	0	293.56	0	0	3575.26
1965	0	0	0	0	412.57	825.14	773.57	720.01	55.54	0	0	0	2786.83
1966	0	0	0	0	240	829.1	581.17	105.13	0	0	0	0	1755.40
1967	0	0	0	0	202.32	386.78	527.61	466.12	41.65	0	0	0	1624.48
1968	0	0	0	0	115.04	803.32	882.66	364.96	0	0	0	0	2165.98
1969	0	0	0	0	120.99	664.47	874.72	119.01	75.37	0	0	0	1854.56
1970	0	0	0	0	190.42	478.02	672.41	608.93	69.42	0	0	0	2019.20
1971	0	0	0	0	91.24	848.939	569.26	422.49	55.54	0	0	0	1987.47
1972	0	0	0	0	366.95	507.78	678.36	71.41	0	0	0	0	1624.50
1973	0	0	0	0	33.72	741.83	712.08	464.14	0	0	0	0	1951.77
1974	0	0	0	0	456.21	456.21	868.77	309.43	0	0	0	0	2090.62
1975	0	0	0	0	275.71	470.09	1198.03	809.27	0	0	0	0	2753.10
1976	0	0	0	0	236.04	559.35	902.49	678.36	359.01	0	0	0	2735.25
1977	0	0	0	0	89.26	805.3	27.77	0	0	0	0	0	922.33
1978	0	0	0	0	0	547.451	1336.88	678.36	0	0	0	0	2562.68
1979	0	0	0	0	0	81.32	573.23	495.88	160.66	0	0	0	1311.09
1980	0	0	0	0	0	257.86	372.9	230.09	0	0	0	0	860.85
1981	0	0	0	0	0	251.9	648.6	0	0	0	0	0	900.50
1982	0	0	0	0	0	0	476.04	636.7	0	0	0	0	1112.74
1983	0	0	0	0	0	35.7	511.74	255.87	138.85	0	0	0	942.16
1984	0	0	0	0	0	481.99	773.57	382.82	325.29	0	0	0	1963.67
1985	0	0	0	0	0	541.5	684.31	124.96	0	0	0	0	1350.77
1986	0	0	0	0	212.23	416.54	640.67	277.69	49.59	0	0	0	1596.72
Average	0	0	0	0	198.1	567.64	750.67	406.33	83.87	12.43	0.00	0.00	2019.05

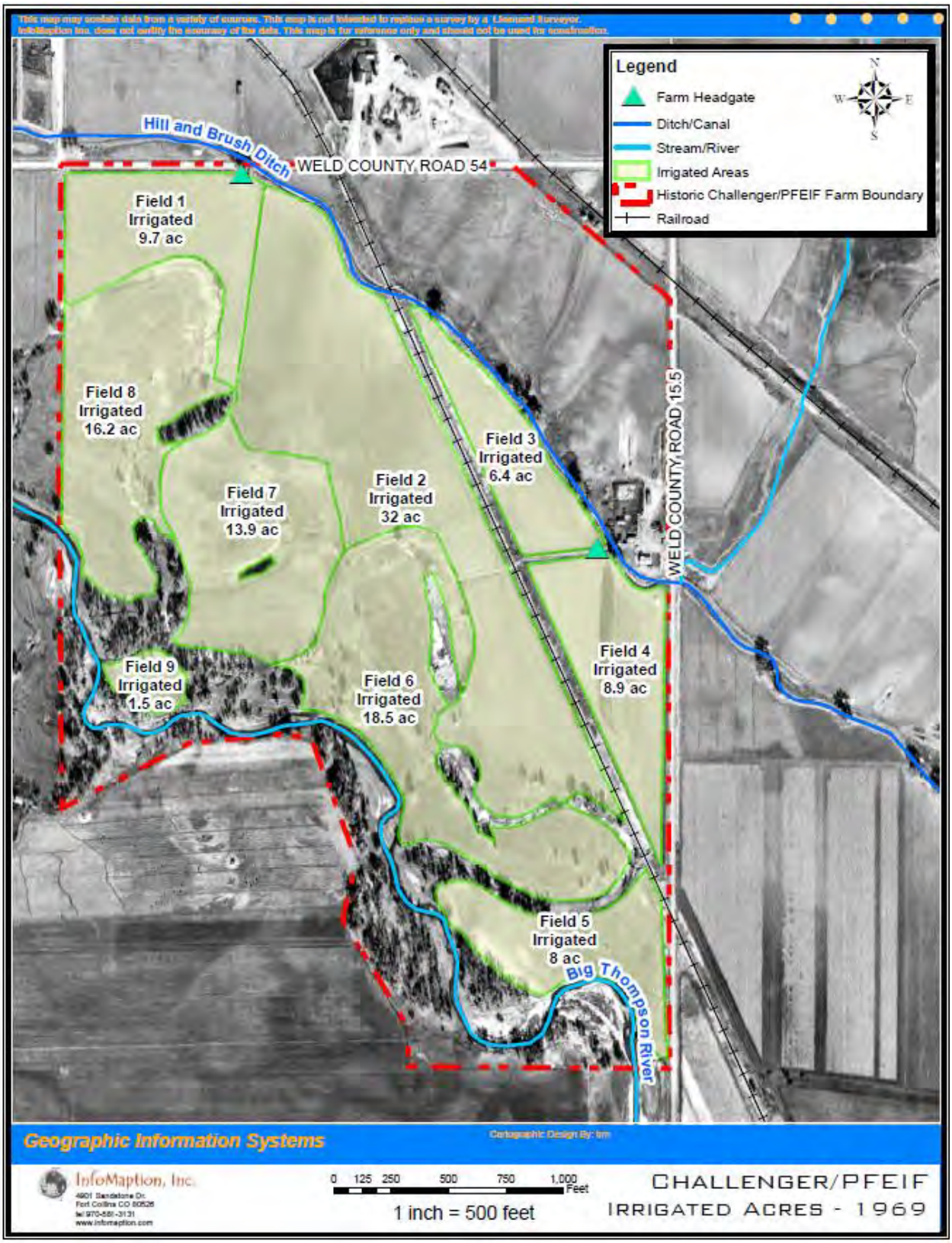
Appendix A-3. Headgate Diversions to Pfeif / Challenger Farm (acre-feet)

year	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec	total
1955	0	0	0	0	45.45	152.86	151.45	124.82	0	0	0	0	474.58
1956	0	0	0	0	104.39	158.94	114.91	115.55	55.28	0	0	0	549.07
1957	0	0	0	0	0	108.82	164.30	91.86	18.13	0	0	0	383.12
1958	0	0	0	0	0	136.62	144.04	103.95	14.51	0	0	0	399.11
1959	0	0	0	0	8.06	99.80	137.43	82.19	4.03	0	0	0	331.50
1960	0	0	0	0	54.43	158.26	214.30	28.61	0	0	0	0	455.60
1961	0	0	0	0	22.79	111.04	159.75	84.09	49.17	0	0	0	426.83
1962	0	0	0	0	157.82	163.90	281.63	109.99	96.45	21.19	0	0	830.98
1963	0	0	0	0	155.40	151.61	148.59	157.94	37.27	0	0	0	650.80
1964	0	0	0	0	121.27	215.35	257.86	72.12	0	59.63	0	0	726.22
1965	0	0	0	0	83.80	167.61	157.13	146.25	11.28	0	0	0	566.07
1966	0	0	0	0	48.75	168.41	118.05	21.35	0	0	0	0	356.57
1967	0	0	0	0	41.10	78.56	107.17	94.68	8.46	0	0	0	329.97
1968	0	0	0	0	23.37	163.17	179.29	74.13	0	0	0	0	439.96
1969	0	0	0	0	24.58	134.97	177.68	24.17	15.31	0	0	0	376.71
1970	0	0	0	0	38.68	97.10	136.58	123.69	14.10	0	0	0	410.15
1971	0	0	0	0	18.53	172.44	115.63	85.82	11.28	0	0	0	403.70
1972	0	0	0	0	74.54	103.14	137.79	14.51	0	0	0	0	329.98
1973	0	0	0	0	6.85	150.68	144.64	94.28	0	0	0	0	396.45
1974	0	0	0	0	92.67	92.67	176.47	62.85	0	0	0	0	424.66
1975	0	0	0	0	56.00	95.49	243.35	164.38	0	0	0	0	559.22
1976	0	0	0	0	47.95	113.62	183.32	137.79	72.92	0	0	0	555.60
1977	0	0	0	0	18.13	163.58	5.64	0	0	0	0	0	187.35
1978	0	0	0	0	0	111.20	271.55	137.79	0	0	0	0	520.54
1979	0	0	0	0	0	16.52	116.44	100.73	32.63	0	0	0	266.32
1980	0	0	0	0	0	52.38	75.75	46.74	0	0	0	0	174.86
1981	0	0	0	0	0	51.17	131.75	0	0	0	0	0	182.91
1982	0	0	0	0	0	0	96.70	129.33	0	0	0	0	226.03
1983	0	0	0	0	0	7.25	103.95	51.97	28.20	0	0	0	191.38
1984	0	0	0	0	0	97.90	157.13	77.76	66.07	0	0	0	398.87
1985	0	0	0	0	0	109.99	139.00	25.38	0	0	0	0	274.38
1986	0	0	0	0	43.11	84.61	130.14	56.41	10.07	0	0	0	324.33
Average	0	0	0	0	40.24	115.30	152.48	82.54	17.04	2.53	0.00	0.00	410.12

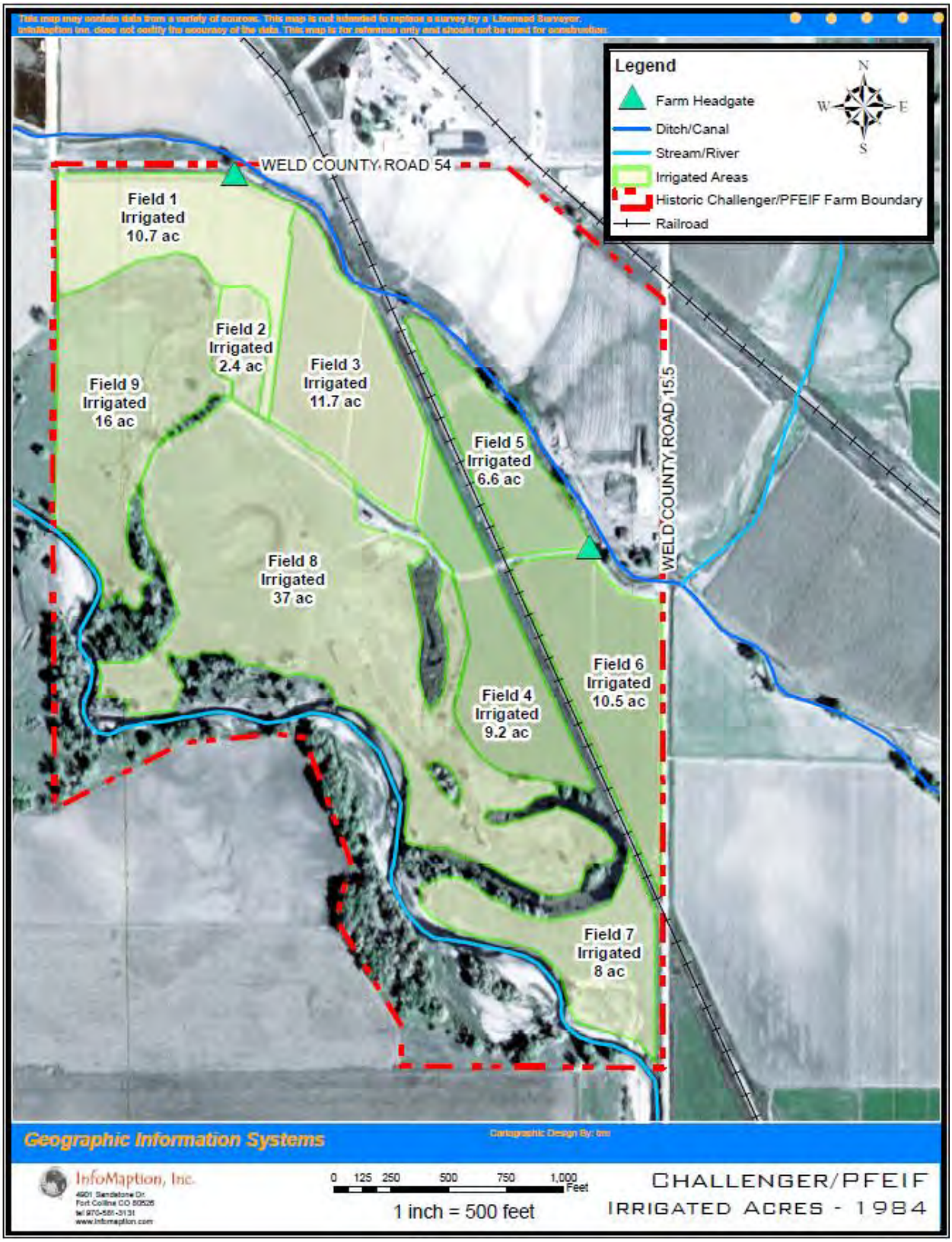
Appendix B-1. Pfeif/Challenger Farm Irrigated Fields 1956



Appendix B-2. Pfeif/Challenger Farm Irrigated Fields 1969



Appendix B-3. Pfeif/Challenger Farm Irrigated Fields 1984



Appendix C. Water Balance for HCU Analysis

Water Balance For Pfeif / Challenger Farm for 26 Shares of Hill and Brush (units acre-feet)

	River Diversion	Conveyance Loss	Farm Delivery	Consumptive Use	Runoff
Jan	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00
May	40.24	6.04	34.20	16.19	18.02
Jun	115.30	17.30	98.01	46.62	51.39
Jul	152.48	22.87	129.61	60.77	68.84
Aug	82.54	12.38	70.16	34.89	35.26
Sep	17.04	2.56	14.48	6.24	8.25
Oct	2.53	0.38	2.15	1.01	1.13
Nov	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00
Annual	410.12	61.52	348.60	165.70	182.90

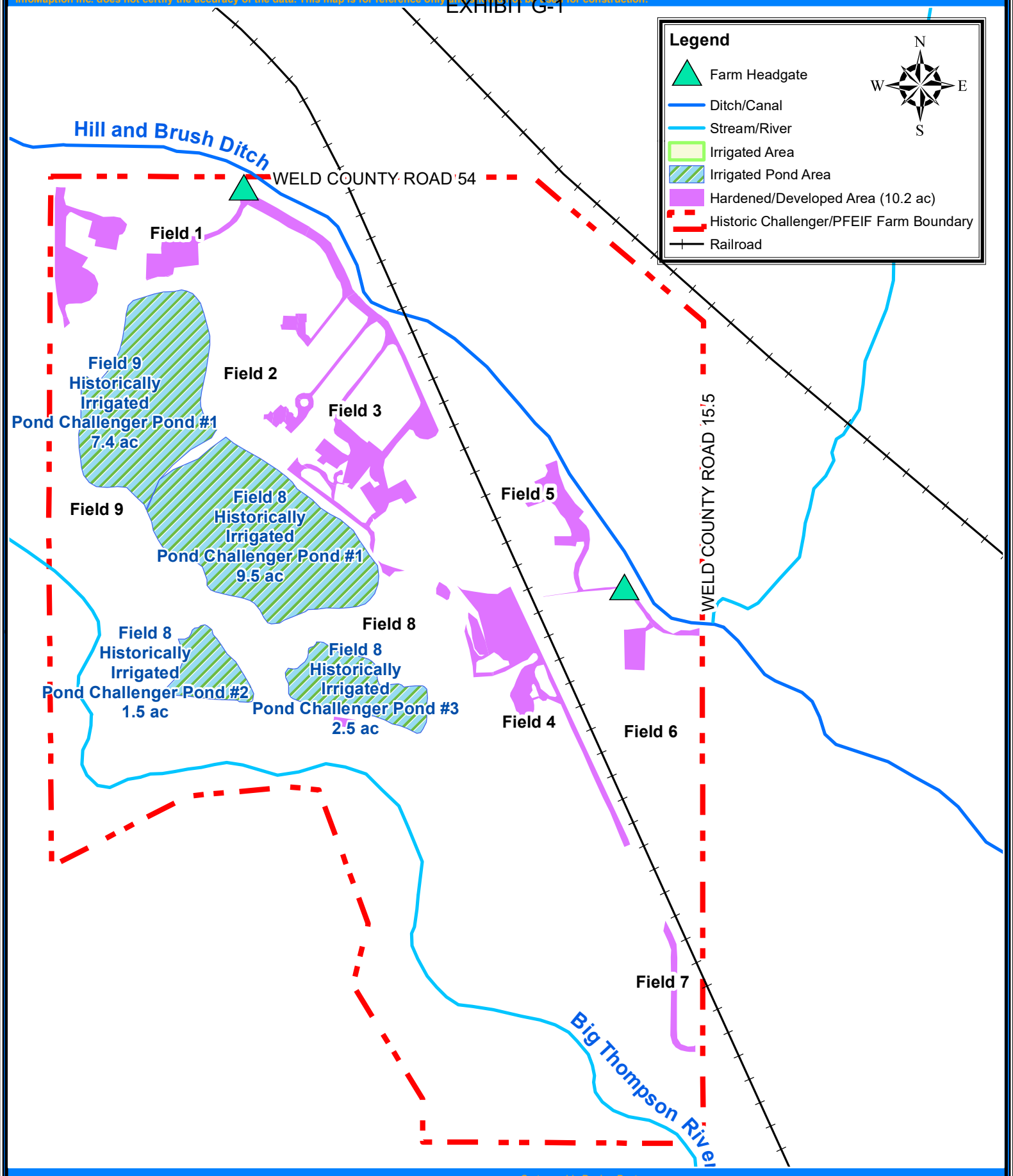
Water Balance For Pfeif / Challenger Farm per-share of Hill and Brush (units acre-feet)

	River Diversion	Conveyance Loss	Farm Delivery	Consumptive Use	Runoff
Jan	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00
May	1.55	0.23	1.32	0.62	0.69
Jun	4.43	0.67	3.77	1.79	1.98
Jul	5.86	0.88	4.98	2.34	2.65
Aug	3.17	0.48	2.70	1.34	1.36
Sep	0.66	0.10	0.56	0.24	0.32
Oct	0.10	0.01	0.08	0.04	0.04
Nov	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00
Annual	15.77	2.37	13.41	6.37	7.03

Water Balance For Pfeif / Challenger Farm for Applicant's 19 Shares of Hill and Brush (units acre-feet)

	River Diversion	Conveyance Loss	Farm Delivery	Consumptive Use	Runoff
Jan	0.00	0.00	0.00	0.00	0.00
Feb	0.00	0.00	0.00	0.00	0.00
Mar	0.00	0.00	0.00	0.00	0.00
Apr	0.00	0.00	0.00	0.00	0.00
May	29.41	4.41	24.99	11.83	13.17
Jun	84.26	12.64	71.62	34.07	37.55
Jul	111.43	16.71	94.71	44.41	50.31
Aug	60.31	9.05	51.27	25.50	25.77
Sep	12.45	1.87	10.58	4.56	6.03
Oct	1.85	0.28	1.57	0.74	0.83
Nov	0.00	0.00	0.00	0.00	0.00
Dec	0.00	0.00	0.00	0.00	0.00
Annual	299.70	44.96	254.75	121.09	133.66

EXHIBIT G-1



Geographic Information Systems

Cartographic Design By: trm

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0 125 250 500 750 1,000 Feet

1 inch = 500 feet

Challenger/PFEIF Irrigated Pond Areas - 1984