MEMO

State of Idaho
Department of Water Resources
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Date: December 2, 2008

To: Pam Skaggs, Water Allocations

From: Dennis Owsley, Hydrology Section, State Office

cc: Rick Raymondi, Sean Vincent, Benny Walker

Subject: **Revised** ESPA Combined Transfer Analysis -- 8 Combined Off-Setting Transfer Applications Presented by Thompson Engineering

Introduction

The Hydrology Section in the State Office was requested to evaluate the hydrologic impacts on the Snake River from the subject water right transfer. The transfer is summarized in a technical memorandum by Brockway Engineering, dated August 16, 2007, and revised through a letter and accompanying CD presented by Thompson Engineering, addressed to Benny Walker, dated August 15, 2008.

This memo provides a summary of the review of the revised transfers by running the proposed volumes of water to be transferred through the ESPA Transfer Tool, Version 3.1. Details regarding the locations and volumes of the requested transfers can be found in the original review report dated February 29, 2008, with the proposed changes highlighted in the August 15, 2008 Thompson Engineering letter.

The applicants seek to transfer multiple water rights to various locations across the Eastern Snake Plain. The uses of the water rights that are included in the combined transfer are also proposed to change, as the transfers will dry up water right acres at existing farms to provide municipal and irrigation use volumes to be available at the proposed locations.

The parties involved with this transfer include Idaho Water Co., KBC Farms, Bowler Ranches, Alliance Land & Livestock, and Stoker Dairy. Twelve individual water rights are associated with this combined transfer.

The guidance for approving Eastern Snake Plain Aquifer (ESPA) transfers is contained in Administrative Transfer Processing Memorandum No. 24, dated October 30, 2002. The guidance indicates that the transfer applicant must submit an analysis showing the effects

on the Snake River based on the Department's current ground water model or acceptable equivalent unless the transfer is within a model cell or to an adjacent cell. For a transfer to be approved, impacts to the Snake River flows must be within 5% of the historical depletions or less than two acre-feet per trimester per reach prior to the transfer (IDWR, 2007).

To minimize the mitigation requirements, these offsetting transfer applications have been submitted together. Careful selection of water rights for transfer was intended to reduce the need for mitigation through volume reduction.

A significant portion of this combined transfer involves transferring water from the Sagewood Ranch water rights to various locations across the ESPA. It should be noted that the four wells associated with the Sagewood Ranch water right do not lie within the domain of the ESPA model. In fact, a review of the well logs for the Sagewood Ranch wells indicate that the wells are completed in a tributary aquifer to the ESPA. However, since the wells are within two cells of the ESPA model boundary, the nearest model cell to the wells was selected in accordance with the IDWR transfer guidelines (IDWR, 2007). In addition, the Sagewood Ranch wells have not been pumping since 1994, which has been confirmed through the analysis of aerial photography taken of the area.

It is our understanding that the Sagewood Ranch water rights were not forfeited and are potentially eligible for transfer despite not having been used for more than five years because a partial decree was issued in the Snake River Basin Adjudication. However, the date of the partial decree (July 26, 2002) is slightly more than five years before the date on which transfer application was submitted (August 16, 2007).

Methodology

Impacts due to each portion of this transfer were analyzed using version 3.1 of the ESPA Transfer Spreadsheet. A total of eight model runs were required in order to evaluate the hydrologic impacts of the combined transfer. Using the principle of superposition (see, for example, Freeze and Cherry, 1979), the results from each of the model runs were then added together to determine the overall impacts of the combined transfer.

Input parameters include water right priority dates associated with each component of the combined transfer, the date on which the transfer will take place, the volume of water associated with each component of the combined transfer, and the PODs for the wells. All of the information used in the verification model runs was taken from the CD accompanying the August 15, 2008 Thompson Engineering letter. The individual model runs were conducted with the POD locations provided in the report and an initial diversion start date of spring of 2008.

Also note that, it was assumed that the Sagewood Ranch wells have been pumping up to the present time for the "without transfer" scenario but the Sagewood Ranch wells have not been pumping for the last 14 years for the "with transfer" scenario. In reality, the Sagewood Ranch wells have not been pumping for the last 14 years. This aspect of the transfer analysis is, therefore, unrealistic.

Analysis of the Results

Although components of the combined transfer result in unacceptable depletions to Snake River reaches, the overall impact of the combined transfer satisfies the 5% criterion for all of the Snake River reaches (Figure 1). The negative impacts from the individual portions of the transfer that do not meet the requirements are mitigated by the other transfer components associated with this transfer application.

Based on the results shown in Figure 1, the impacts to the Snake River are increasing throughout the duration of the modeled timeframe. Impacts to the several reaches are approaching the 105% limit after 100 years since the transfer. It appears the impacts may continue to increase to a value above the regulatory limit at a future date beyond the scope of the modeled timeframe.

It should be noted that the overall impacts of this combined transfer are incorporating all eight portions of the transfer simultaneously. If for some reason, one or more portions of this combined transfer does not occur, than the overall results of this analysis can not be applied. In addition, all of the model inputs (locations, dates, and volumes) were taken directly out of the CD associated with the August 15, 2008 Thompson Engineering letter. If it is shown that any of these values are incorrect, than the results in this analysis are not applicable.

The results shown in Figure 1 underestimate the actual impacts on the Snake River if the transfer is approved because, in reality, the Sagewood Ranch wells have not been pumping since 1994 but the wells were simulated as pumping since their priority date for the "without transfer" scenario. Note that if both the "with transfer" and "without transfer" scenarios are evaluated using the actual historical pumping history, the combined transfer fails to satisfy the 5% acceptance criterion.

Conclusions

The following conclusions are based upon my analysis of the combined transfer using information presented in the Brockway memo and version 3.1 of the ESPA Transfer Spreadsheet:

- The combined transfer involves a total of twelve water rights and multiple water right holders. The two largest water rights volumetrically are for the Sagewood Ranch wells. The Sagewood Ranch wells have not been pumped for the last 14 years.

- The Sagewood Ranch wells are outside of the official ESPA aquifer boundary and outside of the ESPA common ground water area. A review of the lithologic logs of the Sagewood Ranch wells shows that the wells are completed in sand and gravel units that underlie the basalt that makes up the ESPA. The fact the these wells appear to be in a tributary aquifer (Raft River Valley) to the ESPA raises questions regarding the validity of using the Transfer Tool to analyze impacts associated with this transfer.

- If the Sagewood Ranch wells are simulated as being idle since 1994 for the "with transfer" scenario and having been pumped for the "without transfer" scenario (as modeled by Brockway), then the hydrologic impacts are within the 105% criterion for approval of a transfer. In this case, the impacts of the transfer appear not to stabilize within 100 years of the transfer.

- If the actual historical pumping history is simulated for both the "with transfer" and "without transfer" scenarios, the impacts of the transfer exceed the 105% criterion for several reaches of the Snake River.

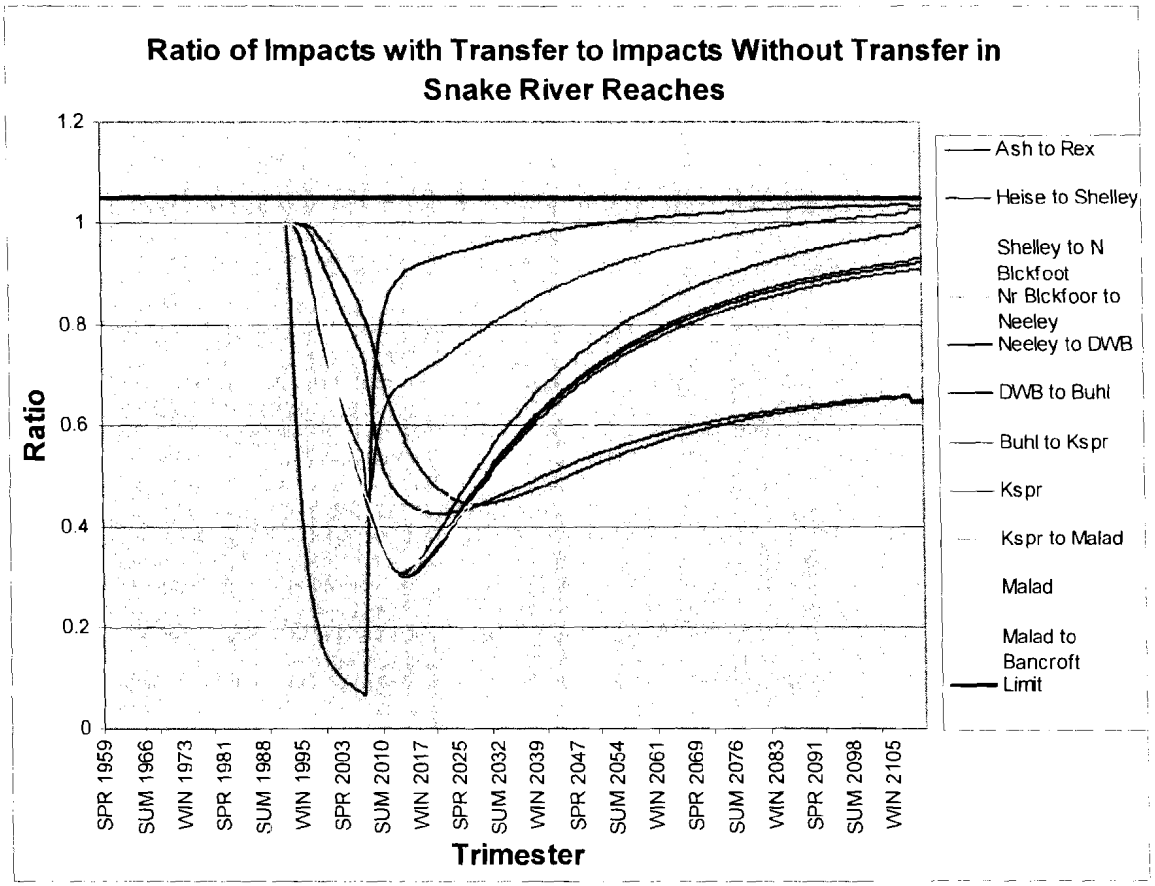


Figure 1. Impact of the combined transfer on each of the Snake River reaches.

References

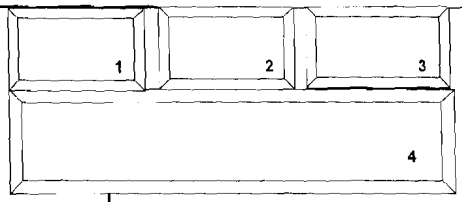
Idaho Department of Water Resources, 2007. ESPA Transfer Spreadsheet (V3.1) – Implementation and Use. Memorandum from Jeff Peppersack to Water Allocations Bureau and Regions. August 13.

Freeze, R.A., and J.A. Cherry, 1979, Groundwater, Prentice-Hall, Inc., 604 pp.

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

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Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON

YEAR: 1959

SEASON: WINTER

TRANSFER NO: Phillips to Alliance

TRANSFER NAME: Phillips to Alliance

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	85	70		
COLUMN	43	50		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
WIN 1959	0	12	12				
SPR 1960	0	12	12				
SUM 1960	0	12	12				
WIN 1960	0	12	12				
SPR 1961	0	12	12				
SUM 1961	0	12	12				
WIN 1961	0	12	12				
SPR 1962	0	12	12				
SUM 1962	0	12	12				
WIN 1962	0	12	12				
SPR 1963	0	12	12				
SUM 1963	0	12	12				
WIN 1963	0	12	12				
SPR 1964	0	12	12				
SUM 1964	0	12	12				
WIN 1964	0	12	12				
SPR 1965	0	12	12				
SUM 1965	0	12	12				
WIN 1965	0	12	12				
SPR 1966	0	12	12				
SUM 1966	0	12	12				
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SUM 1967	0	12	12				
WIN 1967	0	12	12				
SPR 1968	0	12	12				
SUM 1968	0	12	12				
WIN 1968	0	12	12				
SPR 1969	0	12	12				
SUM 1969	0	12	12				
WIN 1969	0	12	12				
SPR 1970	0	12	12				
SUM 1970	0	12	12				
WIN 1970	0	30	30				
SPR 1971	0	33	33				
SUM 1971	0	33	33				
WIN 1971	0	33	33				
SPR 1972	0	33	33				
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WIN 1972	0	33	33				
SPR 1973	0	33	33				
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WIN 1974	0	49	49				
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SUM 1981	0	53	53				
WIN 1981	0	53	53				
SPR 1982	0	53	53				
SUM 1982	0	53	53				
WIN 1982	0	53	53				
SPR 1983	0	53	53				
SUM 1983	0	53	53				
WIN 1983	0	53	53				
SPR 1984	0	53	53				
SUM 1984	0	53	53				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired time
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TO
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority dates

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

WIN 1984	0	53	53
SPR 1985	0	53	53
SUM 1985	0	53	53
WIN 1985	0	53	53
SPR 1986	0	53	53
SUM 1986	0	53	53
WIN 1986	0	53	53
SPR 1987	0	53	53
SUM 1987	0	53	53
WIN 1987	0	53	53
SPR 1988	0	53	53
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SPR 1989	0	53	53
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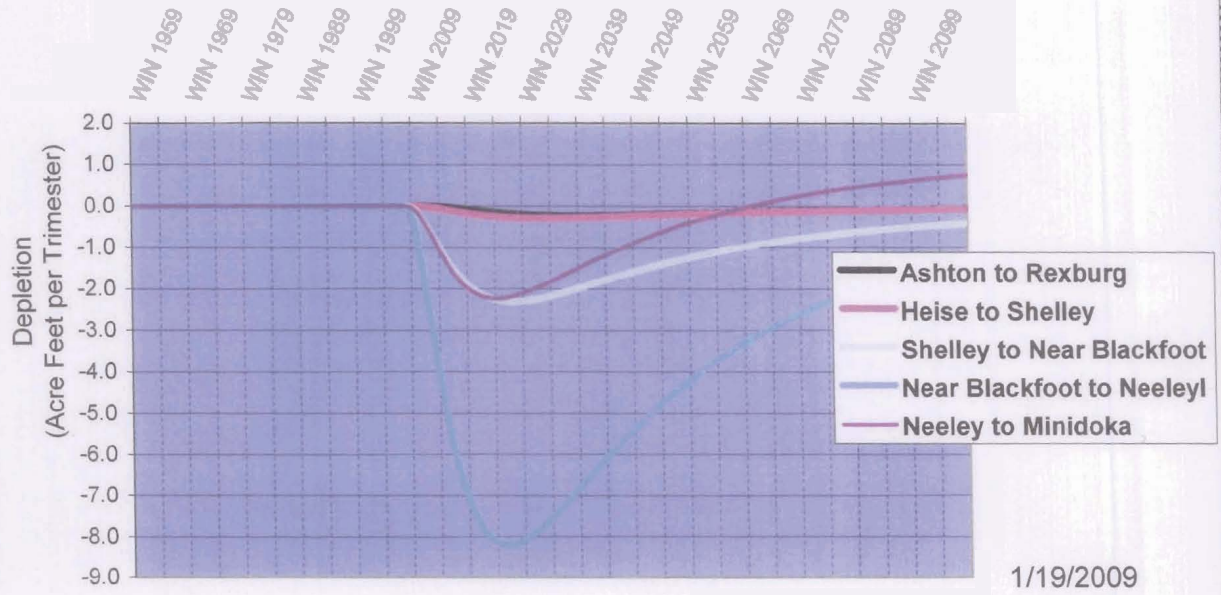
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SUM 2104	53	0	53
WIN 2104	53	0	53
SPR 2105	53	0	53
SUM 2105	53	0	53
WIN 2105	53	0	53
SPR 2106	53	0	53
SUM 2106	53	0	53
WIN 2106	53	0	53
SPR 2107	53	0	53
SUM 2107	53	0	53
WIN 2107	53	0	53
SPR 2108	53	0	53
SUM 2108	53	0	53
WIN 2108	53	0	53
SPR 2109	53	0	53
SUM 2109	53	0	53

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

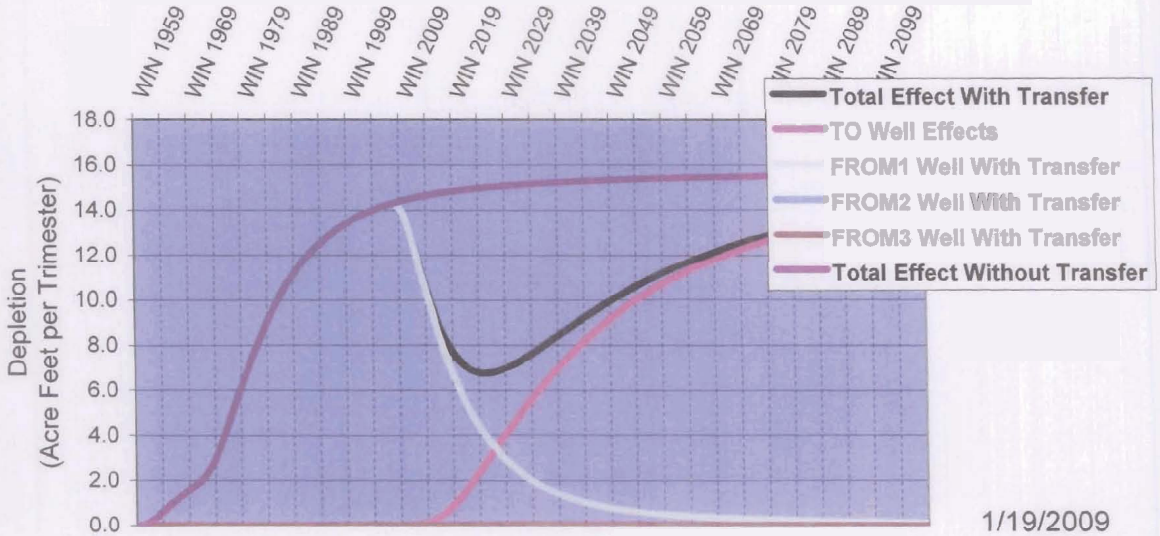


1/19/2009
Version 3.1

Customer Name: Phillips to Alliance Transfer No: Phillips

Hydrologic Response-- Near Blackfoot to Neeley

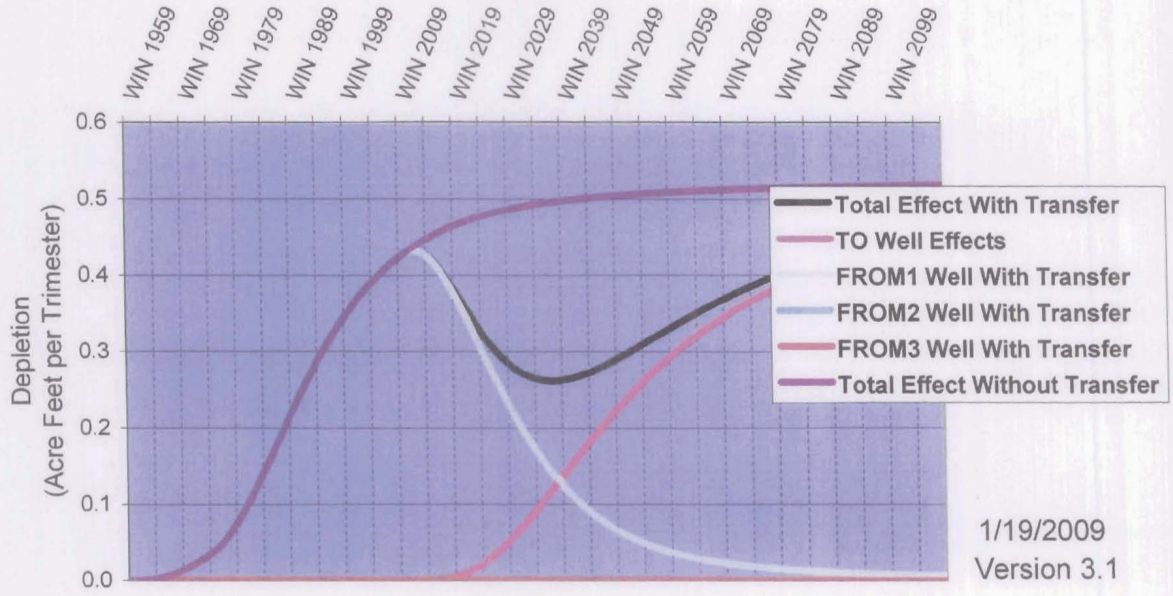
Customer Name: Phillips to Alliance Transfer No: Phillips



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

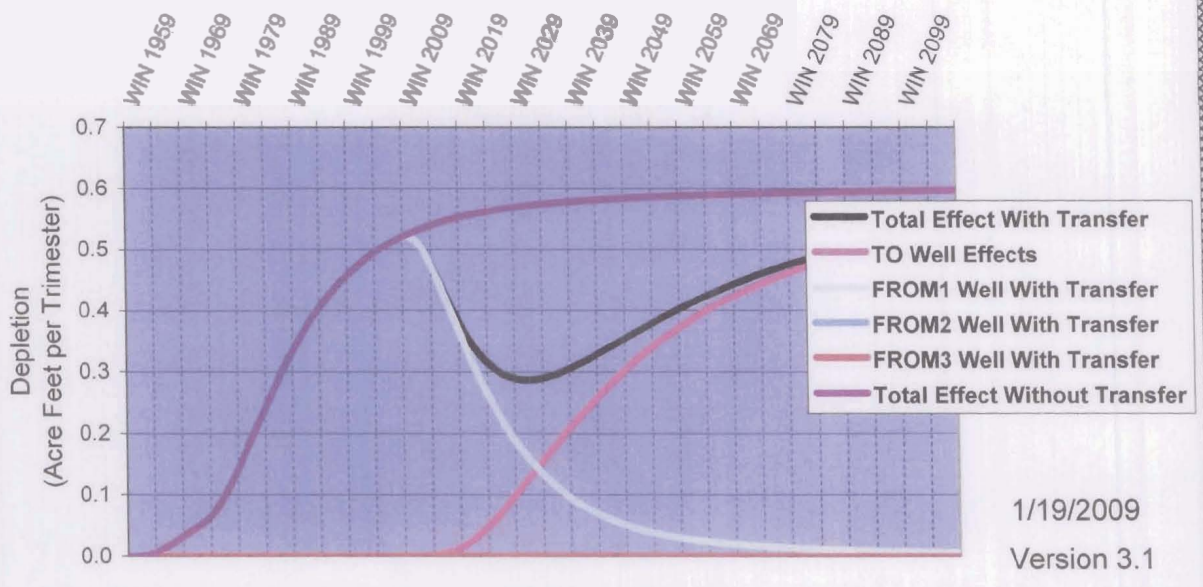
Customer Name: Phillips to Alliance **Transfer No: Phillips**



1/19/2009
Version 3.1

Hydrologic Response--Heise to Shelley

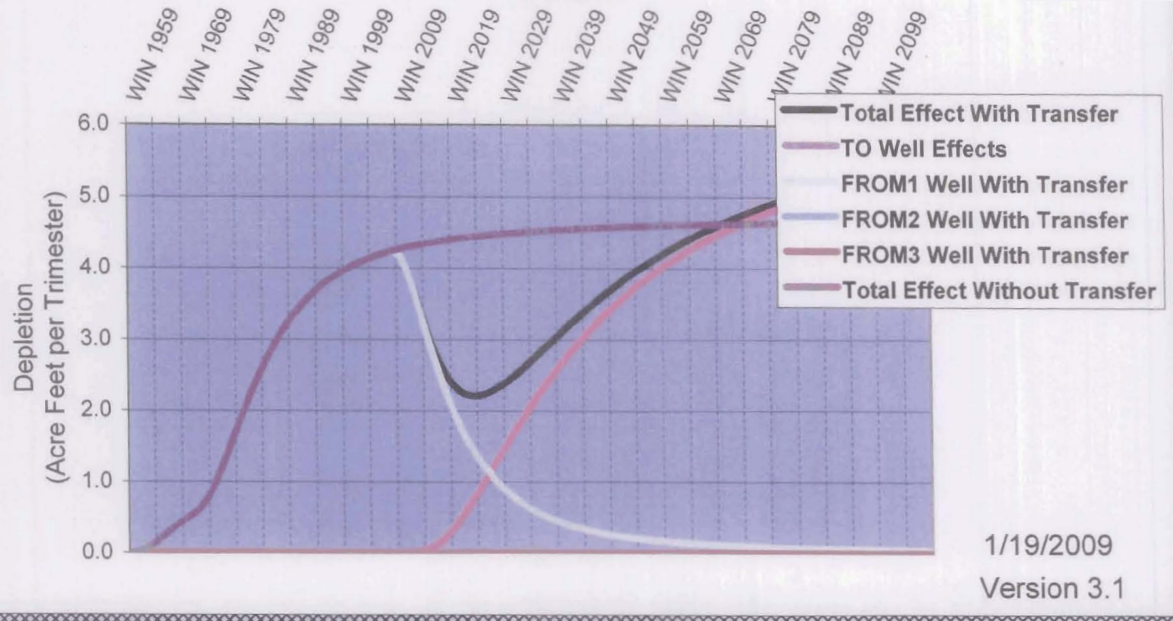
Customer Name: Phillips to Alliance **Transfer No: Phillips**



1/19/2009
Version 3.1

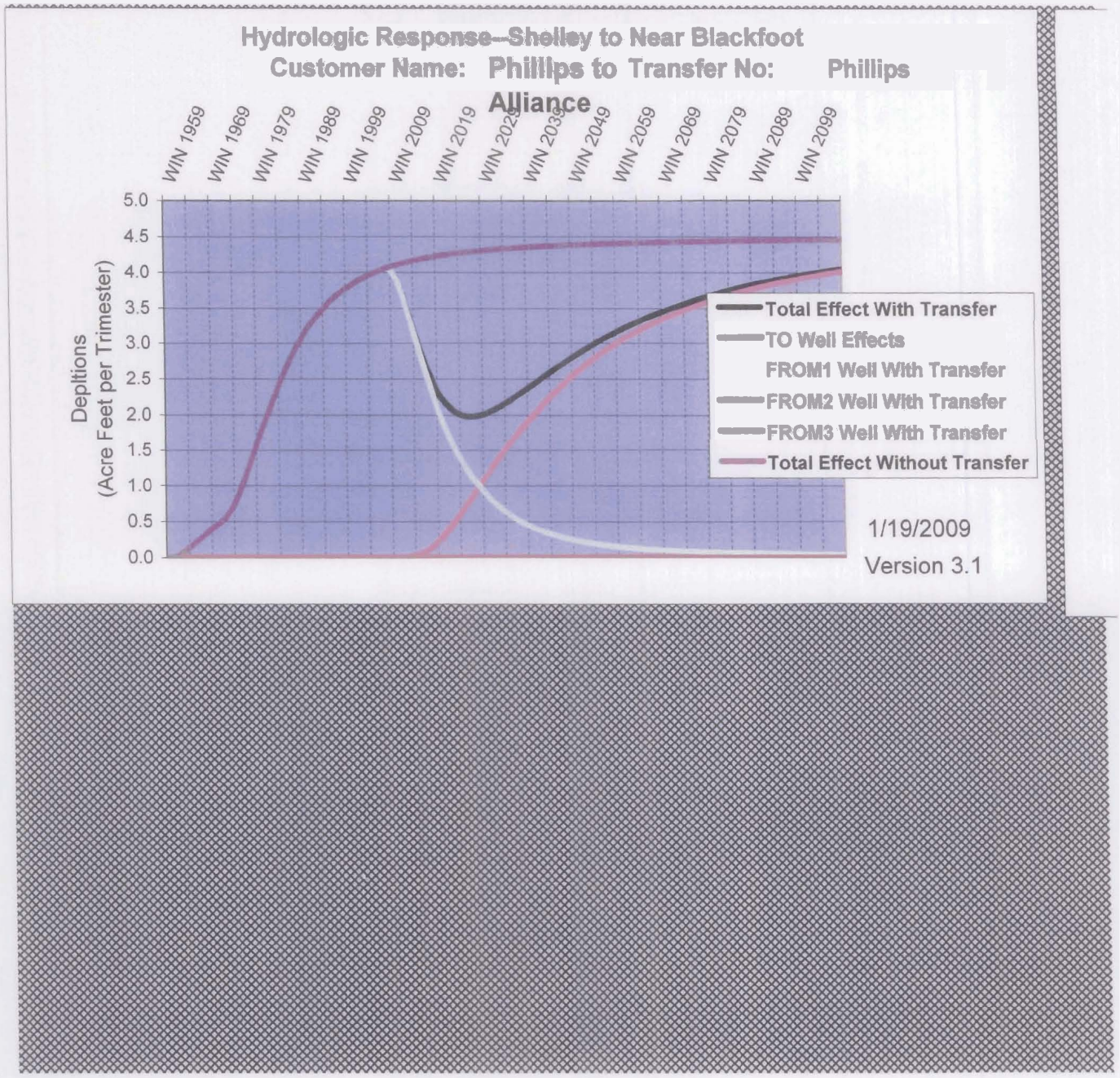
Hydrologic Response-- Neeley to Minidoka

Customer Name: Phillips to Alliance **Transfer No:** Phillips



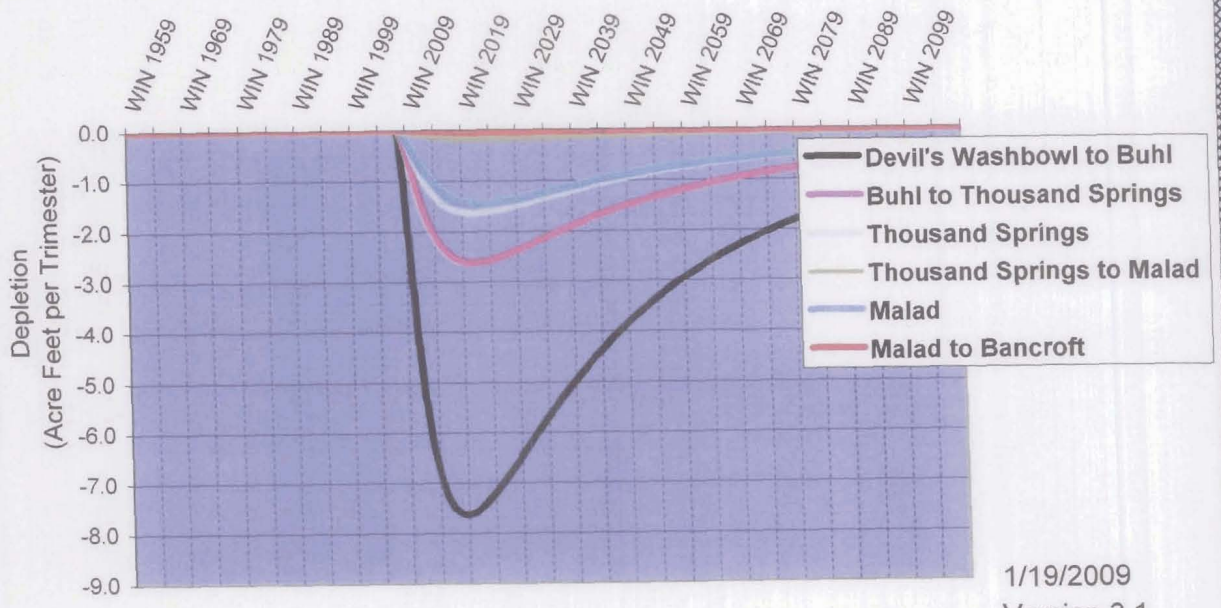
1/19/2009

Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Phillips to Transfer No: Phillips
Alliance
WIN 1959
WIN 1969
WIN 1979
WIN 1989
WIN 1999
WIN 2009
WIN 2019
WIN 2029
WIN 2039
WIN 2049
WIN 2059
WIN 2069
WIN 2079
WIN 2089
WIN 2099
Depltions
(Acre Feet per Trimester)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

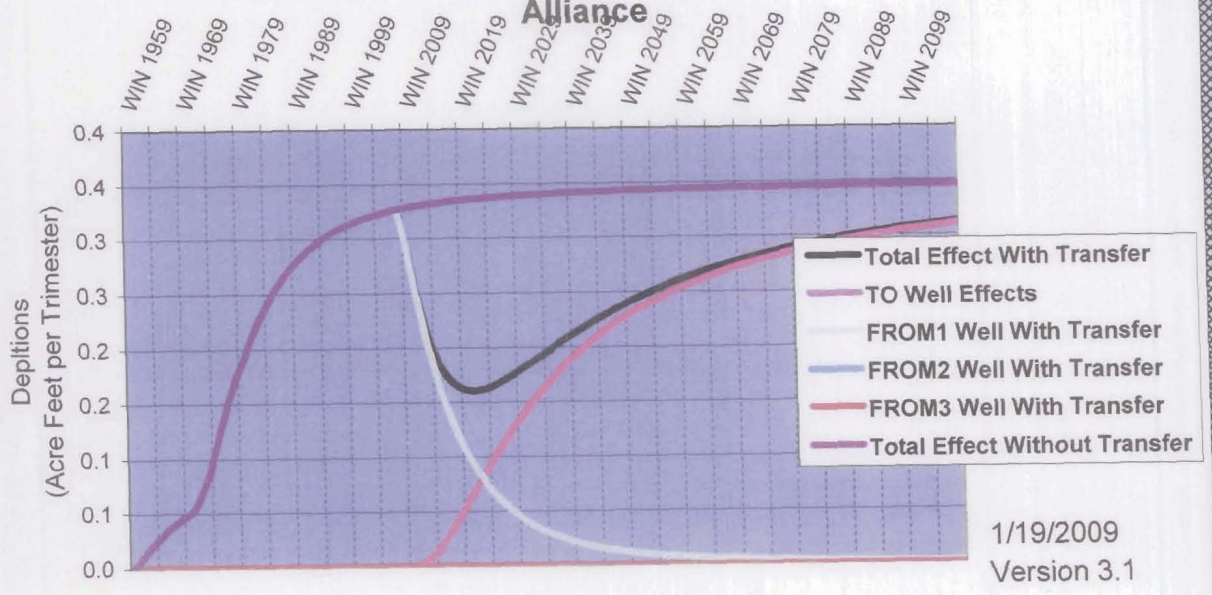


1/19/2009
Version 3.1

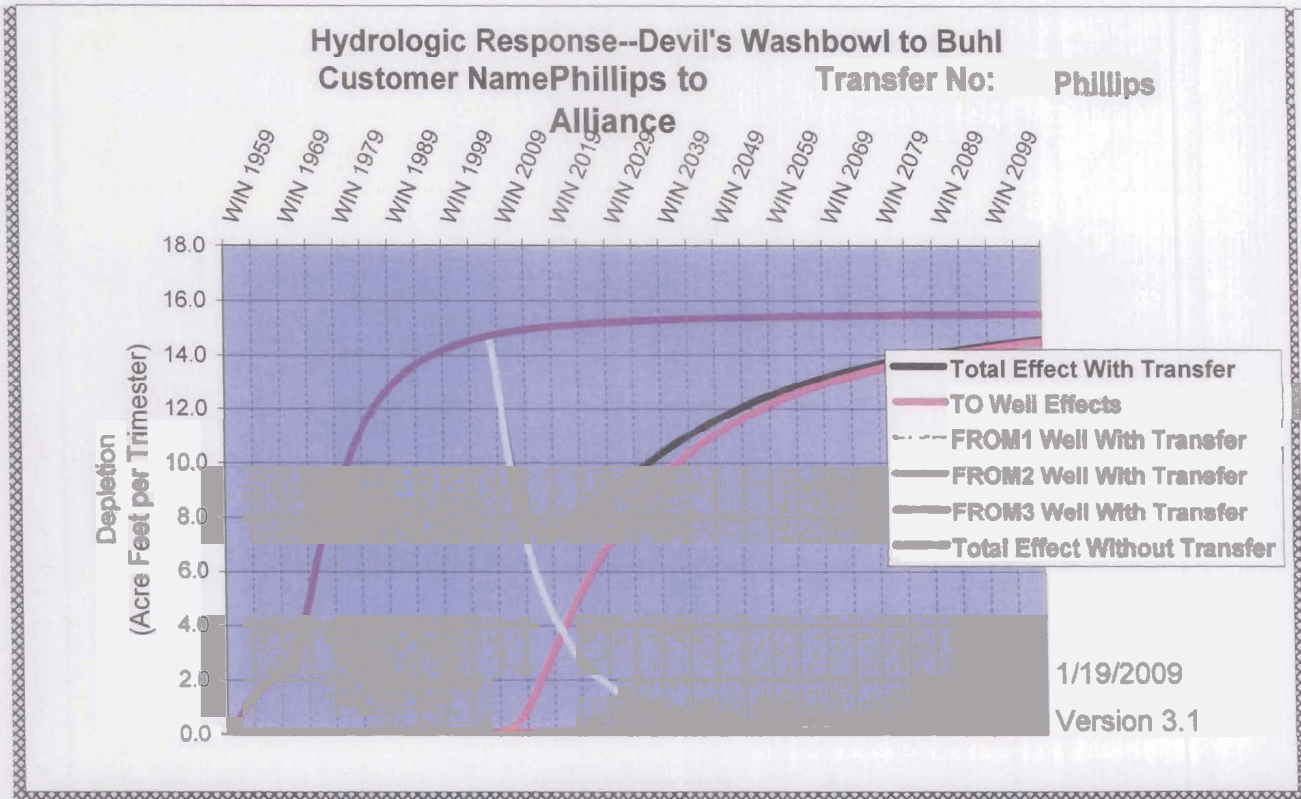
Customer Name: **Phillips to Alliance** Transfer No: **Phillips**

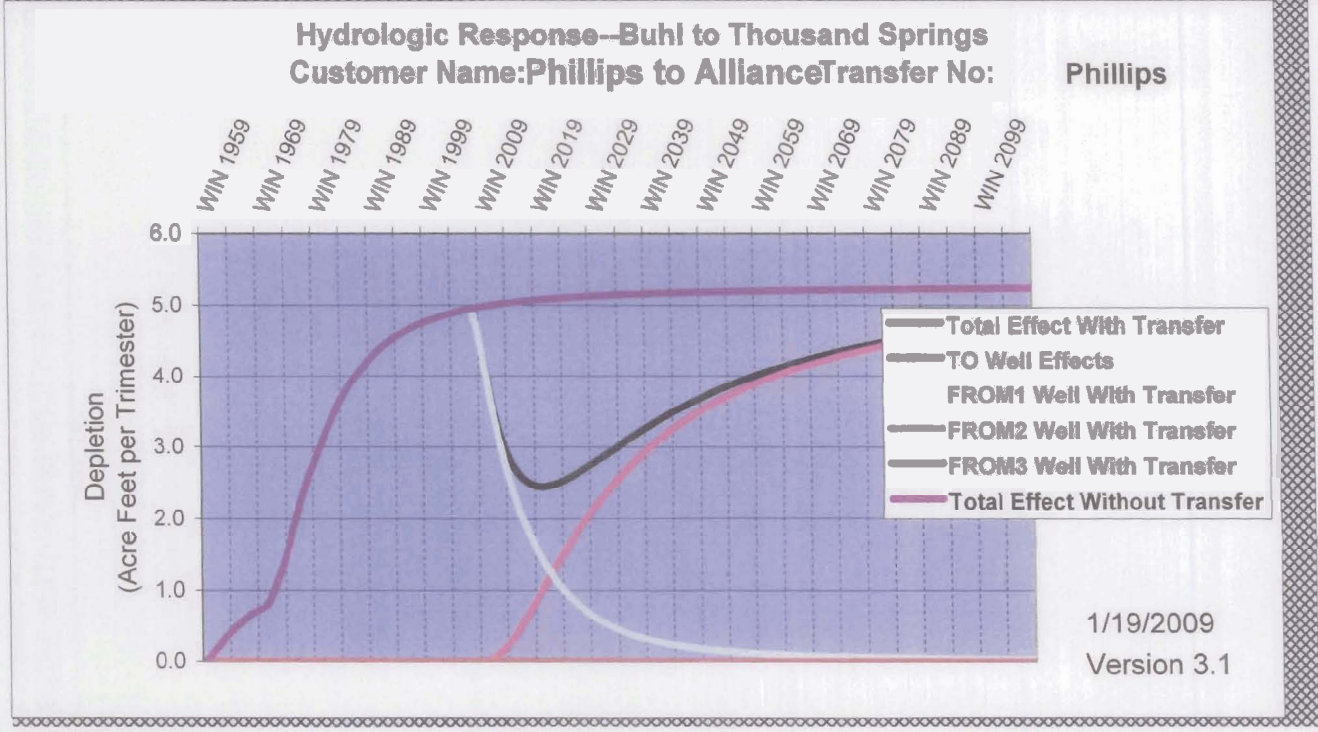
Hydrologic Response--Thousand Springs to Malad

Customer Name: Phillips to Alliance **Transfer No: Phillips**



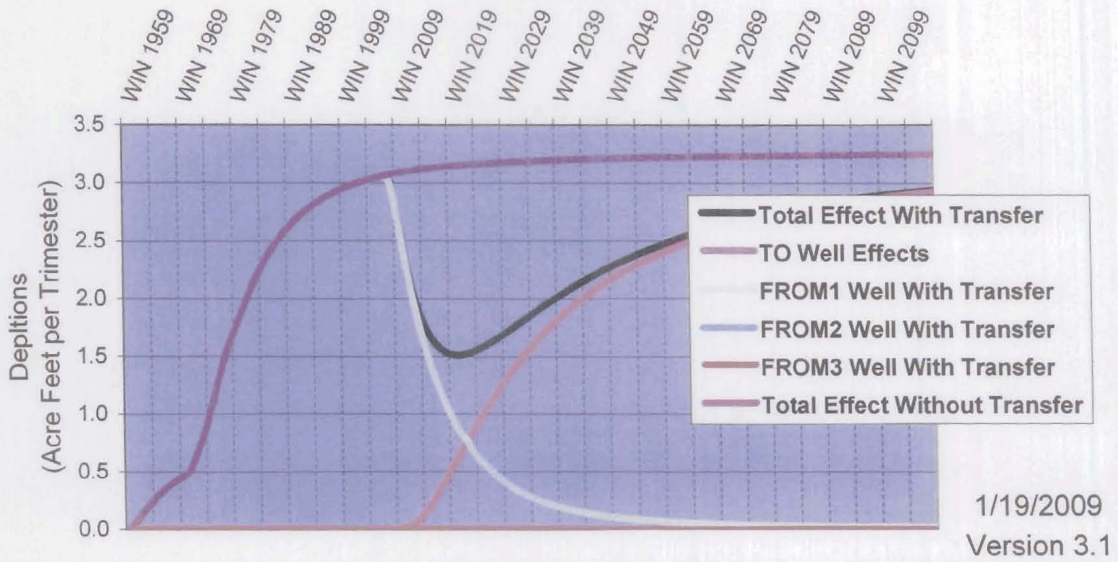
1/19/2009
Version 3.1


Hydrologic Response--Devil's Washbowl to Buhl
Customer NamePhillips to Alliance
Transfer No:
Phillips
WIN 1959
WIN 1969
WIN 1979
WIN 1989
WIN 1999
WIN 2009
WIN 2019
WIN 2029
WIN 2039
WIN 2049
WIN 2059
WIN 2069
WIN 2079
WIN 2089
WIN 2099
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depletion (Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

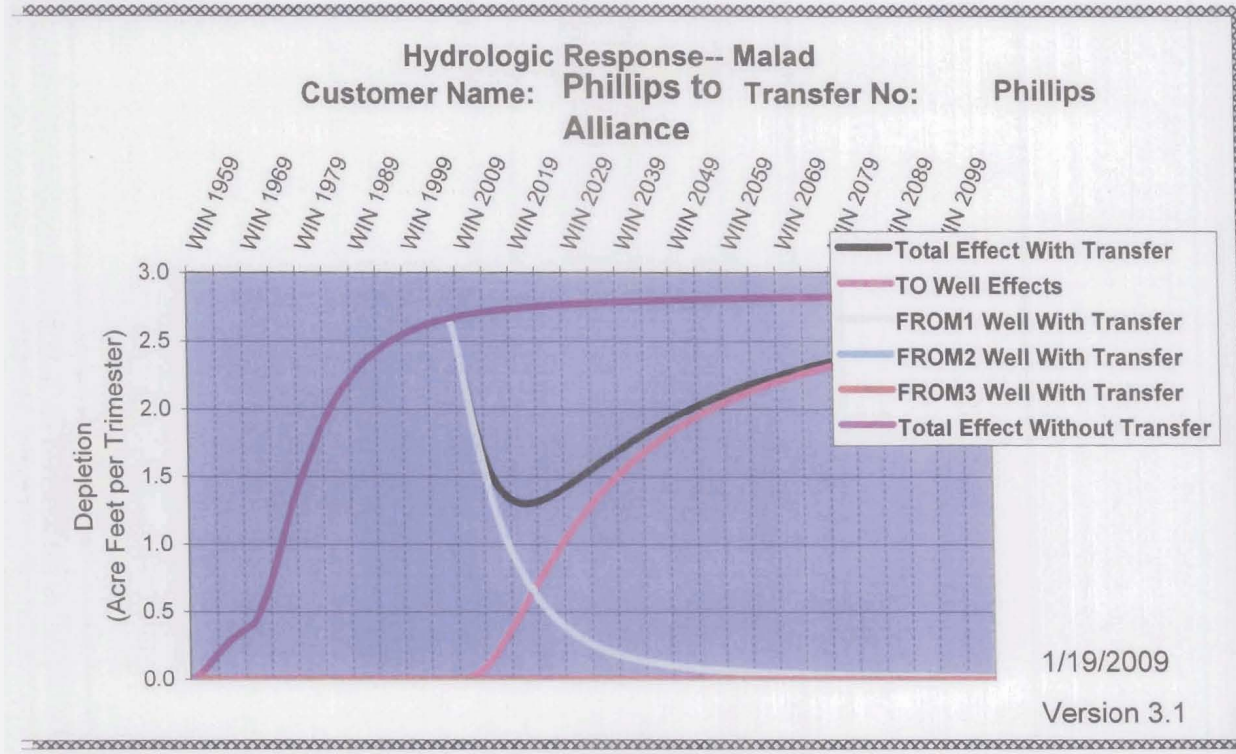

Hydrologic Response--Buhl to Thousand Springs
Customer Name:Phillips to AllianceTransfer No:
Phillips
WIN 1959
WIN 1969
WIN 1979
WIN 1989
WIN 1999
WIN 2009
WIN 2019
WIN 2029
WIN 2039
WIN 2049
WIN 2059
WIN 2069
WIN 2079
WIN 2089
WIN 2099
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depletion (Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

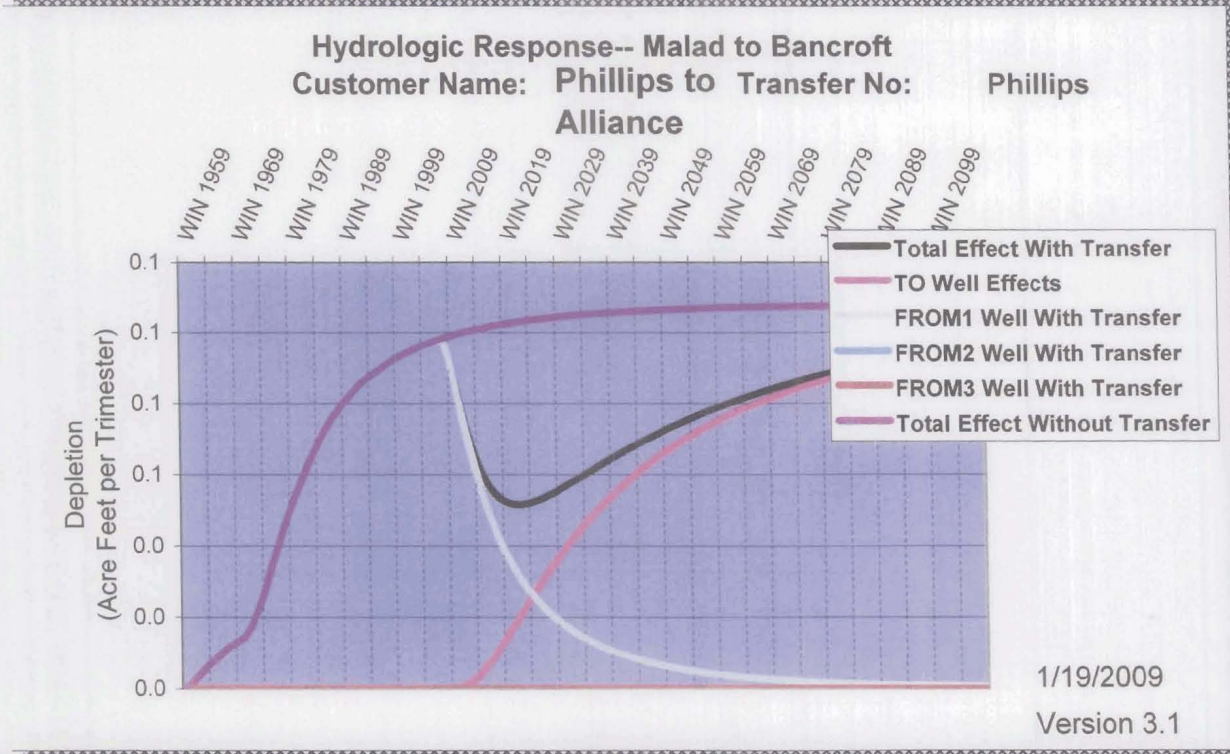
Hydrologic Response--Thousand Springs

Customer Name: Phillips to Alliance **Transfer No: Phillips**



1/19/2009
Version 3.1

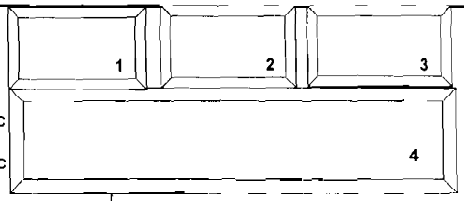

Hydrologic Response-- Malad
Customer Name: Phillips to Alliance Transfer No: Phillips
WIN 1959
WIN 1969
WIN 1979
WIN 1989
WIN 1999
WIN 2009
WIN 2019
WIN 2029
WIN 2039
WIN 2049
WIN 2059
WIN 2069
WIN 2079
WIN 2089
WIN 2099
Depletion (Acre Feet per Trimester)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Malad to Bancroft
Customer Name: Phillips to Alliance Transfer No: Phillips
WIN 1959
WIN 1969
WIN 1979
WIN 1989
WIN 1999
WIN 2009
WIN 2019
WIN 2029
WIN 2039
WIN 2049
WIN 2059
WIN 2069
WIN 2079
WIN 2089
WIN 2099
Depletion (Acre Feet per Trimester)
0.1
0.1
0.1
0.0
0.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

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Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON	TRANSFER NO: Sage/Geeles to KBC
YEAR 1962	TRANSFER NAME:
SEASON SPRING	Sage/Geeles to KBC

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	95	66	91	
COLUMN	89	128	69	

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	0	0	58	58		
SUM 1962	0	0	0	58	58		
WIN 1962	0	0	0	58	58		
SPR 1963	0	0	0	58	58		
SUM 1963	0	0	0	58	58		
WIN 1963	0	0	0	58	58		
SPR 1964	0	0	0	58	58		
SUM 1964	0	0	0	58	58		
WIN 1964	0	0	0	58	58		
SPR 1965	0	0	0	58	58		
SUM 1965	0	0	0	58	58		
WIN 1965	0	0	0	58	58		
SPR 1966	0	0	0	58	58		
SUM 1966	0	0	0	58	58		
WIN 1966	0	0	0	58	58		
SPR 1967	0	0	0	58	58		
SUM 1967	0	0	0	58	58		
WIN 1967	0	0	0	58	58		
SPR 1968	0	0	0	58	58		
SUM 1968	0	0	0	58	58		
WIN 1968	0	0	0	58	58		
SPR 1969	0	0	0	58	58		
SUM 1969	0	0	0	58	58		
WIN 1969	0	0	0	58	58		
SPR 1970	0	0	0	58	58		
SUM 1970	0	0	0	58	58		
WIN 1970	0	0	0	58	58		
SPR 1971	0	0	0	58	58		
SUM 1971	0	0	0	58	58		
WIN 1971	0	0	0	58	58		
SPR 1972	0	0	0	58	58		
SUM 1972	0	0	0	58	58		
WIN 1972	0	0	0	58	58		
SPR 1973	0	0	0	58	58		
SUM 1973	0	0	0	58	58		
WIN 1973	0	0	0	58	58		
SPR 1974	0	0	0	58	58		
SUM 1974	0	0	0	58	58		
WIN 1974	0	125	125	58	58		
SPR 1975	0	125	125	58	58		
SUM 1975	0	125	125	58	58		
WIN 1975	0	125	125	58	58		
SPR 1976	0	125	125	58	58		
SUM 1976	0	125	125	58	58		
WIN 1976	0	125	125	58	58		
SPR 1977	0	125	125	58	58		
SUM 1977	0	125	125	58	58		
WIN 1977	0	125	125	58	58		
SPR 1978	0	125	125	221	221		
SUM 1978	0	125	125	221	221		
WIN 1978	0	125	125	221	221		
SPR 1979	0	125	125	221	221		
SUM 1979	0	125	125	221	221		
WIN 1979	0	125	125	221	221		
SPR 1980	0	125	125	221	221		
SUM 1980	0	125	125	221	221		
WIN 1980	0	125	125	221	221		
SPR 1981	0	125	125	221	221		
SUM 1981	0	125	125	221	221		
WIN 1981	0	125	125	221	221		
SPR 1982	0	125	125	221	221		
SUM 1982	0	125	125	221	221		
WIN 1982	0	125	125	221	221		
SPR 1983	0	125	125	221	221		
SUM 1983	0	125	125	221	221		
WIN 1983	0	125	125	221	221		
SPR 1984	0	125	125	221	221		
SUM 1984	0	125	125	221	221		
WIN 1984	0	125	125	221	221		
SPR 1985	0	125	125	221	221		
SUM 1985	0	125	125	221	221		
WIN 1985	0	125	125	221	221		
SPR 1986	0	125	125	221	221		
SUM 1986	0	125	125	221	221		
WIN 1986	0	125	125	221	221		

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired time
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TO
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority dates

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	125	125	221	221		
SUM 1987	0	125	125	221	221		
WIN 1987	0	125	125	221	221		
SPR 1988	0	125	125	221	221		
SUM 1988	0	125	125	221	221		
WIN 1988	0	125	125	221	221		
SPR 1989	0	125	125	221	221		
SUM 1989	0	125	125	221	221		
WIN 1989	0	125	125	221	221		
SPR 1990	0	125	125	221	221		
SUM 1990	0	125	125	221	221		
WIN 1990	0	125	125	221	221		
SPR 1991	0	125	125	221	221		
SUM 1991	0	125	125	221	221		
WIN 1991	0	125	125	221	221		
SPR 1992	0	125	125	221	221		
SUM 1992	0	125	125	221	221		
WIN 1992	0	125	125	221	221		
SPR 1993	0	125	125	221	221		
SUM 1993	0	125	125	221	221		
WIN 1993	0	125	125	221	221		
SPR 1994	0	125	125	0	221		
SUM 1994	0	125	125	0	221		
WIN 1994	0	125	125	0	221		
SPR 1995	0	125	125	0	221		
SUM 1995	0	125	125	0	221		
WIN 1995	0	125	125	0	221		
SPR 1996	0	125	125	0	221		
SUM 1996	0	125	125	0	221		
WIN 1996	0	125	125	0	221		
SPR 1997	0	125	125	0	221		
SUM 1997	0	125	125	0	221		
WIN 1997	0	125	125	0	221		
SPR 1998	0	125	125	0	221		
SUM 1998	0	125	125	0	221		
WIN 1998	0	125	125	0	221		
SPR 1999	0	125	125	0	221		
SUM 1999	0	125	125	0	221		
WIN 1999	0	125	125	0	221		
SPR 2000	0	125	125	0	221		
SUM 2000	0	125	125	0	221		
WIN 2000	0	125	125	0	221		
SPR 2001	0	125	125	0	221		
SUM 2001	0	125	125	0	221		
WIN 2001	0	125	125	0	221		
SPR 2002	0	125	125	0	221		
SUM 2002	0	125	125	0	221		
WIN 2002	0	125	125	0	221		
SPR 2003	0	125	125	0	221		
SUM 2003	0	125	125	0	221		
WIN 2003	0	125	125	0	221		
SPR 2004	0	125	125	0	221		
SUM 2004	0	125	125	0	221		
WIN 2004	0	125	125	0	221		
SPR 2005	0	125	125	0	221		
SUM 2005	0	125	125	0	221		
WIN 2005	0	125	125	0	221		
SPR 2006	0	125	125	0	221		
SUM 2006	0	125	125	0	221		
WIN 2006	0	125	125	0	221		
SPR 2007	0	125	125	0	221		
SUM 2007	0	125	125	0	221		
WIN 2007	0	125	125	0	221		
SPR 2008	346	0	125	0	221		
SUM 2008	346	0	125	0	221		
WIN 2008	346	0	125	0	221		
SPR 2009	346	0	125	0	221		
SUM 2009	346	0	125	0	221		
WIN 2009	346	0	125	0	221		
SPR 2010	346	0	125	0	221		
SUM 2010	346	0	125	0	221		
WIN 2010	346	0	125	0	221		
SPR 2011	346	0	125	0	221		
SUM 2011	346	0	125	0	221		
WIN 2011	346	0	125	0	221		
SPR 2012	346	0	125	0	221		
SUM 2012	346	0	125	0	221		
WIN 2012	346	0	125	0	221		
SPR 2013	346	0	125	0	221		
SUM 2013	346	0	125	0	221		
WIN 2013	346	0	125	0	221		
SPR 2014	346	0	125	0	221		
SUM 2014	346	0	125	0	221		
WIN 2014	346	0	125	0	221		
SPR 2015	346	0	125	0	221		
SUM 2015	346	0	125	0	221		
WIN 2015	346	0	125	0	221		
SPR 2016	346	0	125	0	221		
SUM 2016	346	0	125	0	221		
WIN 2016	346	0	125	0	221		
SPR 2017	346	0	125	0	221		
SUM 2017	346	0	125	0	221		
WIN 2017	346	0	125	0	221		
SPR 2018	346	0	125	0	221		
SUM 2018	346	0	125	0	221		
WIN 2018	346	0	125	0	221		
SPR 2019	346	0	125	0	221		
SUM 2019	346	0	125	0	221		
WIN 2019	346	0	125	0	221		
SPR 2020	346	0	125	0	221		
SUM 2020	346	0	125	0	221		
WIN 2020	346	0	125	0	221		
SPR 2021	346	0	125	0	221		
SUM 2021	346	0	125	0	221		
WIN 2021	346	0	125	0	221		
SPR 2022	346	0	125	0	221		
SUM 2022	346	0	125	0	221		
WIN 2022	346	0	125	0	221		
SPR 2023	346	0	125	0	221		
SUM 2023	346	0	125	0	221		

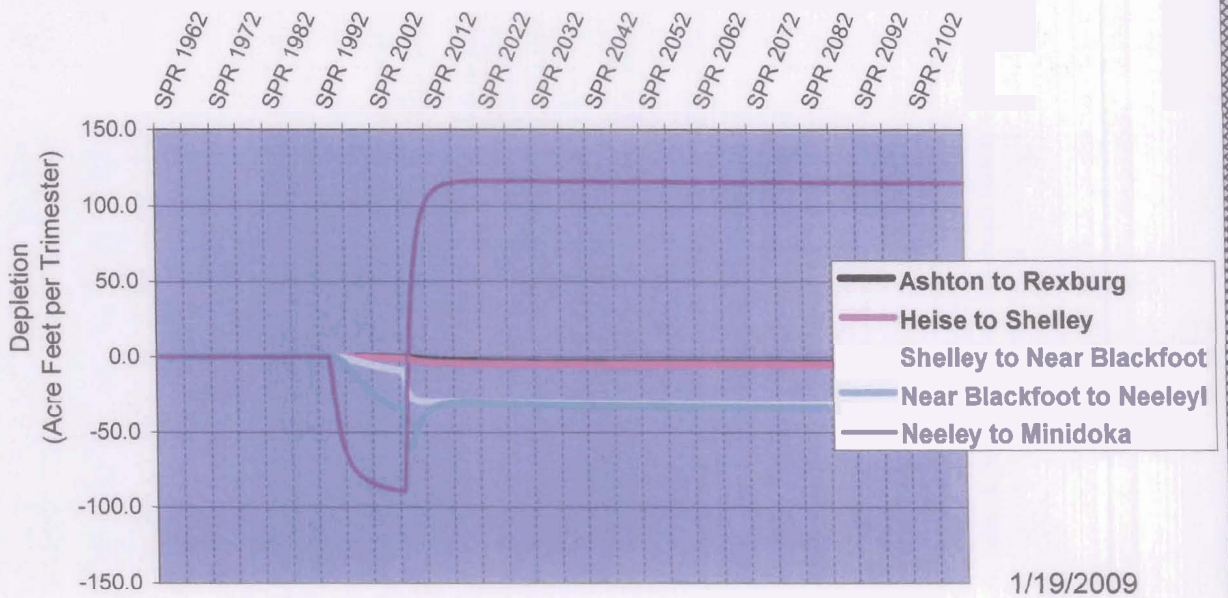
WIN 2023	346	0	125	0	221		
SPR 2024	346	0	125	0	221		
SUM 2024	346	0	125	0	221		
WIN 2024	346	0	125	0	221		
SPR 2025	346	0	125	0	221		
SUM 2025	346	0	125	0	221		
WIN 2025	346	0	125	0	221		
SPR 2026	346	0	125	0	221		
SUM 2026	346	0	125	0	221		
WIN 2026	346	0	125	0	221		
SPR 2027	346	0	125	0	221		
SUM 2027	346	0	125	0	221		
WIN 2027	346	0	125	0	221		
SPR 2028	346	0	125	0	221		
SUM 2028	346	0	125	0	221		
WIN 2028	346	0	125	0	221		
SPR 2029	346	0	125	0	221		
SUM 2029	346	0	125	0	221		
WIN 2029	346	0	125	0	221		
SPR 2030	346	0	125	0	221		
SUM 2030	346	0	125	0	221		
WIN 2030	346	0	125	0	221		
SPR 2031	346	0	125	0	221		
SUM 2031	346	0	125	0	221		
WIN 2031	346	0	125	0	221		
SPR 2032	346	0	125	0	221		
SUM 2032	346	0	125	0	221		
WIN 2032	346	0	125	0	221		
SPR 2033	346	0	125	0	221		
SUM 2033	346	0	125	0	221		
WIN 2033	346	0	125	0	221		
SPR 2034	346	0	125	0	221		
SUM 2034	346	0	125	0	221		
WIN 2034	346	0	125	0	221		
SPR 2035	346	0	125	0	221		
SUM 2035	346	0	125	0	221		
WIN 2035	346	0	125	0	221		
SPR 2036	346	0	125	0	221		
SUM 2036	346	0	125	0	221		
WIN 2036	346	0	125	0	221		
SPR 2037	346	0	125	0	221		
SUM 2037	346	0	125	0	221		
WIN 2037	346	0	125	0	221		
SPR 2038	346	0	125	0	221		
SUM 2038	346	0	125	0	221		
WIN 2038	346	0	125	0	221		
SPR 2039	346	0	125	0	221		
SUM 2039	346	0	125	0	221		
WIN 2039	346	0	125	0	221		
SPR 2040	346	0	125	0	221		
SUM 2040	346	0	125	0	221		
WIN 2040	346	0	125	0	221		
SPR 2041	346	0	125	0	221		
SUM 2041	346	0	125	0	221		
WIN 2041	346	0	125	0	221		
SPR 2042	346	0	125	0	221		
SUM 2042	346	0	125	0	221		
WIN 2042	346	0	125	0	221		
SPR 2043	346	0	125	0	221		
SUM 2043	346	0	125	0	221		
WIN 2043	346	0	125	0	221		
SPR 2044	346	0	125	0	221		
SUM 2044	346	0	125	0	221		
WIN 2044	346	0	125	0	221		
SPR 2045	346	0	125	0	221		
SUM 2045	346	0	125	0	221		
WIN 2045	346	0	125	0	221		
SPR 2046	346	0	125	0	221		
SUM 2046	346	0	125	0	221		
WIN 2046	346	0	125	0	221		
SPR 2047	346	0	125	0	221		
SUM 2047	346	0	125	0	221		
WIN 2047	346	0	125	0	221		
SPR 2048	346	0	125	0	221		
SUM 2048	346	0	125	0	221		
WIN 2048	346	0	125	0	221		
SPR 2049	346	0	125	0	221		
SUM 2049	346	0	125	0	221		
WIN 2049	346	0	125	0	221		
SPR 2050	346	0	125	0	221		
SUM 2050	346	0	125	0	221		
WIN 2050	346	0	125	0	221		
SPR 2051	346	0	125	0	221		
SUM 2051	346	0	125	0	221		
WIN 2051	346	0	125	0	221		
SPR 2052	346	0	125	0	221		
SUM 2052	346	0	125	0	221		
WIN 2052	346	0	125	0	221		
SPR 2053	346	0	125	0	221		
SUM 2053	346	0	125	0	221		
WIN 2053	346	0	125	0	221		
SPR 2054	346	0	125	0	221		
SUM 2054	346	0	125	0	221		
WIN 2054	346	0	125	0	221		
SPR 2055	346	0	125	0	221		
SUM 2055	346	0	125	0	221		
WIN 2055	346	0	125	0	221		
SPR 2056	346	0	125	0	221		
SUM 2056	346	0	125	0	221		
WIN 2056	346	0	125	0	221		
SPR 2057	346	0	125	0	221		
SUM 2057	346	0	125	0	221		
WIN 2057	346	0	125	0	221		
SPR 2058	346	0	125	0	221		
SUM 2058	346	0	125	0	221		
WIN 2058	346	0	125	0	221		
SPR 2059	346	0	125	0	221		
SUM 2059	346	0	125	0	221		
WIN 2059	346	0	125	0	221		
SPR 2060	346	0	125	0	221		

SUM 2060	346	0	125	0	221		
WIN 2060	346	0	125	0	221		
SPR 2061	346	0	125	0	221		
SUM 2061	346	0	125	0	221		
WIN 2061	346	0	125	0	221		
SPR 2062	346	0	125	0	221		
SUM 2062	346	0	125	0	221		
WIN 2062	346	0	125	0	221		
SPR 2063	346	0	125	0	221		
SUM 2063	346	0	125	0	221		
WIN 2063	346	0	125	0	221		
SPR 2064	346	0	125	0	221		
SUM 2064	346	0	125	0	221		
WIN 2064	346	0	125	0	221		
SPR 2065	346	0	125	0	221		
SUM 2065	346	0	125	0	221		
WIN 2065	346	0	125	0	221		
SPR 2066	346	0	125	0	221		
SUM 2066	346	0	125	0	221		
WIN 2066	346	0	125	0	221		
SPR 2067	346	0	125	0	221		
SUM 2067	346	0	125	0	221		
WIN 2067	346	0	125	0	221		
SPR 2068	346	0	125	0	221		
SUM 2068	346	0	125	0	221		
WIN 2068	346	0	125	0	221		
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SUM 2069	346	0	125	0	221		
WIN 2069	346	0	125	0	221		
SPR 2070	346	0	125	0	221		
SUM 2070	346	0	125	0	221		
WIN 2070	346	0	125	0	221		
SPR 2071	346	0	125	0	221		
SUM 2071	346	0	125	0	221		
WIN 2071	346	0	125	0	221		
SPR 2072	346	0	125	0	221		
SUM 2072	346	0	125	0	221		
WIN 2072	346	0	125	0	221		
SPR 2073	346	0	125	0	221		
SUM 2073	346	0	125	0	221		
WIN 2073	346	0	125	0	221		
SPR 2074	346	0	125	0	221		
SUM 2074	346	0	125	0	221		
WIN 2074	346	0	125	0	221		
SPR 2075	346	0	125	0	221		
SUM 2075	346	0	125	0	221		
WIN 2075	346	0	125	0	221		
SPR 2076	346	0	125	0	221		
SUM 2076	346	0	125	0	221		
WIN 2076	346	0	125	0	221		
SPR 2077	346	0	125	0	221		
SUM 2077	346	0	125	0	221		
WIN 2077	346	0	125	0	221		
SPR 2078	346	0	125	0	221		
SUM 2078	346	0	125	0	221		
WIN 2078	346	0	125	0	221		
SPR 2079	346	0	125	0	221		
SUM 2079	346	0	125	0	221		
WIN 2079	346	0	125	0	221		
SPR 2080	346	0	125	0	221		
SUM 2080	346	0	125	0	221		
WIN 2080	346	0	125	0	221		
SPR 2081	346	0	125	0	221		
SUM 2081	346	0	125	0	221		
WIN 2081	346	0	125	0	221		
SPR 2082	346	0	125	0	221		
SUM 2082	346	0	125	0	221		
WIN 2082	346	0	125	0	221		
SPR 2083	346	0	125	0	221		
SUM 2083	346	0	125	0	221		
WIN 2083	346	0	125	0	221		
SPR 2084	346	0	125	0	221		
SUM 2084	346	0	125	0	221		
WIN 2084	346	0	125	0	221		
SPR 2085	346	0	125	0	221		
SUM 2085	346	0	125	0	221		
WIN 2085	346	0	125	0	221		
SPR 2086	346	0	125	0	221		
SUM 2086	346	0	125	0	221		
WIN 2086	346	0	125	0	221		
SPR 2087	346	0	125	0	221		
SUM 2087	346	0	125	0	221		
WIN 2087	346	0	125	0	221		
SPR 2088	346	0	125	0	221		
SUM 2088	346	0	125	0	221		
WIN 2088	346	0	125	0	221		
SPR 2089	346	0	125	0	221		
SUM 2089	346	0	125	0	221		
WIN 2089	346	0	125	0	221		
SPR 2090	346	0	125	0	221		
SUM 2090	346	0	125	0	221		
WIN 2090	346	0	125	0	221		
SPR 2091	346	0	125	0	221		
SUM 2091	346	0	125	0	221		
WIN 2091	346	0	125	0	221		
SPR 2092	346	0	125	0	221		
SUM 2092	346	0	125	0	221		
WIN 2092	346	0	125	0	221		
SPR 2093	346	0	125	0	221		
SUM 2093	346	0	125	0	221		
WIN 2093	346	0	125	0	221		
SPR 2094	346	0	125	0	221		
SUM 2094	346	0	125	0	221		
WIN 2094	346	0	125	0	221		
SPR 2095	346	0	125	0	221		
SUM 2095	346	0	125	0	221		
WIN 2095	346	0	125	0	221		
SPR 2096	346	0	125	0	221		
SUM 2096	346	0	125	0	221		
WIN 2096	346	0	125	0	221		

SPR 2097	346	0	125	0	221		
SUM 2097	346	0	125	0	221		
WIN 2097	346	0	125	0	221		
SPR 2098	346	0	125	0	221		
SUM 2098	346	0	125	0	221		
WIN 2098	346	0	125	0	221		
SPR 2099	346	0	125	0	221		
SUM 2099	346	0	125	0	221		
WIN 2099	346	0	125	0	221		
SPR 2100	346	0	125	0	221		
SUM 2100	346	0	125	0	221		
WIN 2100	346	0	125	0	221		
SPR 2101	346	0	125	0	221		
SUM 2101	346	0	125	0	221		
WIN 2101	346	0	125	0	221		
SPR 2102	346	0	125	0	221		
SUM 2102	346	0	125	0	221		
WIN 2102	346	0	125	0	221		
SPR 2103	346	0	125	0	221		
SUM 2103	346	0	125	0	221		
WIN 2103	346	0	125	0	221		
SPR 2104	346	0	125	0	221		
SUM 2104	346	0	125	0	221		
WIN 2104	346	0	125	0	221		
SPR 2105	346	0	125	0	221		
SUM 2105	346	0	125	0	221		
WIN 2105	346	0	125	0	221		
SPR 2106	346	0	125	0	221		
SUM 2106	346	0	125	0	221		
WIN 2106	346	0	125	0	221		
SPR 2107	346	0	125	0	221		
SUM 2107	346	0	125	0	221		
WIN 2107	346	0	125	0	221		
SPR 2108	346	0	125	0	221		
SUM 2108	346	0	125	0	221		
WIN 2108	346	0	125	0	221		
SPR 2109	346	0	125	0	221		
SUM 2109	346	0	125	0	221		
WIN 2109	346	0	125	0	221		
SPR 2110	346	0	125	0	221		
SUM 2110	346	0	125	0	221		
WIN 2110	346	0	125	0	221		
SPR 2111	346	0	125	0	221		
SUM 2111	346	0	125	0	221		
WIN 2111	346	0	125	0	221		

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

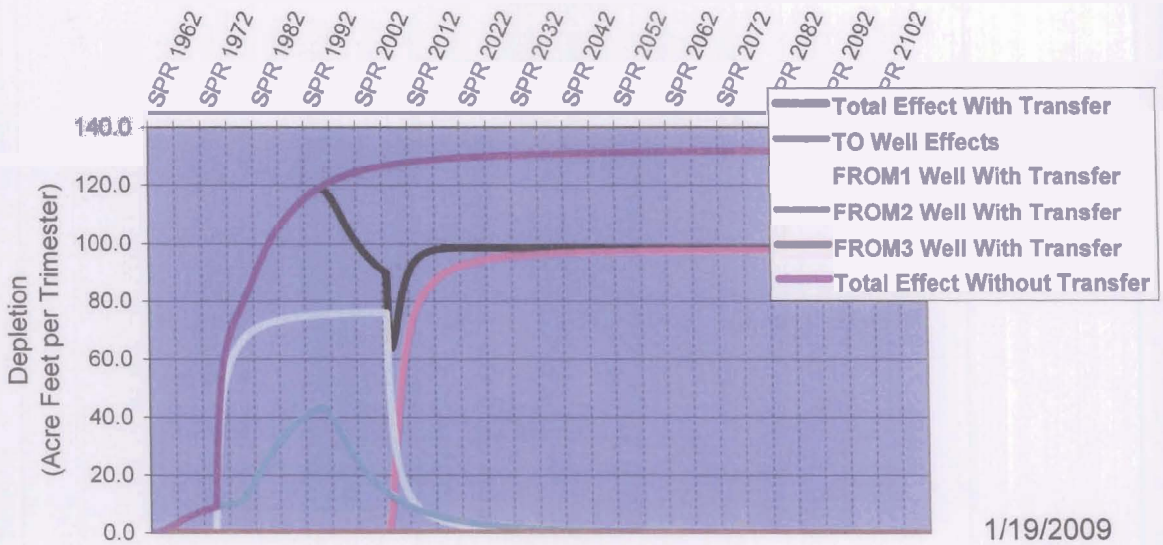


1/19/2009
Version 3.1

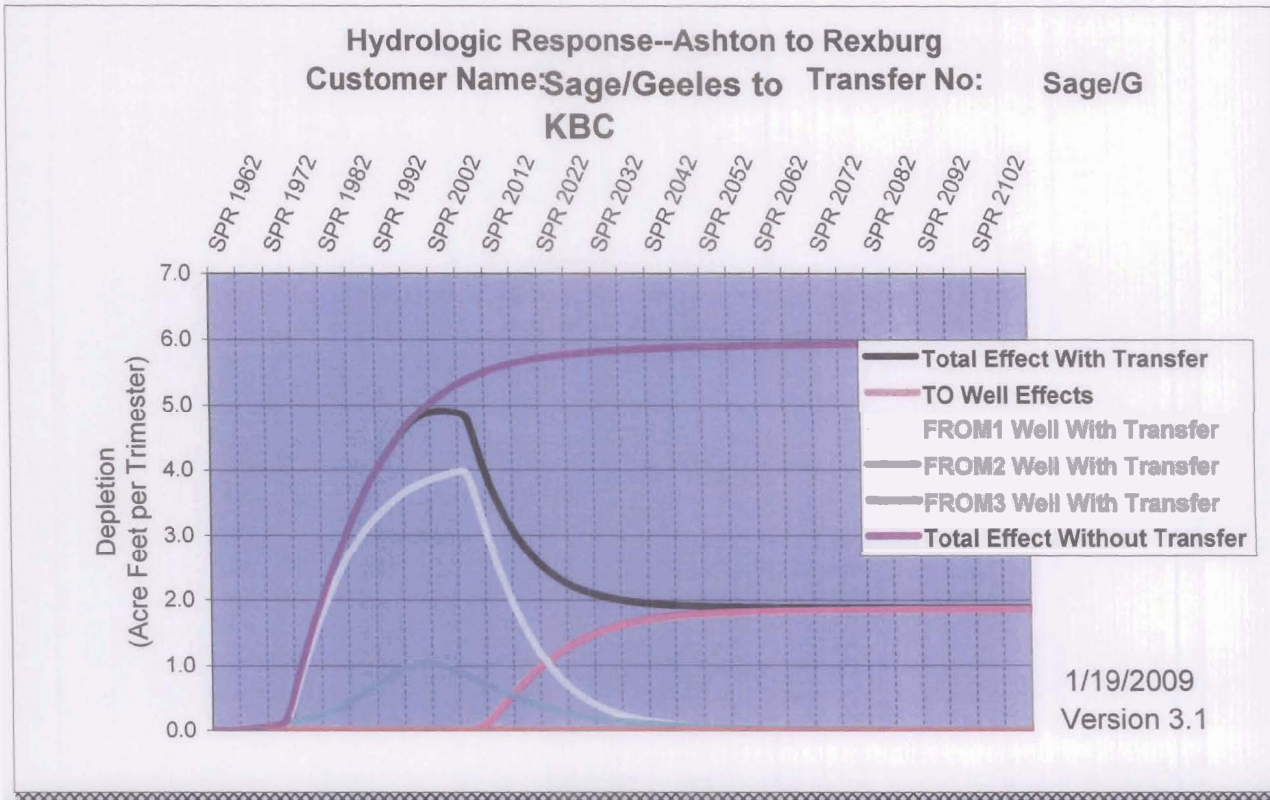
Customer Name: Sage/Geeles to KBC **Transfer No:** Sage/G

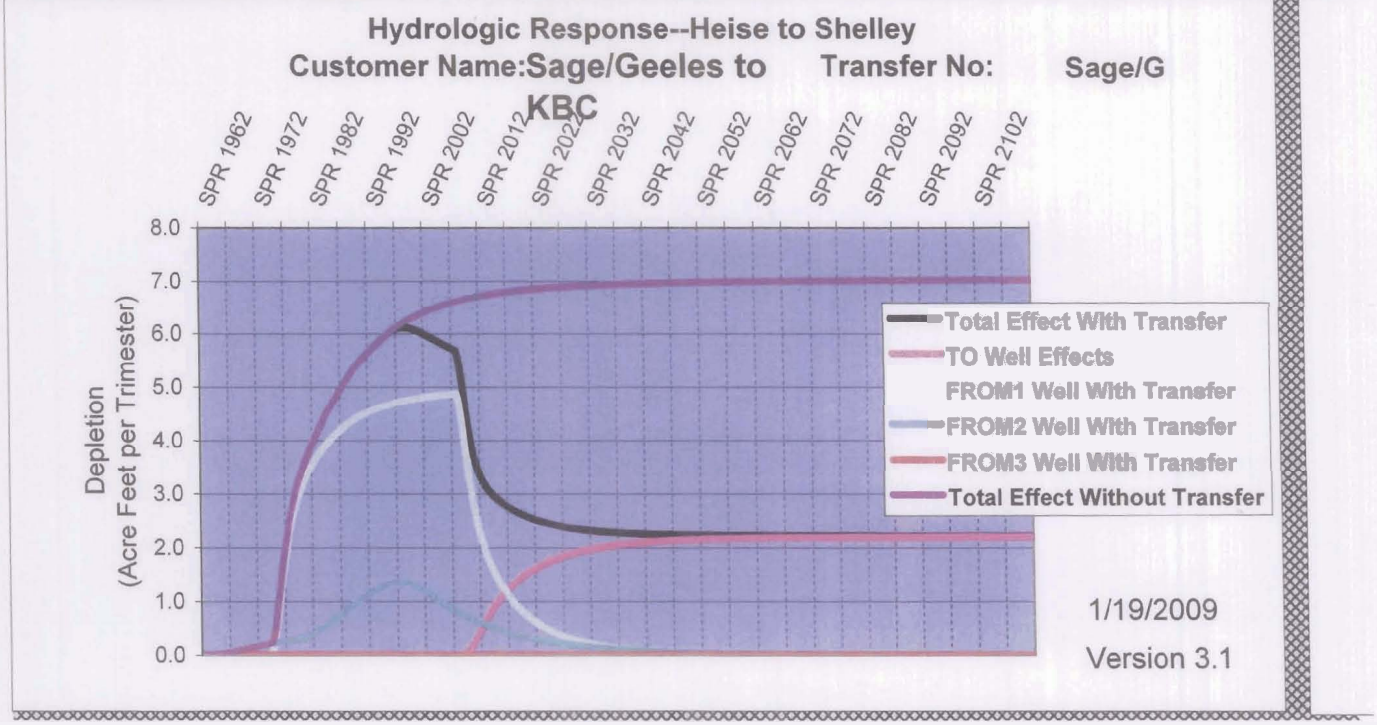
Hydrologic Response-- Near Blackfoot to Neeley

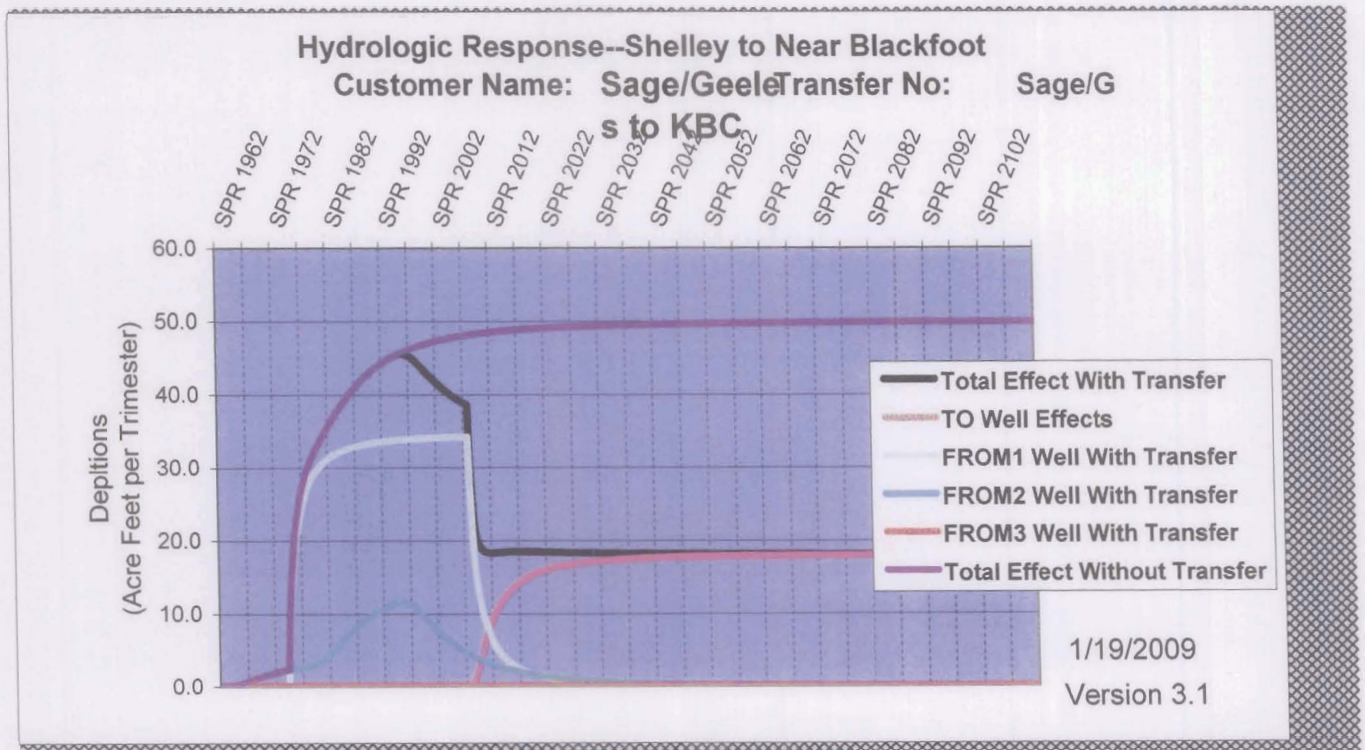
Customer Name: Sage/Geeles to KBC **Transfer No:** Sage/G

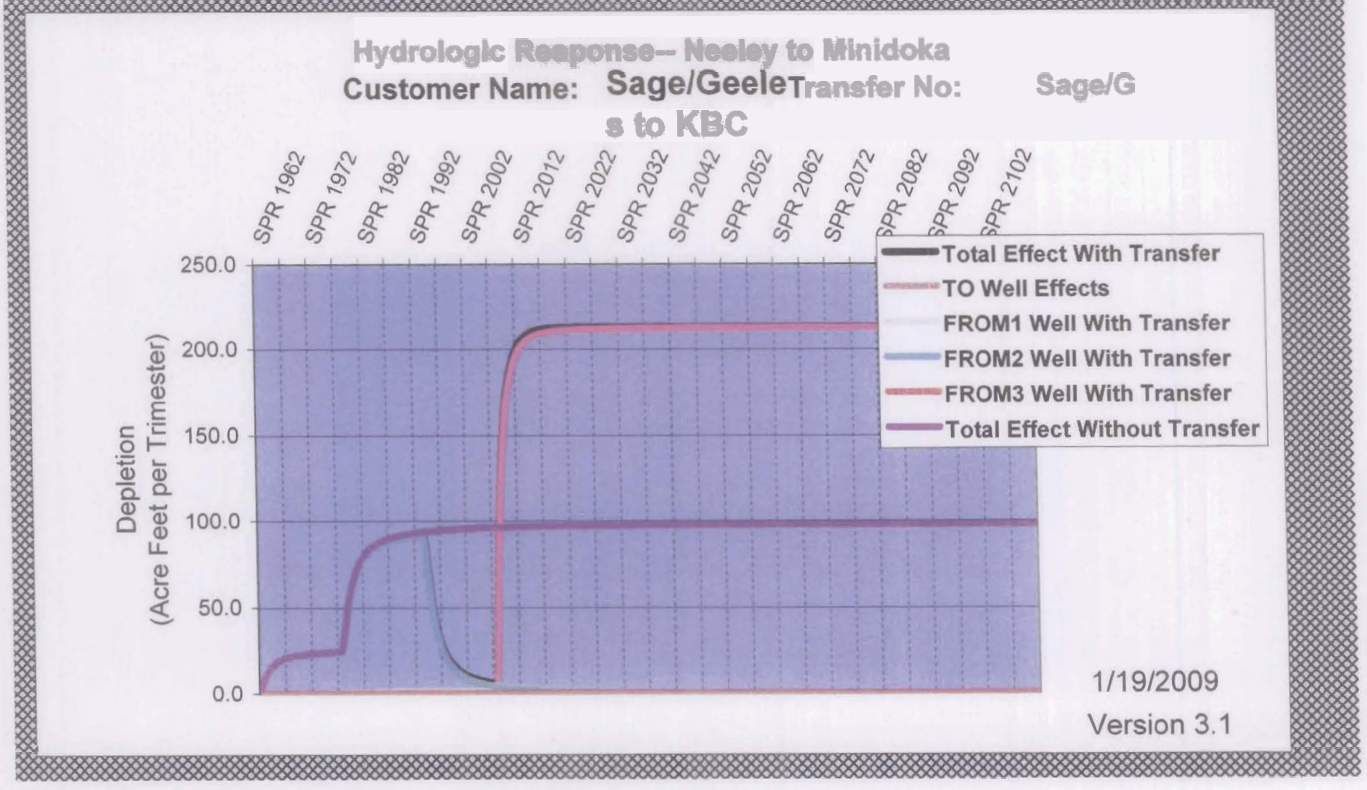


1/19/2009
Version 3.1


Hydrologic Response--Ashton to Rexburg
Customer Name:Sage/Geeles to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

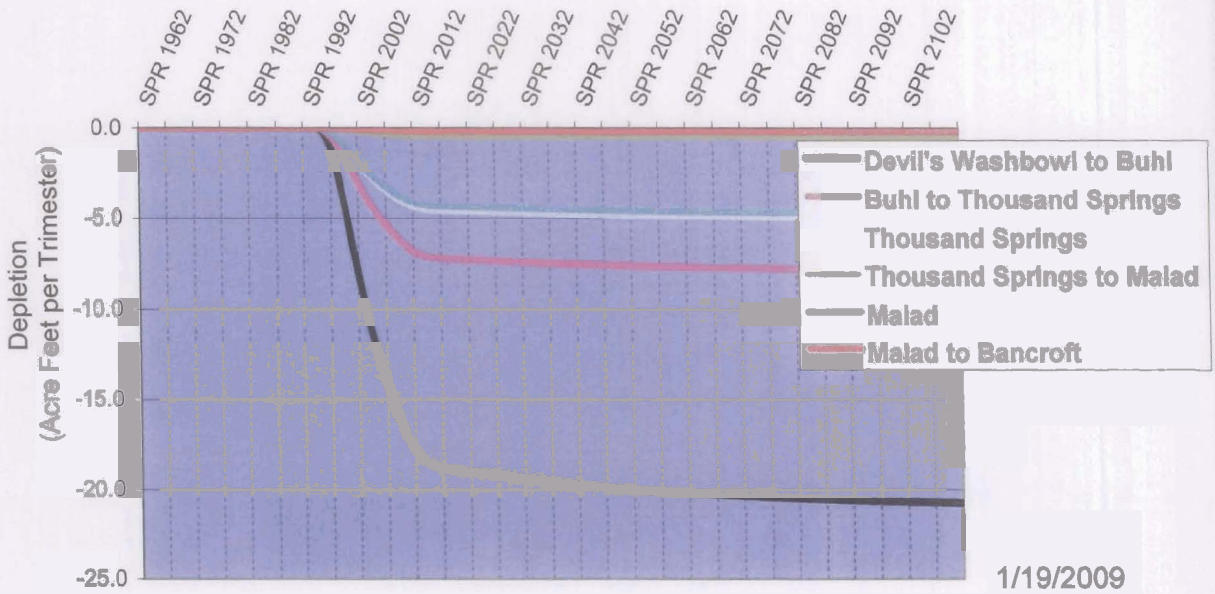

Hydrologic Response--Heise to Shelley
Customer Name:Sage/Geeles to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage/Geele
s to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage/Geele
s to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
250.0
200.0
150.0
100.0
50.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

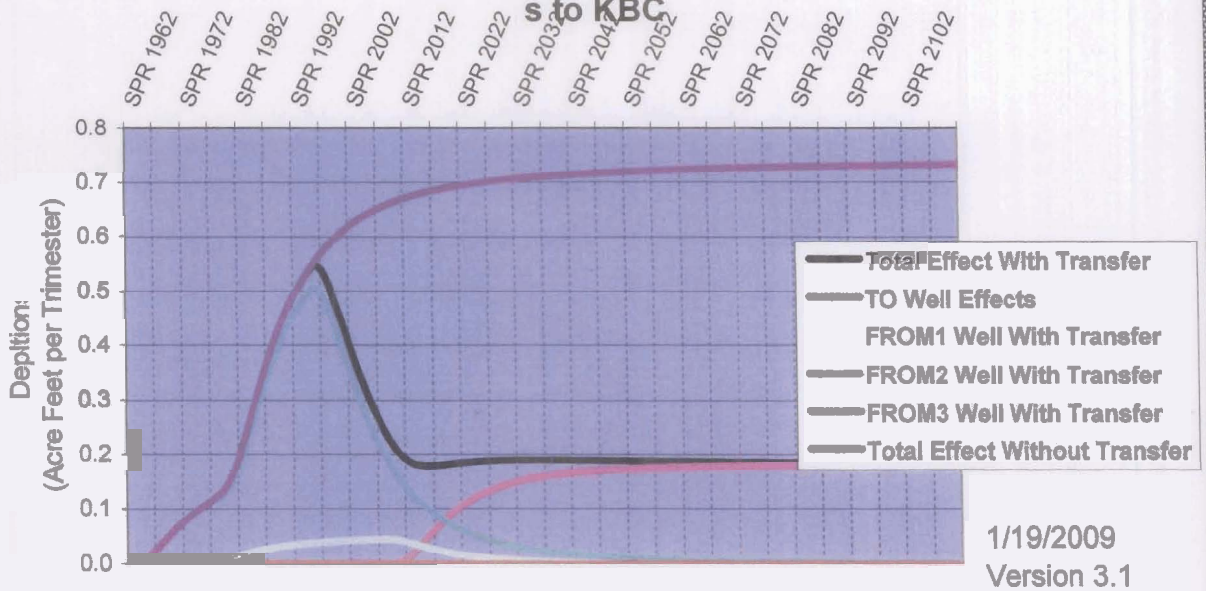


1/19/2009
Version 3.1

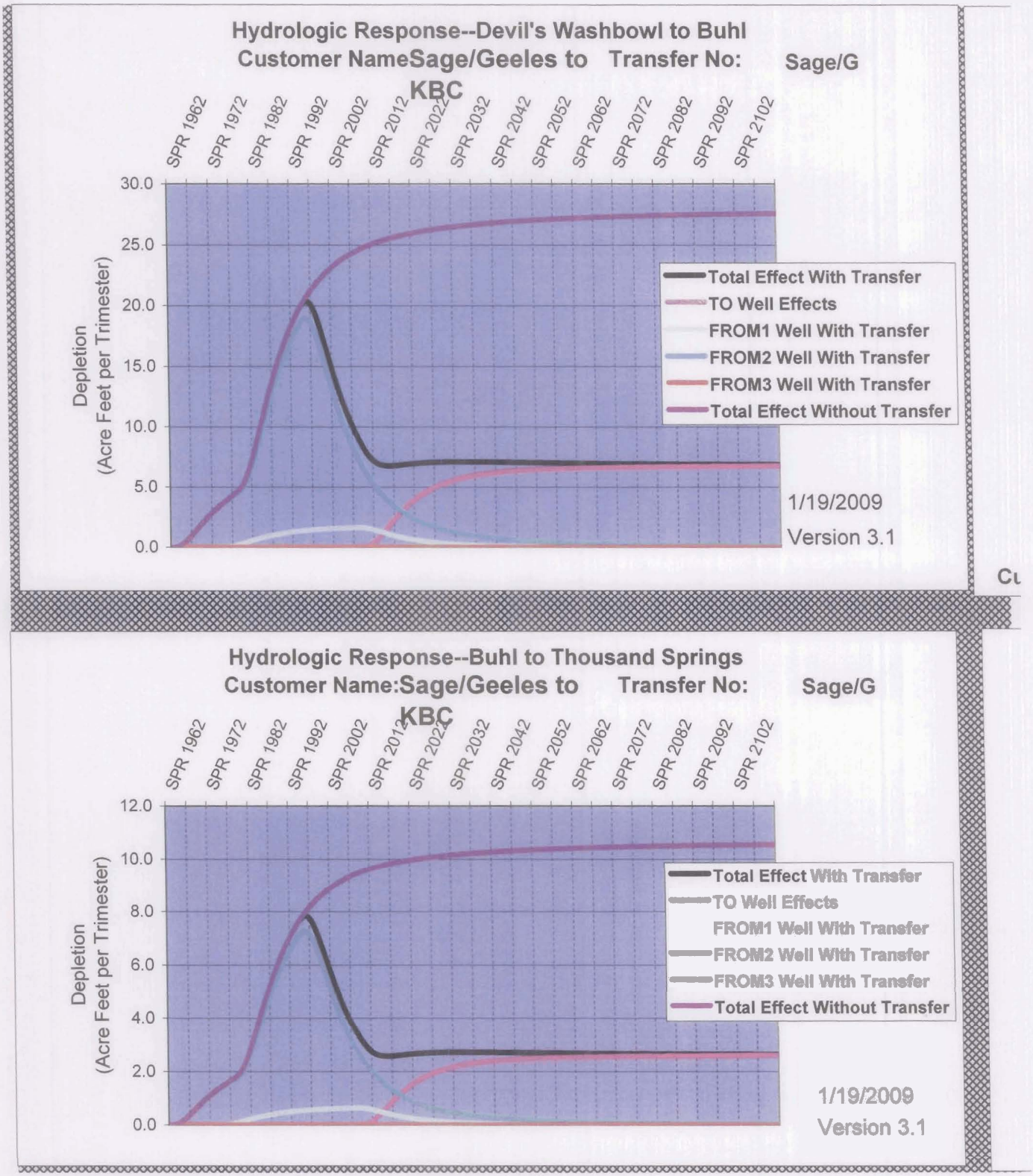
Customer Name: Sage/Geeles to KBC Transfer No: Sage/G

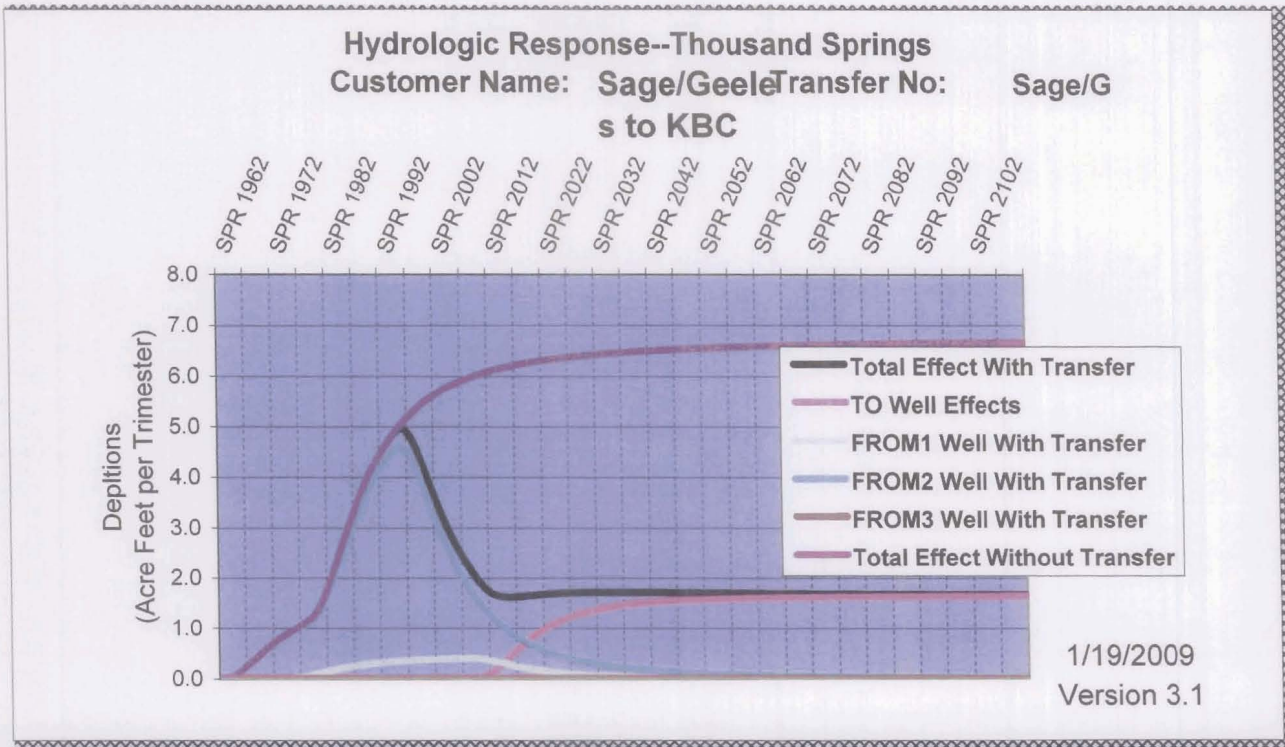
Hydrologic Response--Thousand Springs to Malad

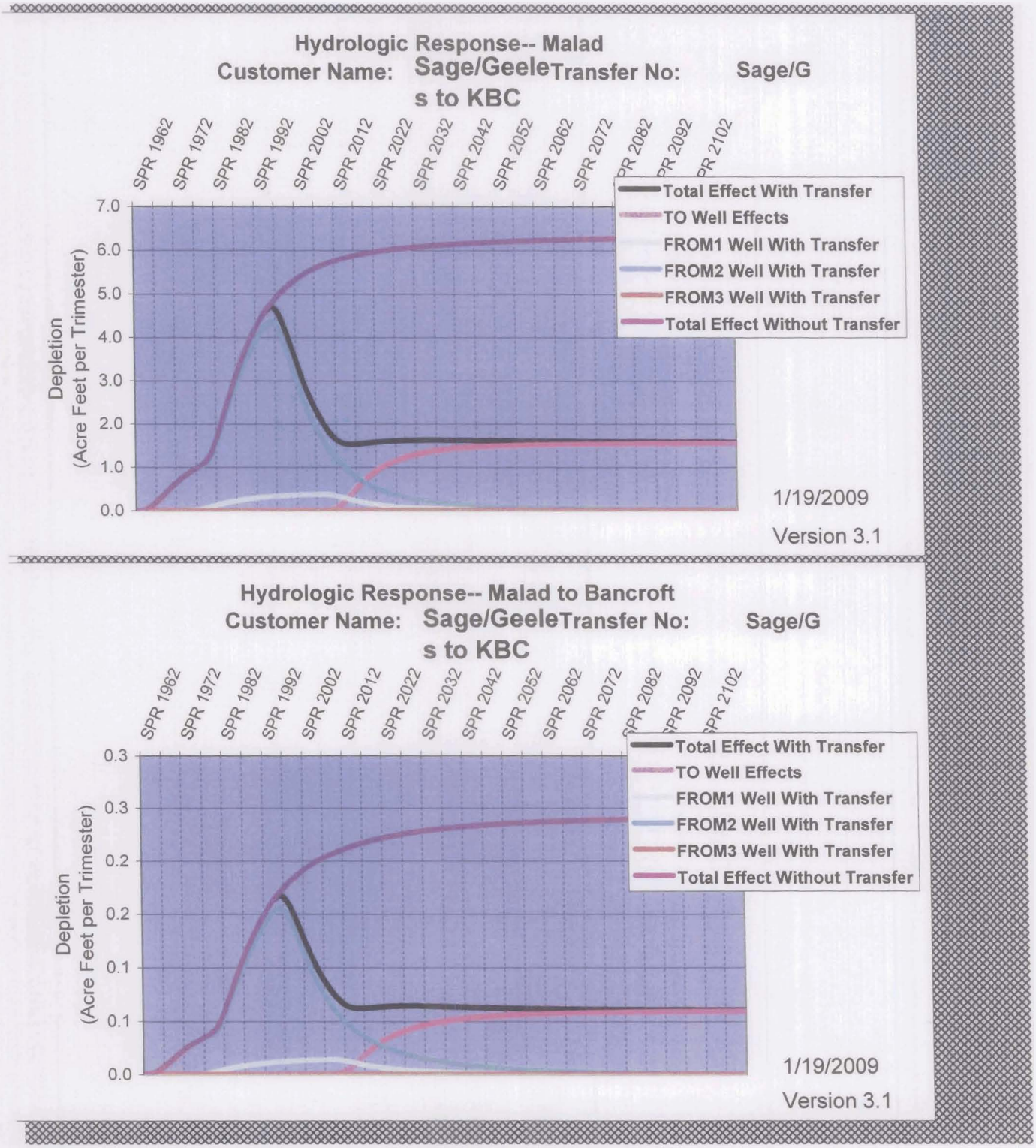
Customer Name: Sage/Geele Transfer No: Sage/G
s to KBC



1/19/2009
Version 3.1


Hydrologic Response--Devil's Washbowl to Buhl
Customer NameSage/Geeles to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1
Hydrologic Response--Buhl to Thousand Springs
Customer Name:Sage/Geeles to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

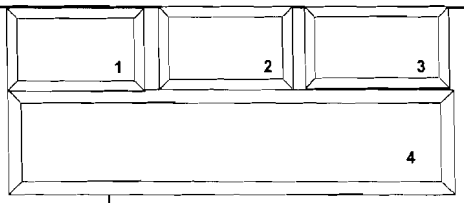

Hydrologic Response--Thousand Springs
Customer Name: Sage/Geele
s to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Malad
Customer Name: Sage/Geele
s to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion
(Acre Feet per Trimester)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1
Hydrologic Response-- Malad to Bancroft
Customer Name: Sage/Geele
s to KBC
Transfer No: Sage/G
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion
(Acre Feet per Trimester)
0.3
0.3
0.2
0.2
0.1
0.1
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

UNIVERSITY OF IDAHO - IDAHO WATER RESOURCES RESEARCH INSTITUTE | **IDAHO DEPARTMENT OF WATER RESOURCES**

Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON		TRANSFER NO:
		Sage to Alliance
YEAR	1962	TRANSFER NAME:
SEASON	SPRING	Sage to Alliance

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	85	91		
COLUMN	43	69		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	15	15				
SUM 1962	0	15	15				
WIN 1962	0	15	15				
SPR 1963	0	15	15				
SUM 1963	0	15	15				
WIN 1963	0	15	15				
SPR 1964	0	15	15				
SUM 1964	0	15	15				
WIN 1964	0	15	15				
SPR 1965	0	15	15				
SUM 1965	0	15	15				
WIN 1965	0	15	15				
SPR 1966	0	15	15				
SUM 1966	0	15	15				
WIN 1966	0	15	15				
SPR 1967	0	15	15				
SUM 1967	0	15	15				
WIN 1967	0	15	15				
SPR 1968	0	15	15				
SUM 1968	0	15	15				
WIN 1968	0	15	15				
SPR 1969	0	15	15				
SUM 1969	0	15	15				
WIN 1969	0	15	15				
SPR 1970	0	15	15				
SUM 1970	0	15	15				
WIN 1970	0	15	15				
SPR 1971	0	15	15				
SUM 1971	0	15	15				
WIN 1971	0	15	15				
SPR 1972	0	15	15				
SUM 1972	0	15	15				
WIN 1972	0	15	15				
SPR 1973	0	15	15				
SUM 1973	0	15	15				
WIN 1973	0	15	15				
SPR 1974	0	56	56				
SUM 1974	0	56	56				
WIN 1974	0	56	56				
SPR 1975	0	56	56				
SUM 1975	0	56	56				
WIN 1975	0	56	56				
SPR 1976	0	56	56				
SUM 1976	0	56	56				
WIN 1976	0	56	56				
SPR 1977	0	56	56				
SUM 1977	0	56	56				
WIN 1977	0	56	56				
SPR 1978	0	56	56				
SUM 1978	0	56	56				
WIN 1978	0	56	56				
SPR 1979	0	56	56				
SUM 1979	0	56	56				
WIN 1979	0	56	56				
SPR 1980	0	56	56				
SUM 1980	0	56	56				
WIN 1980	0	56	56				
SPR 1981	0	56	56				
SUM 1981	0	56	56				
WIN 1981	0	56	56				
SPR 1982	0	56	56				
SUM 1982	0	56	56				
WIN 1982	0	56	56				
SPR 1983	0	56	56				
SUM 1983	0	56	56				
WIN 1983	0	56	56				
SPR 1984	0	56	56				
SUM 1984	0	56	56				
WIN 1984	0	56	56				
SPR 1985	0	56	56				
SUM 1985	0	56	56				
WIN 1985	0	56	56				
SPR 1986	0	56	56				
SUM 1986	0	56	56				
WIN 1986	0	56	56				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired timel
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TC
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority date

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use shou

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colur
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	56	56
SUM 1987	0	56	56
WIN 1987	0	56	56
SPR 1988	0	56	56
SUM 1988	0	56	56
WIN 1988	0	56	56
SPR 1989	0	56	56
SUM 1989	0	56	56
WIN 1989	0	56	56
SPR 1990	0	56	56
SUM 1990	0	56	56
WIN 1990	0	56	56
SPR 1991	0	56	56
SUM 1991	0	56	56
WIN 1991	0	56	56
SPR 1992	0	56	56
SUM 1992	0	56	56
WIN 1992	0	56	56
SPR 1993	0	56	56
SUM 1993	0	56	56
WIN 1993	0	56	56
SPR 1994	0	0	56
SUM 1994	0	0	56
WIN 1994	0	0	56
SPR 1995	0	0	56
SUM 1995	0	0	56
WIN 1995	0	0	56
SPR 1996	0	0	56
SUM 1996	0	0	56
WIN 1996	0	0	56
SPR 1997	0	0	56
SUM 1997	0	0	56
WIN 1997	0	0	56
SPR 1998	0	0	56
SUM 1998	0	0	56
WIN 1998	0	0	56
SPR 1999	0	0	56
SUM 1999	0	0	56
WIN 1999	0	0	56
SPR 2000	0	0	56
SUM 2000	0	0	56
WIN 2000	0	0	56
SPR 2001	0	0	56
SUM 2001	0	0	56
WIN 2001	0	0	56
SPR 2002	0	0	56
SUM 2002	0	0	56
WIN 2002	0	0	56
SPR 2003	0	0	56
SUM 2003	0	0	56
WIN 2003	0	0	56
SPR 2004	0	0	56
SUM 2004	0	0	56
WIN 2004	0	0	56
SPR 2005	0	0	56
SUM 2005	0	0	56
WIN 2005	0	0	56
SPR 2006	0	0	56
SUM 2006	0	0	56
WIN 2006	0	0	56
SPR 2007	0	0	56
SUM 2007	0	0	56
WIN 2007	0	0	56
SPR 2008	56	0	56
SUM 2008	56	0	56
WIN 2008	56	0	56
SPR 2009	56	0	56
SUM 2009	56	0	56
WIN 2009	56	0	56
SPR 2010	56	0	56
SUM 2010	56	0	56
WIN 2010	56	0	56
SPR 2011	56	0	56
SUM 2011	56	0	56
WIN 2011	56	0	56
SPR 2012	56	0	56
SUM 2012	56	0	56
WIN 2012	56	0	56
SPR 2013	56	0	56
SUM 2013	56	0	56
WIN 2013	56	0	56
SPR 2014	56	0	56
SUM 2014	56	0	56
WIN 2014	56	0	56
SPR 2015	56	0	56
SUM 2015	56	0	56
WIN 2015	56	0	56
SPR 2016	56	0	56
SUM 2016	56	0	56
WIN 2016	56	0	56
SPR 2017	56	0	56
SUM 2017	56	0	56
WIN 2017	56	0	56
SPR 2018	56	0	56
SUM 2018	56	0	56
WIN 2018	56	0	56
SPR 2019	56	0	56
SUM 2019	56	0	56
WIN 2019	56	0	56
SPR 2020	56	0	56
SUM 2020	56	0	56
WIN 2020	56	0	56
SPR 2021	56	0	56
SUM 2021	56	0	56
WIN 2021	56	0	56
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SUM 2023	56	0	56

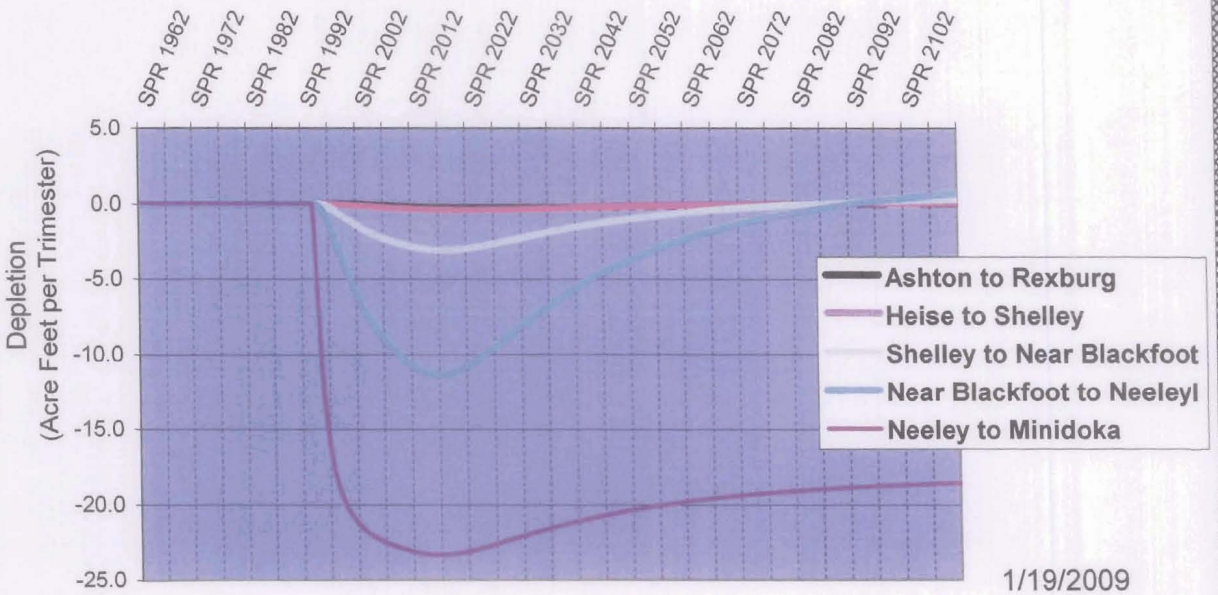
WIN 2023	56	0	56
SPR 2024	56	0	56
SUM 2024	56	0	56
WIN 2024	56	0	56
SPR 2025	56	0	56
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WIN 2025	56	0	56
SPR 2026	56	0	56
SUM 2026	56	0	56
WIN 2026	56	0	56
SPR 2027	56	0	56
SUM 2027	56	0	56
WIN 2027	56	0	56
SPR 2028	56	0	56
SUM 2028	56	0	56
WIN 2028	56	0	56
SPR 2029	56	0	56
SUM 2029	56	0	56
WIN 2029	56	0	56
SPR 2030	56	0	56
SUM 2030	56	0	56
WIN 2030	56	0	56
SPR 2031	56	0	56
SUM 2031	56	0	56
WIN 2031	56	0	56
SPR 2032	56	0	56
SUM 2032	56	0	56
WIN 2032	56	0	56
SPR 2033	56	0	56
SUM 2033	56	0	56
WIN 2033	56	0	56
SPR 2034	56	0	56
SUM 2034	56	0	56
WIN 2034	56	0	56
SPR 2035	56	0	56
SUM 2035	56	0	56
WIN 2035	56	0	56
SPR 2036	56	0	56
SUM 2036	56	0	56
WIN 2036	56	0	56
SPR 2037	56	0	56
SUM 2037	56	0	56
WIN 2037	56	0	56
SPR 2038	56	0	56
SUM 2038	56	0	56
WIN 2038	56	0	56
SPR 2039	56	0	56
SUM 2039	56	0	56
WIN 2039	56	0	56
SPR 2040	56	0	56
SUM 2040	56	0	56
WIN 2040	56	0	56
SPR 2041	56	0	56
SUM 2041	56	0	56
WIN 2041	56	0	56
SPR 2042	56	0	56
SUM 2042	56	0	56
WIN 2042	56	0	56
SPR 2043	56	0	56
SUM 2043	56	0	56
WIN 2043	56	0	56
SPR 2044	56	0	56
SUM 2044	56	0	56
WIN 2044	56	0	56
SPR 2045	56	0	56
SUM 2045	56	0	56
WIN 2045	56	0	56
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SUM 2046	56	0	56
WIN 2046	56	0	56
SPR 2047	56	0	56
SUM 2047	56	0	56
WIN 2047	56	0	56
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WIN 2048	56	0	56
SPR 2049	56	0	56
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WIN 2049	56	0	56
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SUM 2052	56	0	56
WIN 2052	56	0	56
SPR 2053	56	0	56
SUM 2053	56	0	56
WIN 2053	56	0	56
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SUM 2059	56	0	56
WIN 2059	56	0	56
SPR 2060	56	0	56

SUM 2060	56	0	56
WIN 2060	56	0	56
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SUM 2061	56	0	56
WIN 2061	56	0	56
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SUM 2062	56	0	56
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WIN 2063	56	0	56
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WIN 2064	56	0	56
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WIN 2067	56	0	56
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WIN 2068	56	0	56
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WIN 2069	56	0	56
SPR 2070	56	0	56
SUM 2070	56	0	56
WIN 2070	56	0	56
SPR 2071	56	0	56
SUM 2071	56	0	56
WIN 2071	56	0	56
SPR 2072	56	0	56
SUM 2072	56	0	56
WIN 2072	56	0	56
SPR 2073	56	0	56
SUM 2073	56	0	56
WIN 2073	56	0	56
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WIN 2074	56	0	56
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SUM 2075	56	0	56
WIN 2075	56	0	56
SPR 2076	56	0	56
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WIN 2076	56	0	56
SPR 2077	56	0	56
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WIN 2077	56	0	56
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WIN 2079	56	0	56
SPR 2080	56	0	56
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WIN 2080	56	0	56
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WIN 2081	56	0	56
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WIN 2082	56	0	56
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SUM 2091	56	0	56
WIN 2091	56	0	56
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WIN 2093	56	0	56
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WIN 2094	56	0	56
SPR 2095	56	0	56
SUM 2095	56	0	56
WIN 2095	56	0	56
SPR 2096	56	0	56
SUM 2096	56	0	56
WIN 2096	56	0	56

SPR 2097	56	0	56				
SUM 2097	56	0	56				
WIN 2097	56	0	56				
SPR 2098	56	0	56				
SUM 2098	56	0	56				
WIN 2098	56	0	56				
SPR 2099	56	0	56				
SUM 2099	56	0	56				
WIN 2099	56	0	56				
SPR 2100	56	0	56				
SUM 2100	56	0	56				
WIN 2100	56	0	56				
SPR 2101	56	0	56				
SUM 2101	56	0	56				
WIN 2101	56	0	56				
SPR 2102	56	0	56				
SUM 2102	56	0	56				
WIN 2102	56	0	56				
SPR 2103	56	0	56				
SUM 2103	56	0	56				
WIN 2103	56	0	56				
SPR 2104	56	0	56				
SUM 2104	56	0	56				
WIN 2104	56	0	56				
SPR 2105	56	0	56				
SUM 2105	56	0	56				
WIN 2105	56	0	56				
SPR 2106	56	0	56				
SUM 2106	56	0	56				
WIN 2106	56	0	56				
SPR 2107	56	0	56				
SUM 2107	56	0	56				
WIN 2107	56	0	56				
SPR 2108	56	0	56				
SUM 2108	56	0	56				
WIN 2108	56	0	56				
SPR 2109	56	0	56				
SUM 2109	56	0	56				
WIN 2109	56	0	56				
SPR 2110	56	0	56				
SUM 2110	56	0	56				
WIN 2110	56	0	56				
SPR 2111	56	0	56				
SUM 2111	56	0	56				
WIN 2111	56	0	56				

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

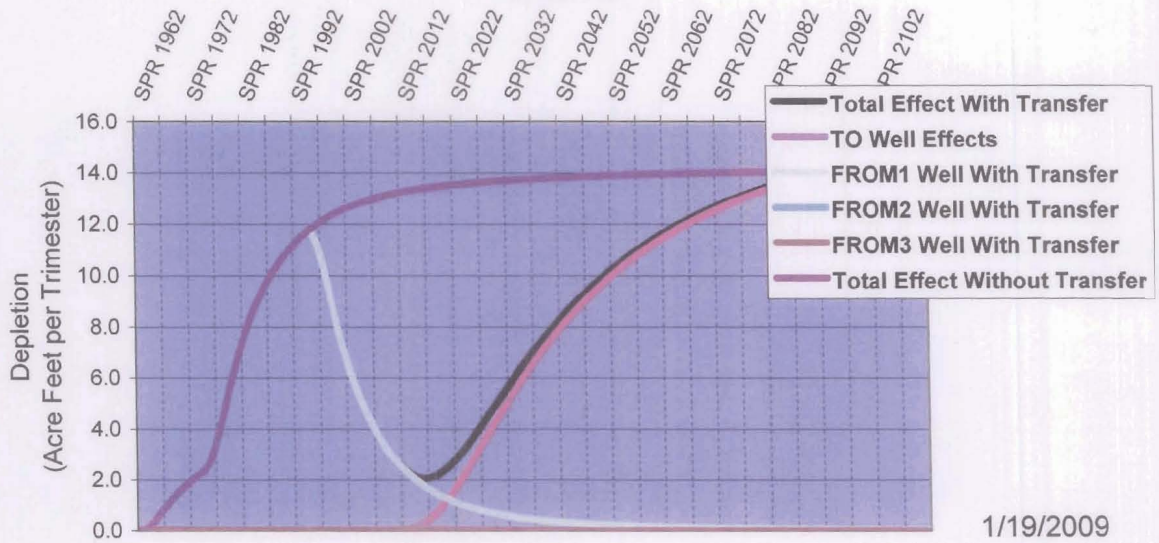


1/19/2009
Version 3.1

Customer Name: Sage to Alliance **Transfer No: Sage to**

Hydrologic Response-- Near Blackfoot to Neeley

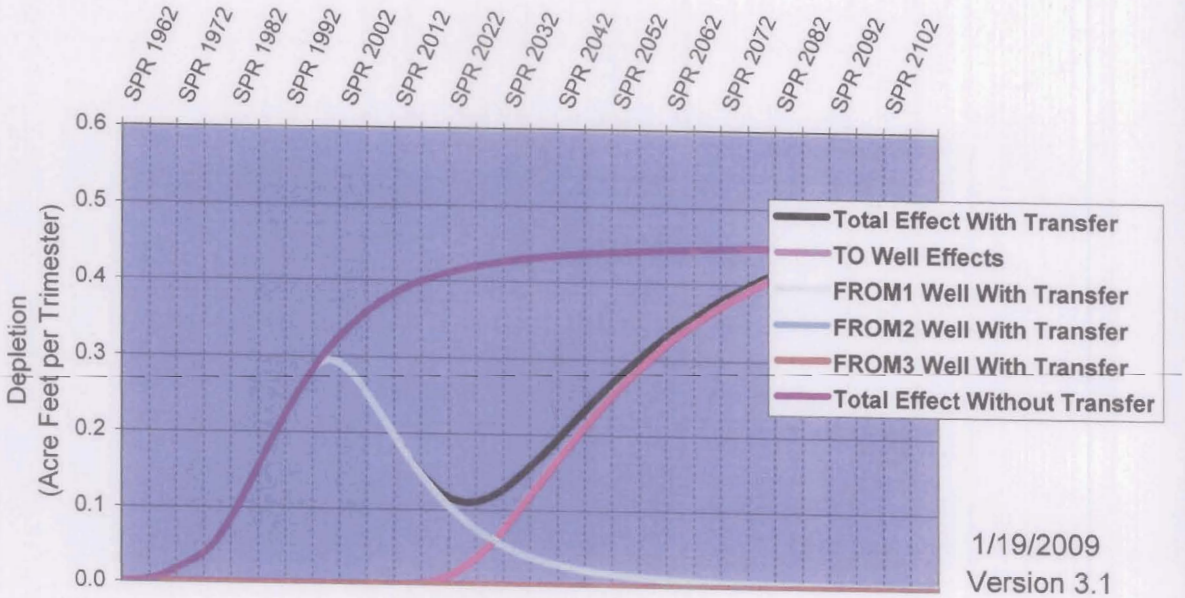
Customer Name: Sage to Alliance **Transfer No: Sage to**



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

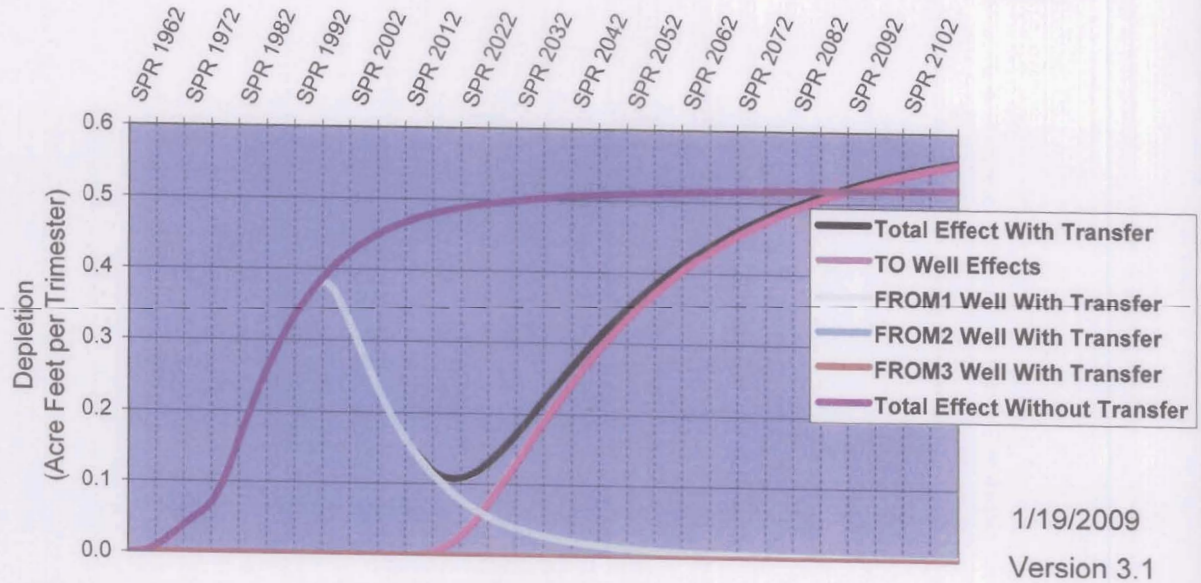
Customer Name: Sage to Alliance **Transfer No:** Sage to



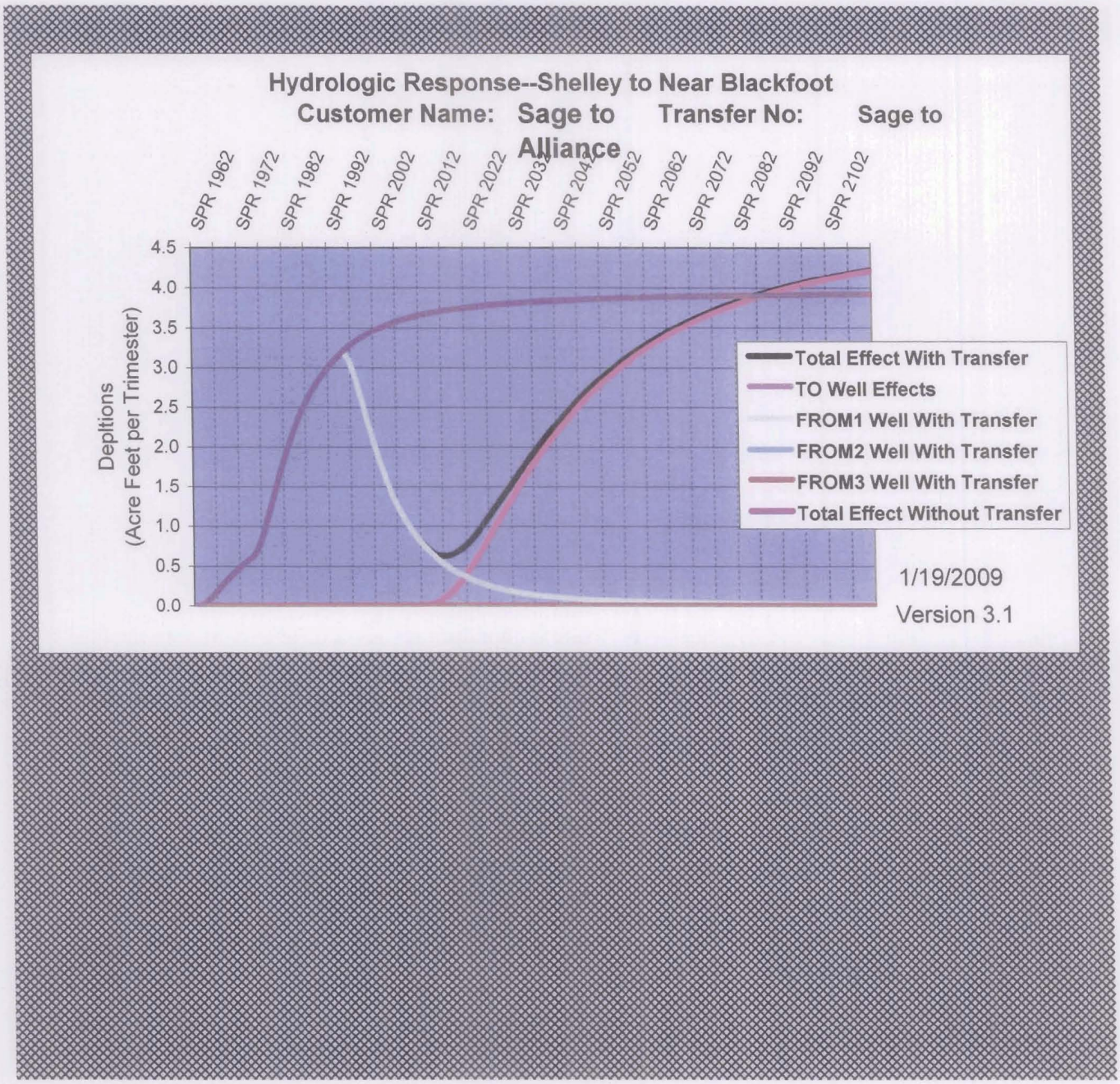
1/19/2009
Version 3.1

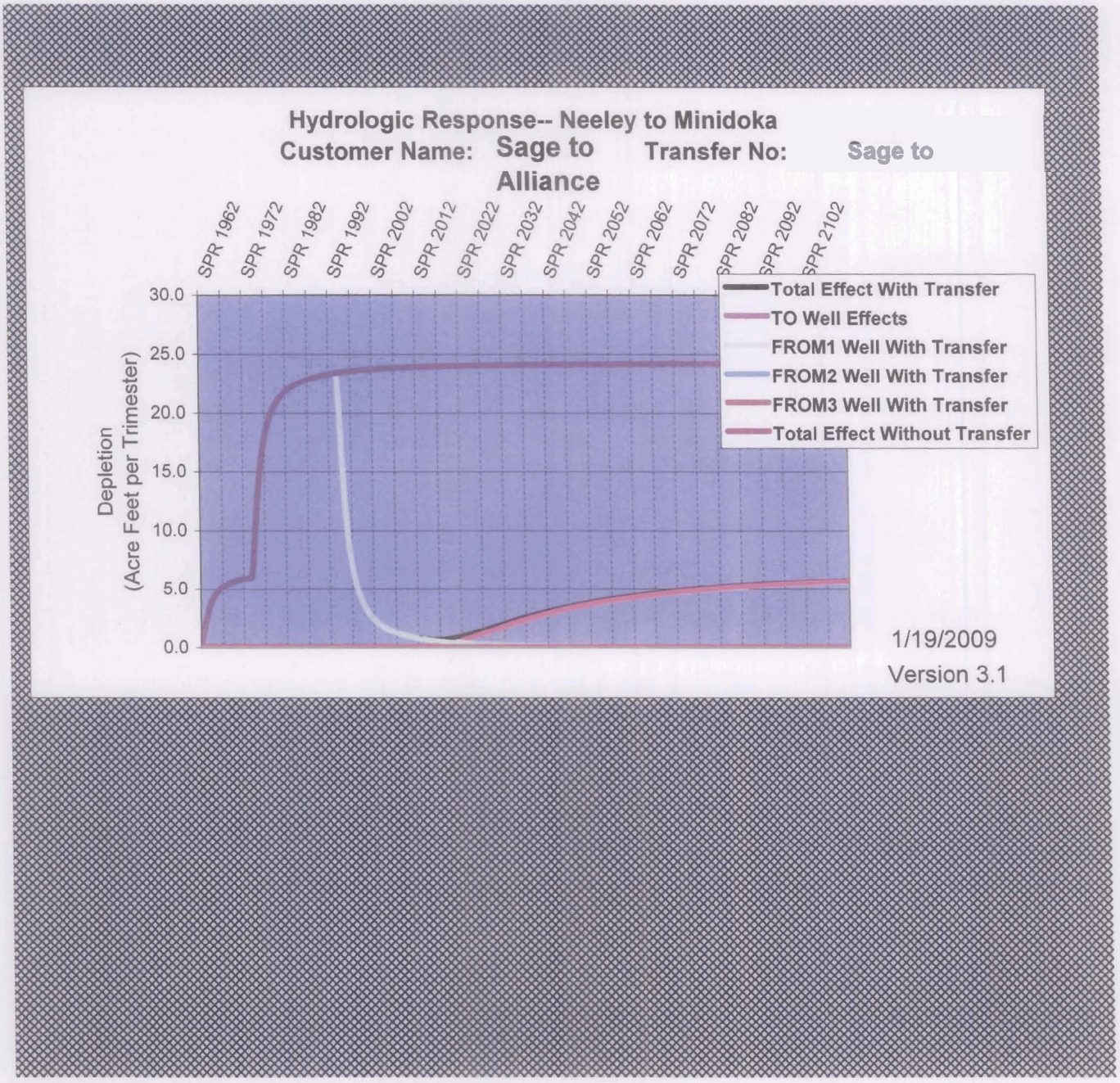
Hydrologic Response--Heise to Shelley

Customer Name: Sage to Alliance **Transfer No:** Sage to

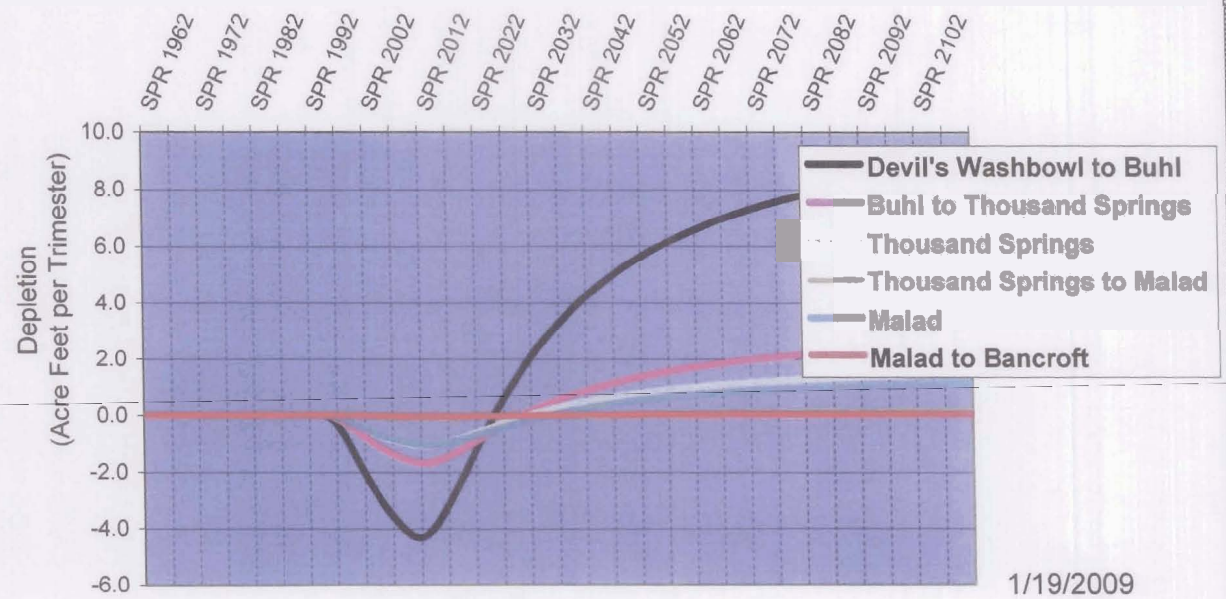


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Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage to Alliance
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage to Alliance
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner
(Total Effect With Transfer - Total Effect Without Transfer)

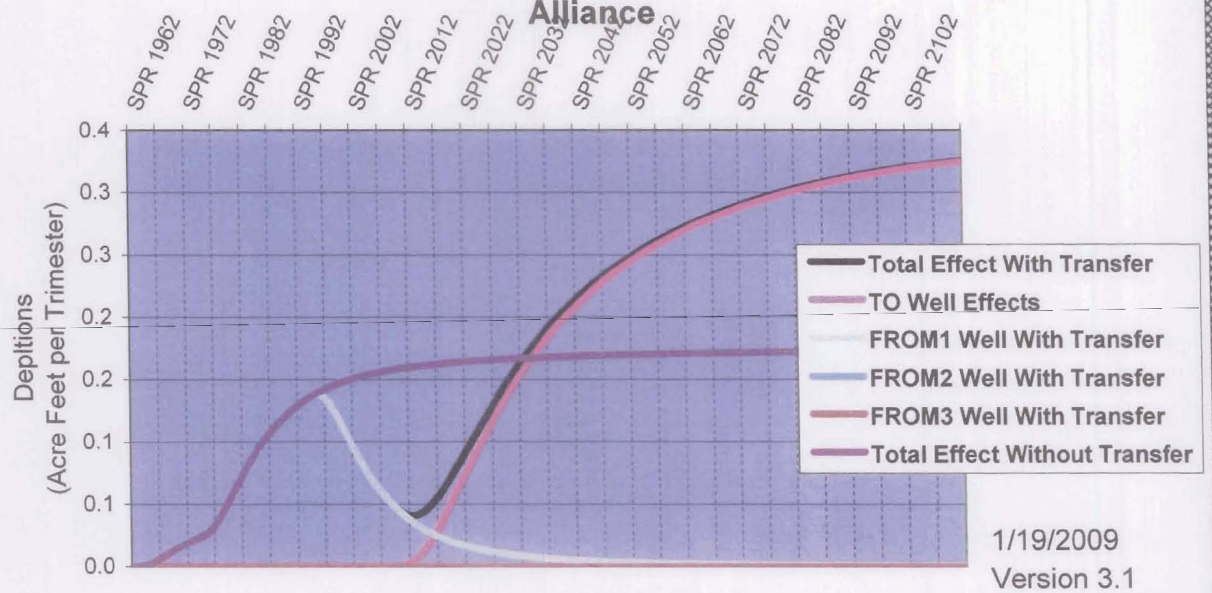


1/19/2009
Version 3.1

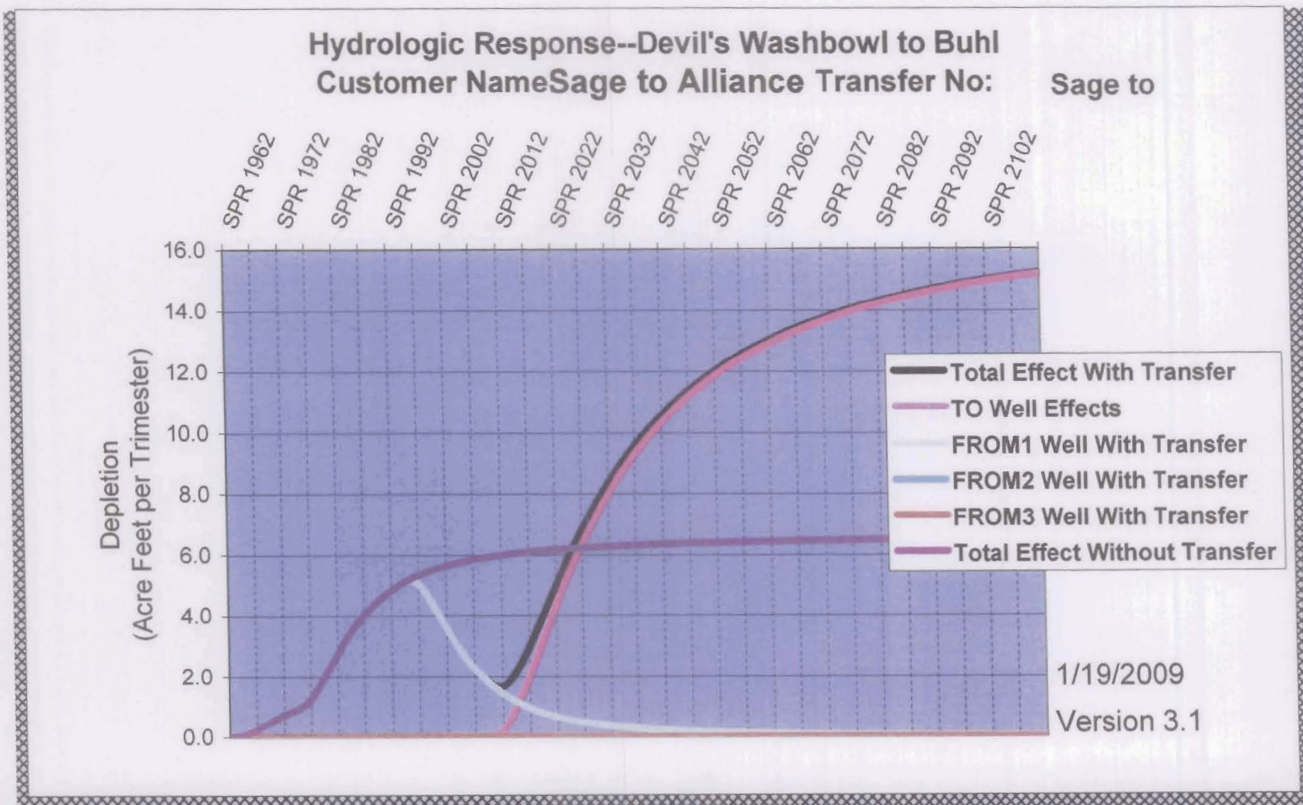
Customer Name: Sage to Alliance **Transfer No:** Sage to

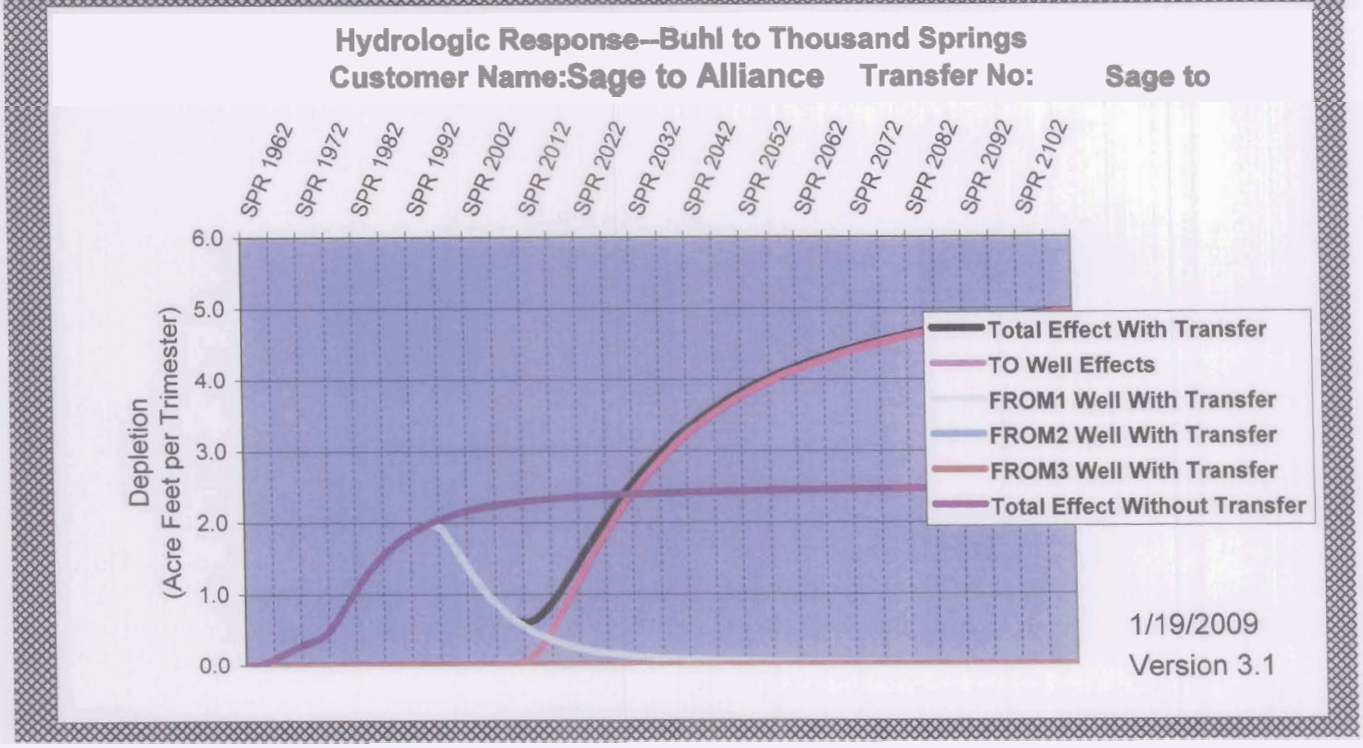
Hydrologic Response--Thousand Springs to Malad

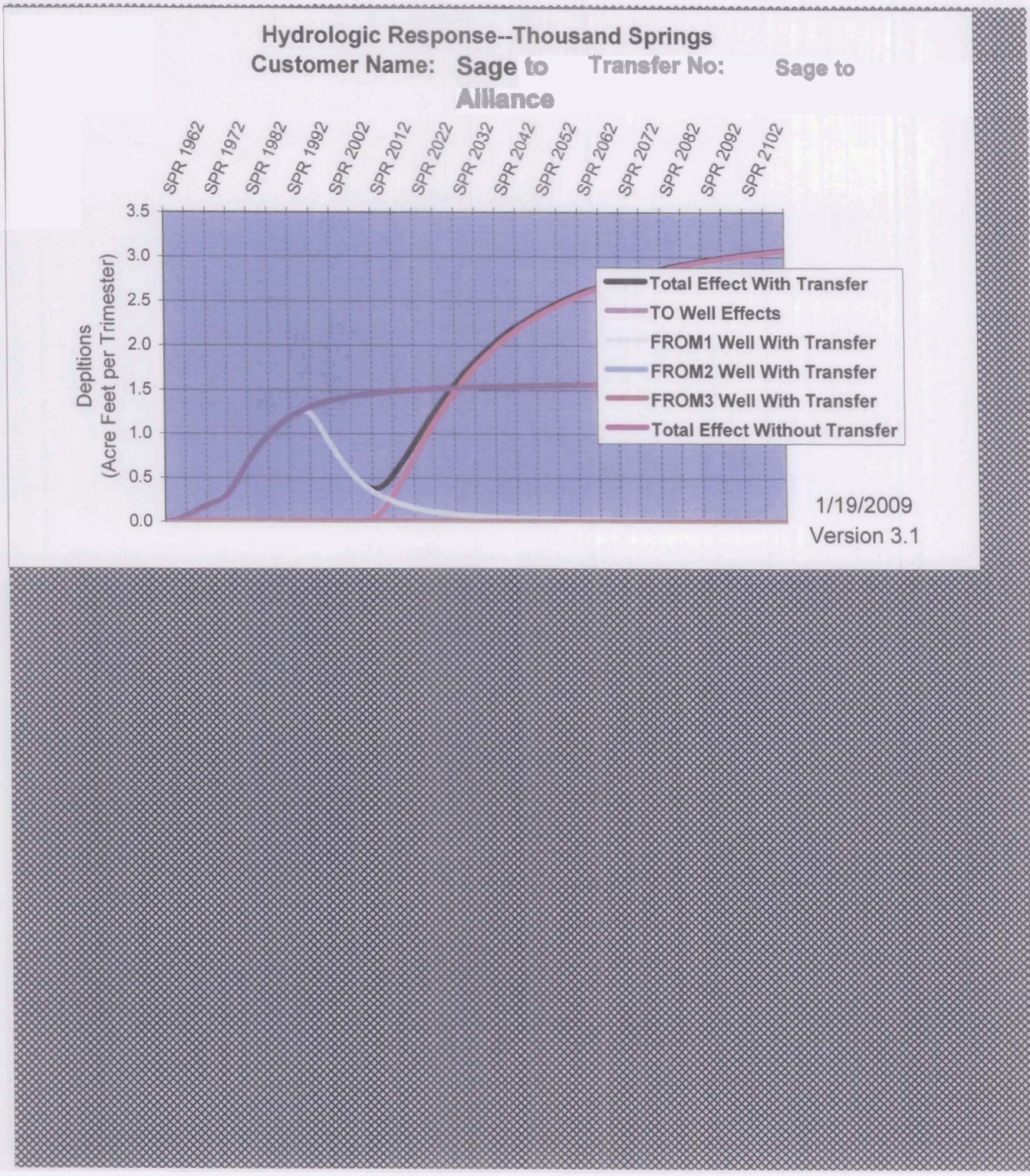
Customer Name: Sage to Alliance **Transfer No:** Sage to

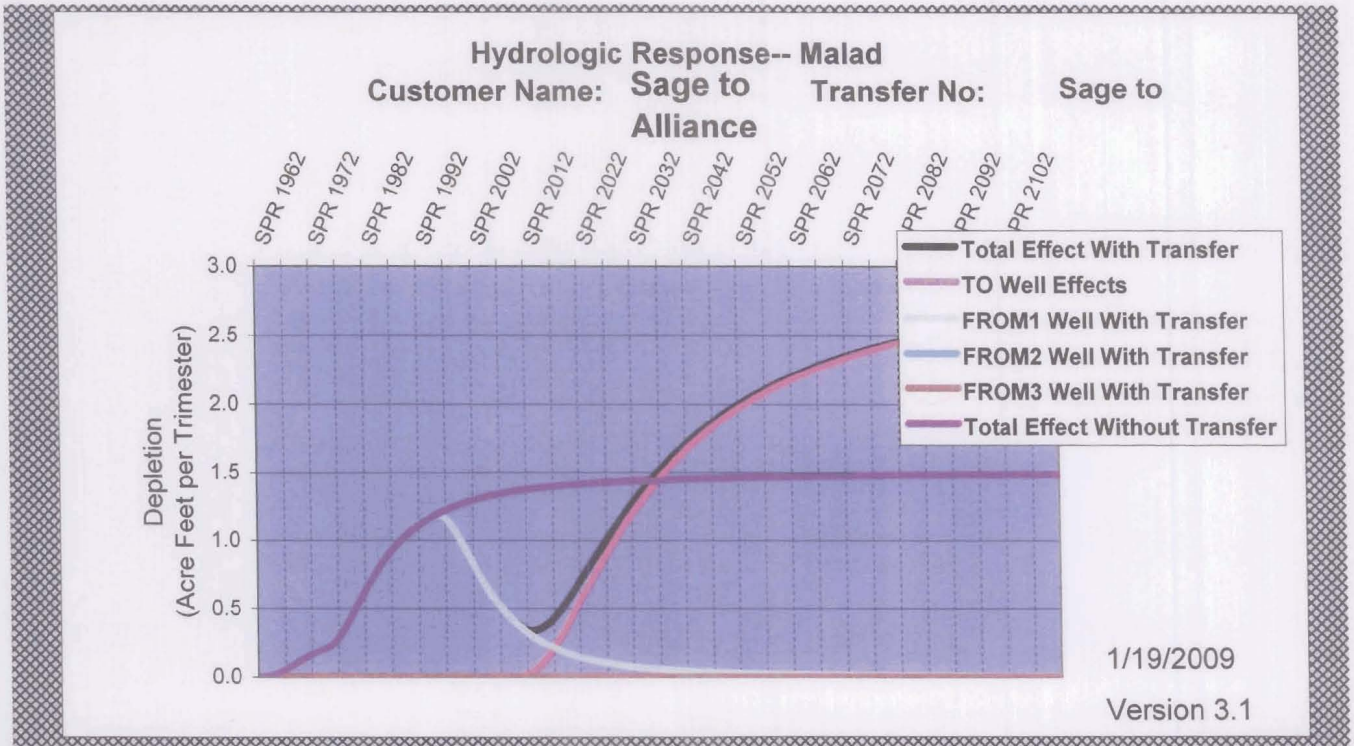


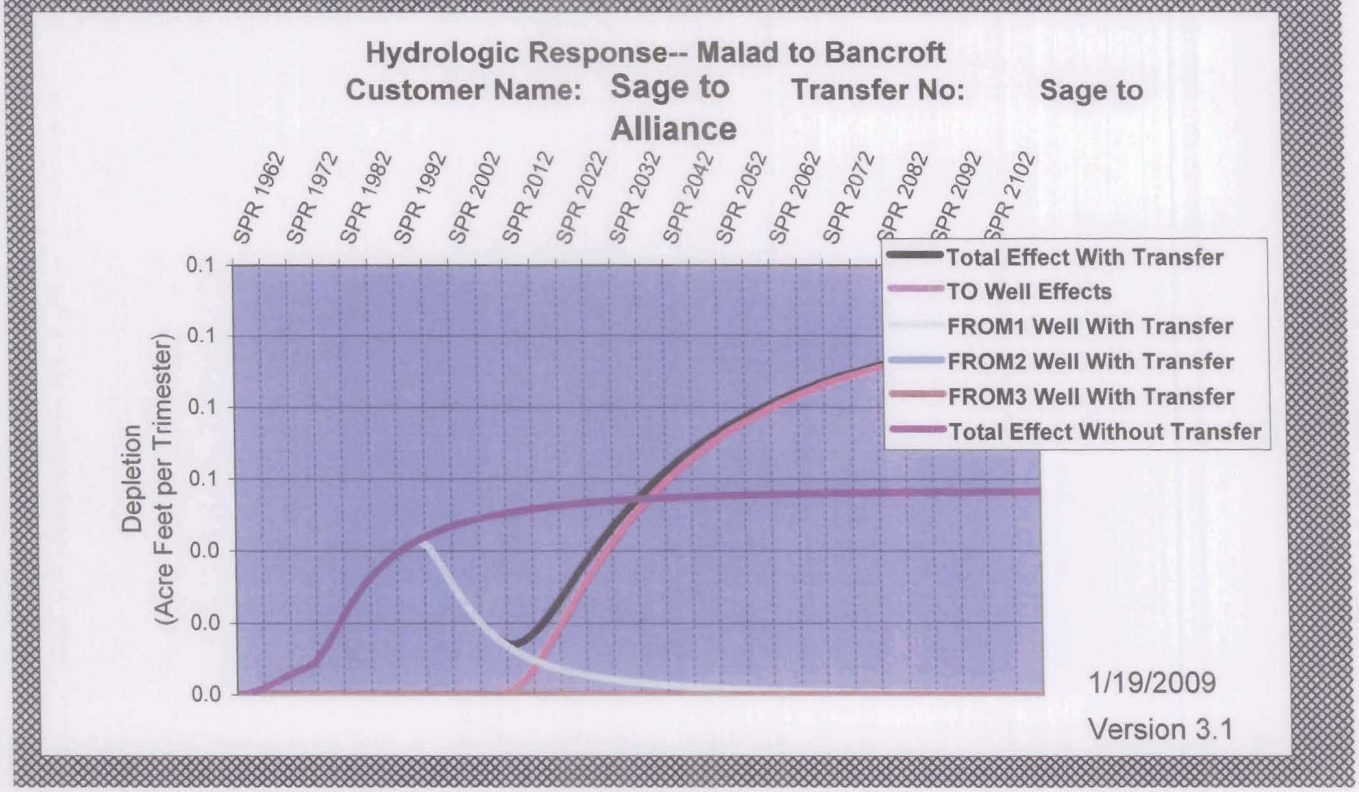
1/19/2009
Version 3.1


Hydrologic Response--Devil's Washbowl to Buhl
Customer NameSage to Alliance Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Buhl to Thousand Springs
Customer Name:Sage to Alliance Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Thousand Springs
Customer Name: Sage to Alliance
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

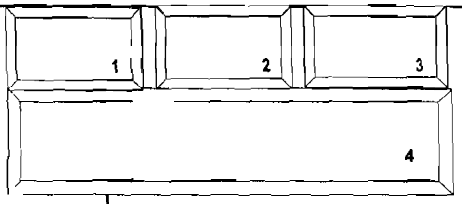

Hydrologic Response-- Malad
Customer Name: Sage to Alliance
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Malad to Bancroft
Customer Name: Sage to Alliance
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
0.1
0.1
0.1
0.1
0.0
0.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

UNIVERSITY OF IDAHO - IDAHO WATER RESOURCES RESEARCH INSTITUTE | **IDAHO DEPARTMENT OF WATER RESOURCES**

Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON

YEAR: 1962

SEASON: SPRING

TRANSFER NO: Sage to Bowler(1)

TRANSFER NAME: Sage to Bowler(1)

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	93	91		
COLUMN	89	89		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	6	6				
SUM 1962	0	6	6				
WIN 1962	0	6	6				
SPR 1963	0	6	6				
SUM 1963	0	6	6				
WIN 1963	0	6	6				
SPR 1964	0	6	6				
SUM 1964	0	6	6				
WIN 1964	0	6	6				
SPR 1965	0	6	6				
SUM 1965	0	6	6				
WIN 1965	0	6	6				
SPR 1966	0	6	6				
SUM 1966	0	6	6				
WIN 1966	0	6	6				
SPR 1967	0	6	6				
SUM 1967	0	6	6				
WIN 1967	0	6	6				
SPR 1968	0	6	6				
SUM 1968	0	6	6				
WIN 1968	0	6	6				
SPR 1969	0	6	6				
SUM 1969	0	6	6				
WIN 1969	0	6	6				
SPR 1970	0	6	6				
SUM 1970	0	6	6				
WIN 1970	0	6	6				
SPR 1971	0	6	6				
SUM 1971	0	6	6				
WIN 1971	0	6	6				
SPR 1972	0	6	6				
SUM 1972	0	6	6				
WIN 1972	0	6	6				
SPR 1973	0	6	6				
SUM 1973	0	6	6				
WIN 1973	0	6	6				
SPR 1974	0	21	21				
SUM 1974	0	21	21				
WIN 1974	0	21	21				
SPR 1975	0	21	21				
SUM 1975	0	21	21				
WIN 1975	0	21	21				
SPR 1976	0	21	21				
SUM 1976	0	21	21				
WIN 1976	0	21	21				
SPR 1977	0	21	21				
SUM 1977	0	21	21				
WIN 1977	0	21	21				
SPR 1978	0	21	21				
SUM 1978	0	21	21				
WIN 1978	0	21	21				
SPR 1979	0	21	21				
SUM 1979	0	21	21				
WIN 1979	0	21	21				
SPR 1980	0	21	21				
SUM 1980	0	21	21				
WIN 1980	0	21	21				
SPR 1981	0	21	21				
SUM 1981	0	21	21				
WIN 1981	0	21	21				
SPR 1982	0	21	21				
SUM 1982	0	21	21				
WIN 1982	0	21	21				
SPR 1983	0	21	21				
SUM 1983	0	21	21				
WIN 1983	0	21	21				
SPR 1984	0	21	21				
SUM 1984	0	21	21				
WIN 1984	0	21	21				
SPR 1985	0	21	21				
SUM 1985	0	21	21				
WIN 1985	0	21	21				
SPR 1986	0	21	21				
SUM 1986	0	21	21				
WIN 1986	0	21	21				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired time
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TO
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority dates

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfer

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer.

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include h
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	21	21
SUM 1987	0	21	21
WIN 1987	0	21	21
SPR 1988	0	21	21
SUM 1988	0	21	21
WIN 1988	0	21	21
SPR 1989	0	21	21
SUM 1989	0	21	21
WIN 1989	0	21	21
SPR 1990	0	21	21
SUM 1990	0	21	21
WIN 1990	0	21	21
SPR 1991	0	21	21
SUM 1991	0	21	21
WIN 1991	0	21	21
SPR 1992	0	21	21
SUM 1992	0	21	21
WIN 1992	0	21	21
SPR 1993	0	21	21
SUM 1993	0	21	21
WIN 1993	0	21	21
SPR 1994	0	0	21
SUM 1994	0	0	21
WIN 1994	0	0	21
SPR 1995	0	0	21
SUM 1995	0	0	21
WIN 1995	0	0	21
SPR 1996	0	0	21
SUM 1996	0	0	21
WIN 1996	0	0	21
SPR 1997	0	0	21
SUM 1997	0	0	21
WIN 1997	0	0	21
SPR 1998	0	0	21
SUM 1998	0	0	21
WIN 1998	0	0	21
SPR 1999	0	0	21
SUM 1999	0	0	21
WIN 1999	0	0	21
SPR 2000	0	0	21
SUM 2000	0	0	21
WIN 2000	0	0	21
SPR 2001	0	0	21
SUM 2001	0	0	21
WIN 2001	0	0	21
SPR 2002	0	0	21
SUM 2002	0	0	21
WIN 2002	0	0	21
SPR 2003	0	0	21
SUM 2003	0	0	21
WIN 2003	0	0	21
SPR 2004	0	0	21
SUM 2004	0	0	21
WIN 2004	0	0	21
SPR 2005	0	0	21
SUM 2005	0	0	21
WIN 2005	0	0	21
SPR 2006	0	0	21
SUM 2006	0	0	21
WIN 2006	0	0	21
SPR 2007	0	0	21
SUM 2007	0	0	21
WIN 2007	0	0	21
SPR 2008	21	0	21
SUM 2008	21	0	21
WIN 2008	21	0	21
SPR 2009	21	0	21
SUM 2009	21	0	21
WIN 2009	21	0	21
SPR 2010	21	0	21
SUM 2010	21	0	21
WIN 2010	21	0	21
SPR 2011	21	0	21
SUM 2011	21	0	21
WIN 2011	21	0	21
SPR 2012	21	0	21
SUM 2012	21	0	21
WIN 2012	21	0	21
SPR 2013	21	0	21
SUM 2013	21	0	21
WIN 2013	21	0	21
SPR 2014	21	0	21
SUM 2014	21	0	21
WIN 2014	21	0	21
SPR 2015	21	0	21
SUM 2015	21	0	21
WIN 2015	21	0	21
SPR 2016	21	0	21
SUM 2016	21	0	21
WIN 2016	21	0	21
SPR 2017	21	0	21
SUM 2017	21	0	21
WIN 2017	21	0	21
SPR 2018	21	0	21
SUM 2018	21	0	21
WIN 2018	21	0	21
SPR 2019	21	0	21
SUM 2019	21	0	21
WIN 2019	21	0	21
SPR 2020	21	0	21
SUM 2020	21	0	21
WIN 2020	21	0	21
SPR 2021	21	0	21
SUM 2021	21	0	21
WIN 2021	21	0	21
SPR 2022	21	0	21
SUM 2022	21	0	21
WIN 2022	21	0	21
SPR 2023	21	0	21
SUM 2023	21	0	21

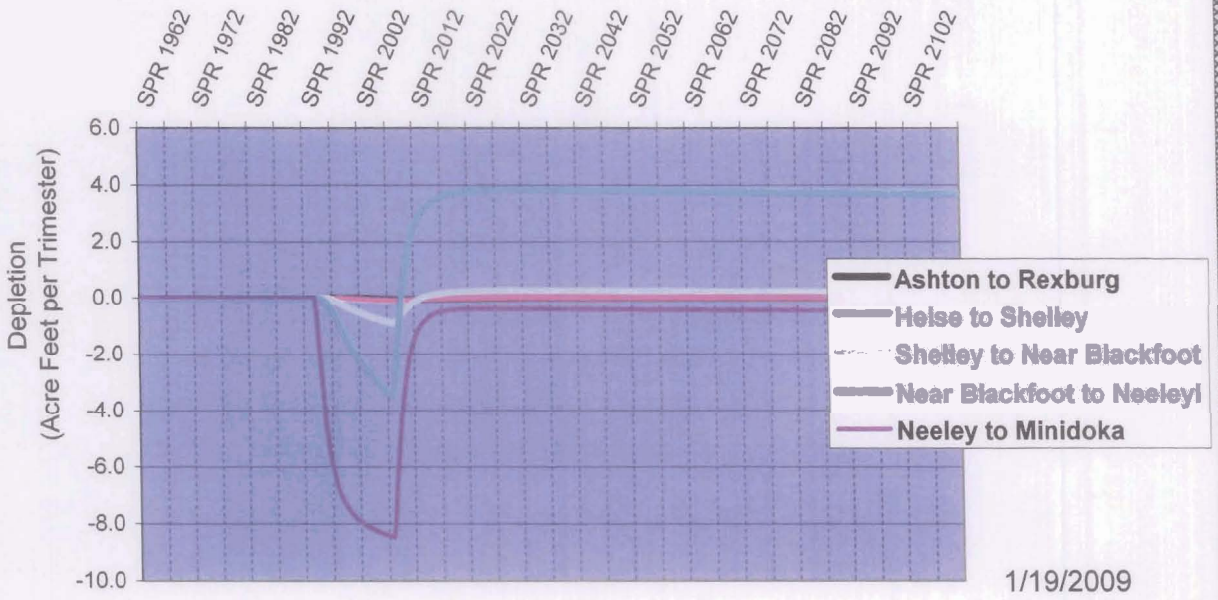
WIN 2023	21	0	21
SPR 2024	21	0	21
SUM 2024	21	0	21
WIN 2024	21	0	21
SPR 2025	21	0	21
SUM 2025	21	0	21
WIN 2025	21	0	21
SPR 2026	21	0	21
SUM 2026	21	0	21
WIN 2026	21	0	21
SPR 2027	21	0	21
SUM 2027	21	0	21
WIN 2027	21	0	21
SPR 2028	21	0	21
SUM 2028	21	0	21
WIN 2028	21	0	21
SPR 2029	21	0	21
SUM 2029	21	0	21
WIN 2029	21	0	21
SPR 2030	21	0	21
SUM 2030	21	0	21
WIN 2030	21	0	21
SPR 2031	21	0	21
SUM 2031	21	0	21
WIN 2031	21	0	21
SPR 2032	21	0	21
SUM 2032	21	0	21
WIN 2032	21	0	21
SPR 2033	21	0	21
SUM 2033	21	0	21
WIN 2033	21	0	21
SPR 2034	21	0	21
SUM 2034	21	0	21
WIN 2034	21	0	21
SPR 2035	21	0	21
SUM 2035	21	0	21
WIN 2035	21	0	21
SPR 2036	21	0	21
SUM 2036	21	0	21
WIN 2036	21	0	21
SPR 2037	21	0	21
SUM 2037	21	0	21
WIN 2037	21	0	21
SPR 2038	21	0	21
SUM 2038	21	0	21
WIN 2038	21	0	21
SPR 2039	21	0	21
SUM 2039	21	0	21
WIN 2039	21	0	21
SPR 2040	21	0	21
SUM 2040	21	0	21
WIN 2040	21	0	21
SPR 2041	21	0	21
SUM 2041	21	0	21
WIN 2041	21	0	21
SPR 2042	21	0	21
SUM 2042	21	0	21
WIN 2042	21	0	21
SPR 2043	21	0	21
SUM 2043	21	0	21
WIN 2043	21	0	21
SPR 2044	21	0	21
SUM 2044	21	0	21
WIN 2044	21	0	21
SPR 2045	21	0	21
SUM 2045	21	0	21
WIN 2045	21	0	21
SPR 2046	21	0	21
SUM 2046	21	0	21
WIN 2046	21	0	21
SPR 2047	21	0	21
SUM 2047	21	0	21
WIN 2047	21	0	21
SPR 2048	21	0	21
SUM 2048	21	0	21
WIN 2048	21	0	21
SPR 2049	21	0	21
SUM 2049	21	0	21
WIN 2049	21	0	21
SPR 2050	21	0	21
SUM 2050	21	0	21
WIN 2050	21	0	21
SPR 2051	21	0	21
SUM 2051	21	0	21
WIN 2051	21	0	21
SPR 2052	21	0	21
SUM 2052	21	0	21
WIN 2052	21	0	21
SPR 2053	21	0	21
SUM 2053	21	0	21
WIN 2053	21	0	21
SPR 2054	21	0	21
SUM 2054	21	0	21
WIN 2054	21	0	21
SPR 2055	21	0	21
SUM 2055	21	0	21
WIN 2055	21	0	21
SPR 2056	21	0	21
SUM 2056	21	0	21
WIN 2056	21	0	21
SPR 2057	21	0	21
SUM 2057	21	0	21
WIN 2057	21	0	21
SPR 2058	21	0	21
SUM 2058	21	0	21
WIN 2058	21	0	21
SPR 2059	21	0	21
SUM 2059	21	0	21
WIN 2059	21	0	21
SPR 2060	21	0	21

SUM 2060	21	0	21
WIN 2060	21	0	21
SPR 2061	21	0	21
SUM 2061	21	0	21
WIN 2061	21	0	21
SPR 2062	21	0	21
SUM 2062	21	0	21
WIN 2062	21	0	21
SPR 2063	21	0	21
SUM 2063	21	0	21
WIN 2063	21	0	21
SPR 2064	21	0	21
SUM 2064	21	0	21
WIN 2064	21	0	21
SPR 2065	21	0	21
SUM 2065	21	0	21
WIN 2065	21	0	21
SPR 2066	21	0	21
SUM 2066	21	0	21
WIN 2066	21	0	21
SPR 2067	21	0	21
SUM 2067	21	0	21
WIN 2067	21	0	21
SPR 2068	21	0	21
SUM 2068	21	0	21
WIN 2068	21	0	21
SPR 2069	21	0	21
SUM 2069	21	0	21
WIN 2069	21	0	21
SPR 2070	21	0	21
SUM 2070	21	0	21
WIN 2070	21	0	21
SPR 2071	21	0	21
SUM 2071	21	0	21
WIN 2071	21	0	21
SPR 2072	21	0	21
SUM 2072	21	0	21
WIN 2072	21	0	21
SPR 2073	21	0	21
SUM 2073	21	0	21
WIN 2073	21	0	21
SPR 2074	21	0	21
SUM 2074	21	0	21
WIN 2074	21	0	21
SPR 2075	21	0	21
SUM 2075	21	0	21
WIN 2075	21	0	21
SPR 2076	21	0	21
SUM 2076	21	0	21
WIN 2076	21	0	21
SPR 2077	21	0	21
SUM 2077	21	0	21
WIN 2077	21	0	21
SPR 2078	21	0	21
SUM 2078	21	0	21
WIN 2078	21	0	21
SPR 2079	21	0	21
SUM 2079	21	0	21
WIN 2079	21	0	21
SPR 2080	21	0	21
SUM 2080	21	0	21
WIN 2080	21	0	21
SPR 2081	21	0	21
SUM 2081	21	0	21
WIN 2081	21	0	21
SPR 2082	21	0	21
SUM 2082	21	0	21
WIN 2082	21	0	21
SPR 2083	21	0	21
SUM 2083	21	0	21
WIN 2083	21	0	21
SPR 2084	21	0	21
SUM 2084	21	0	21
WIN 2084	21	0	21
SPR 2085	21	0	21
SUM 2085	21	0	21
WIN 2085	21	0	21
SPR 2086	21	0	21
SUM 2086	21	0	21
WIN 2086	21	0	21
SPR 2087	21	0	21
SUM 2087	21	0	21
WIN 2087	21	0	21
SPR 2088	21	0	21
SUM 2088	21	0	21
WIN 2088	21	0	21
SPR 2089	21	0	21
SUM 2089	21	0	21
WIN 2089	21	0	21
SPR 2090	21	0	21
SUM 2090	21	0	21
WIN 2090	21	0	21
SPR 2091	21	0	21
SUM 2091	21	0	21
WIN 2091	21	0	21
SPR 2092	21	0	21
SUM 2092	21	0	21
WIN 2092	21	0	21
SPR 2093	21	0	21
SUM 2093	21	0	21
WIN 2093	21	0	21
SPR 2094	21	0	21
SUM 2094	21	0	21
WIN 2094	21	0	21
SPR 2095	21	0	21
SUM 2095	21	0	21
WIN 2095	21	0	21
SPR 2096	21	0	21
SUM 2096	21	0	21
WIN 2096	21	0	21

SPR 2097	21	0	21				
SUM 2097	21	0	21				
WIN 2097	21	0	21				
SPR 2098	21	0	21				
SUM 2098	21	0	21				
WIN 2098	21	0	21				
SPR 2099	21	0	21				
SUM 2099	21	0	21				
WIN 2099	21	0	21				
SPR 2100	21	0	21				
SUM 2100	21	0	21				
WIN 2100	21	0	21				
SPR 2101	21	0	21				
SUM 2101	21	0	21				
WIN 2101	21	0	21				
SPR 2102	21	0	21				
SUM 2102	21	0	21				
WIN 2102	21	0	21				
SPR 2103	21	0	21				
SUM 2103	21	0	21				
WIN 2103	21	0	21				
SPR 2104	21	0	21				
SUM 2104	21	0	21				
WIN 2104	21	0	21				
SPR 2105	21	0	21				
SUM 2105	21	0	21				
WIN 2105	21	0	21				
SPR 2106	21	0	21				
SUM 2106	21	0	21				
WIN 2106	21	0	21				
SPR 2107	21	0	21				
SUM 2107	21	0	21				
WIN 2107	21	0	21				
SPR 2108	21	0	21				
SUM 2108	21	0	21				
WIN 2108	21	0	21				
SPR 2109	21	0	21				
SUM 2109	21	0	21				
WIN 2109	21	0	21				
SPR 2110	21	0	21				
SUM 2110	21	0	21				
WIN 2110	21	0	21				
SPR 2111	21	0	21				
SUM 2111	21	0	21				
WIN 2111	21	0	21				

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

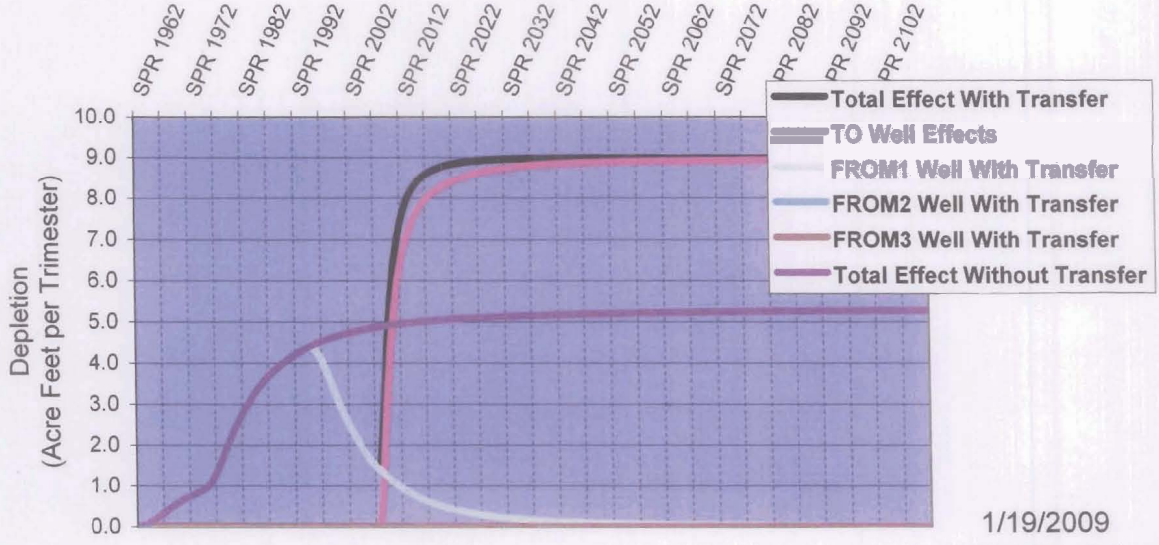


1/19/2009
Version 3.1

Customer Name: Sage to Bowler(1) **Transfer No:** Sage to

Hydrologic Response-- Near Blackfoot to Neeley

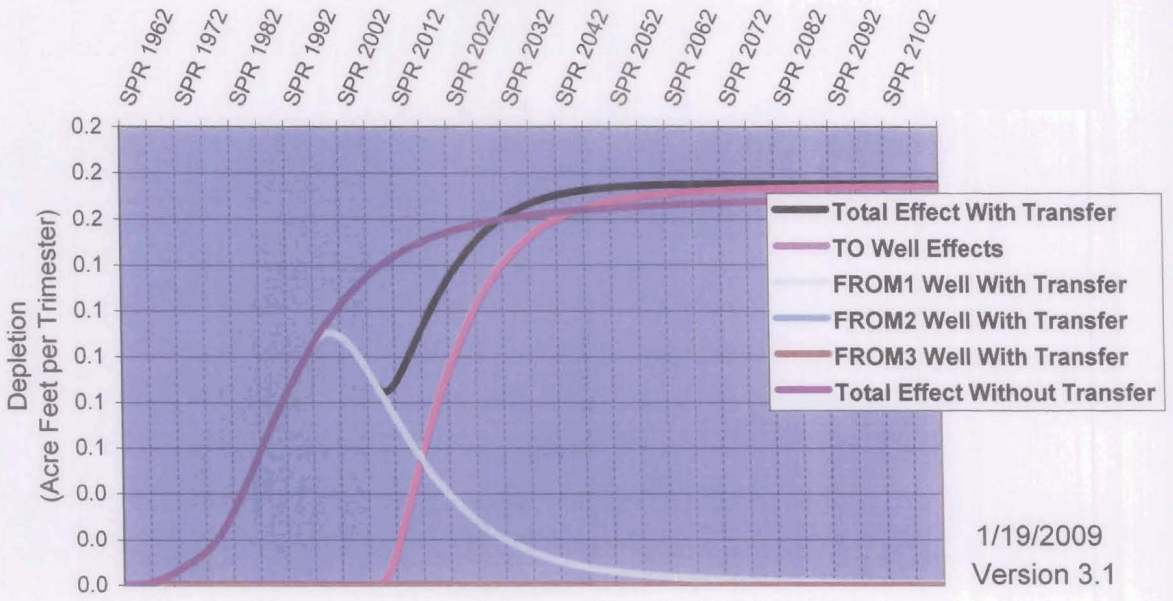
Customer Name: Sage to Bowler(1) **Transfer No:** Sage to



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

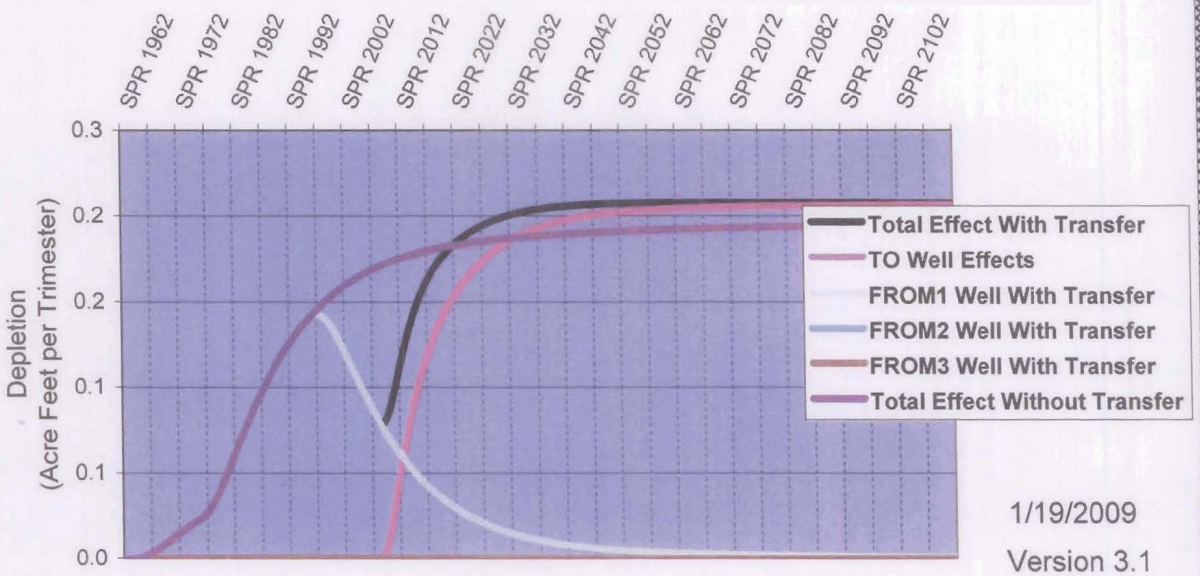
Customer Name:Sage to Bowler(1) **Transfer No: Sage to**



1/19/2009
Version 3.1

Hydrologic Response--Heise to Shelley

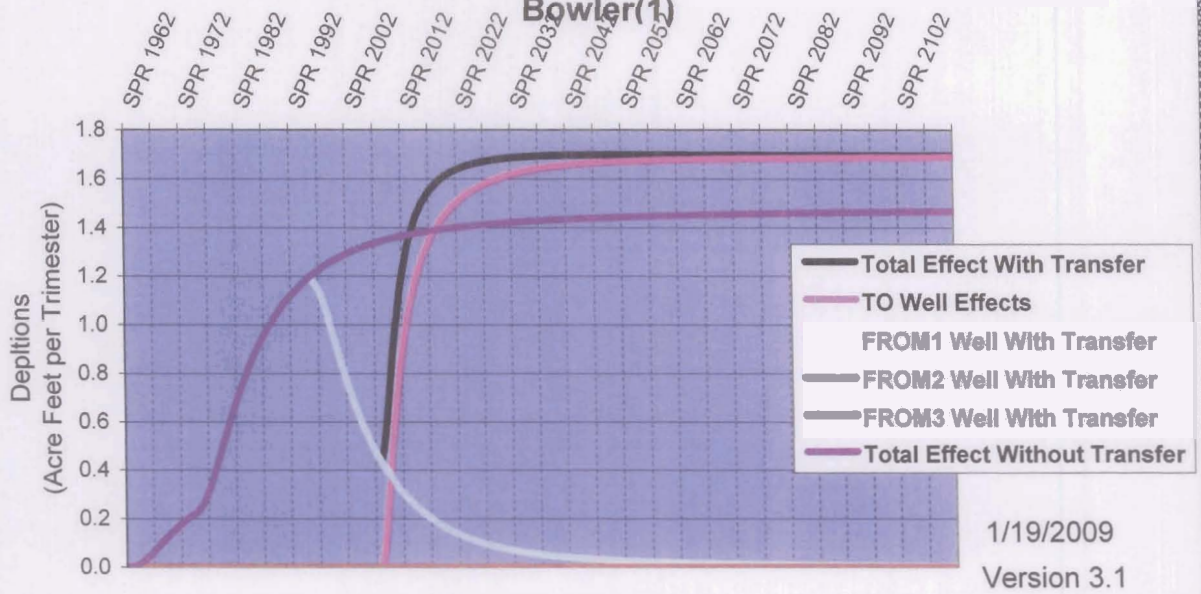
Customer Name:Sage to Bowler(1) Transfer No: Sage to



1/19/2009
Version 3.1

Hydrologic Response--Shelley to Near Blackfoot

Customer Name: Sage to Transfer No: Sage to Bowler(1)

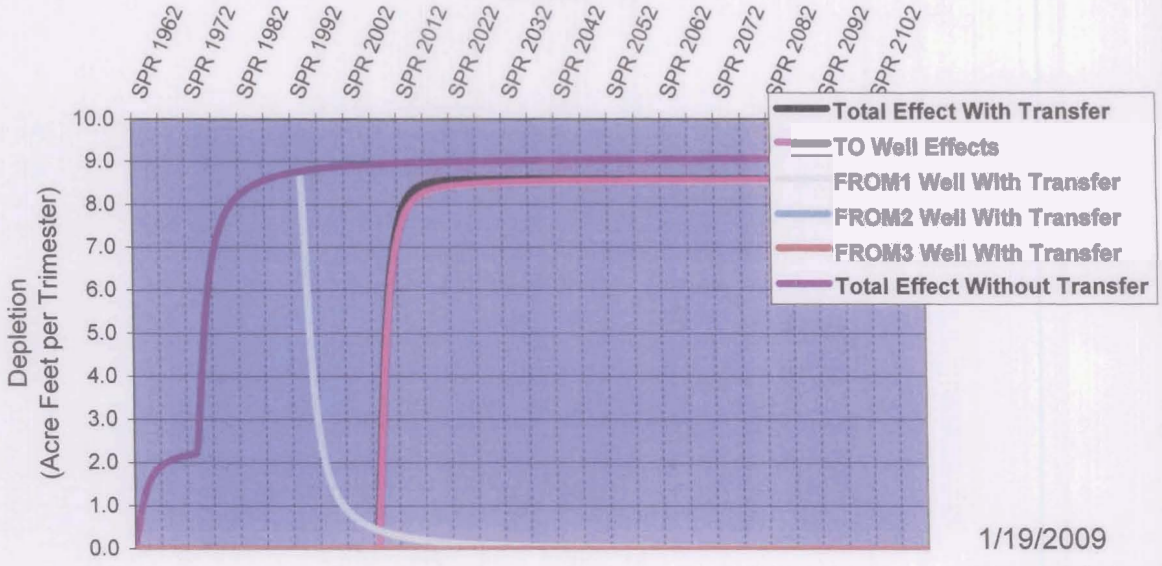


1/19/2009

Version 3.1

Hydrologic Response-- Neeley to Minidoka

Customer Name: to Transfer No: Sage to Bowler(1)

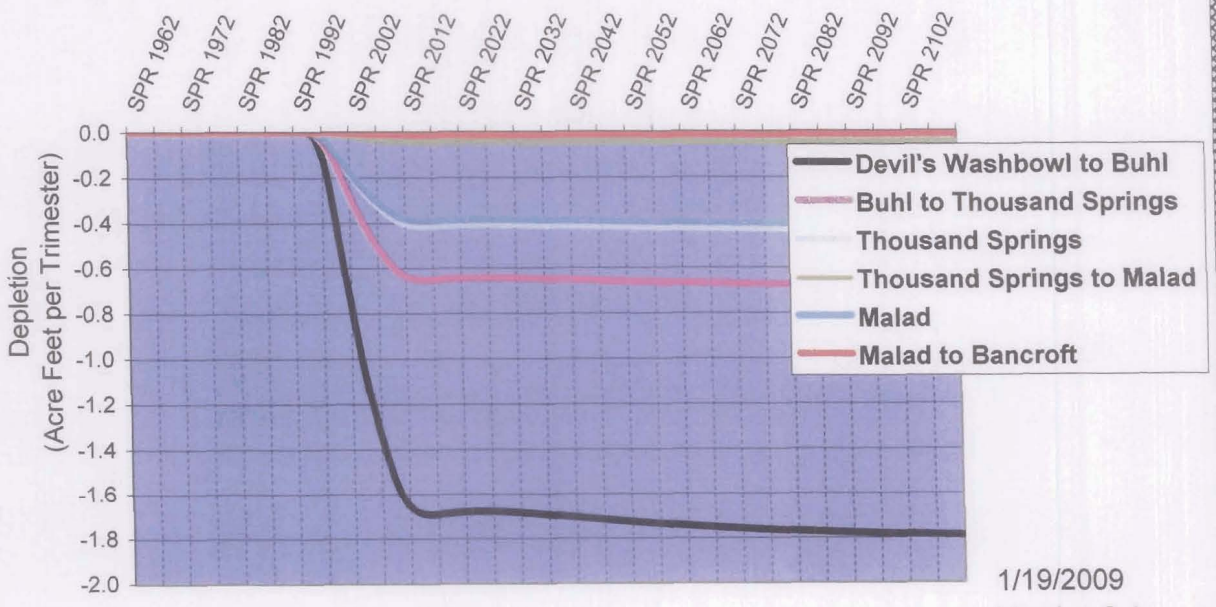


1/19/2009

Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

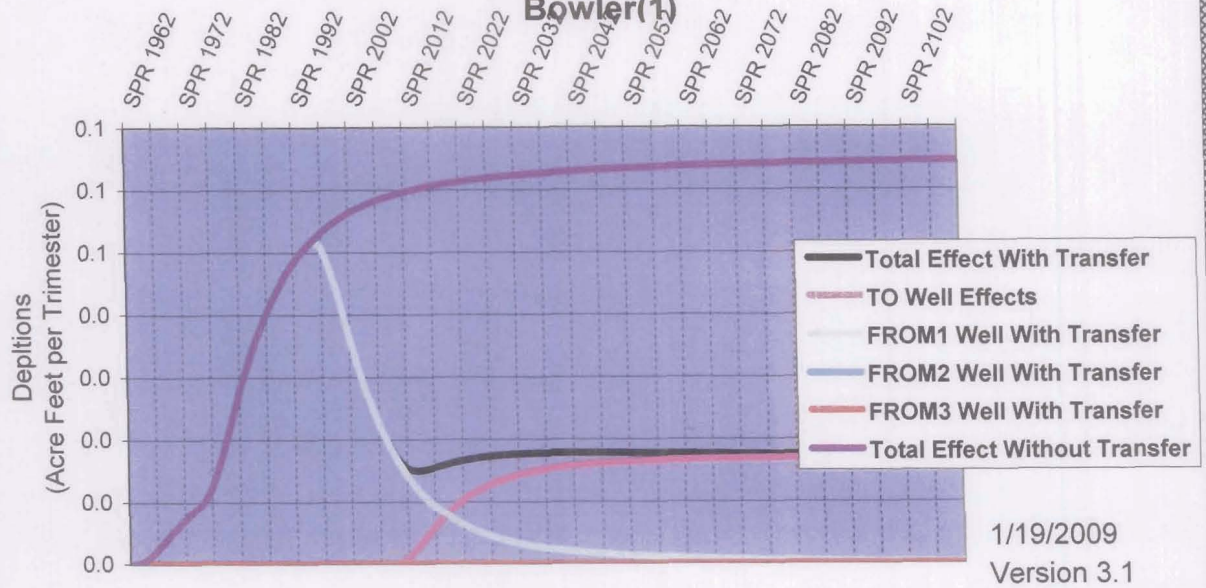


1/19/2009
Version 3.1

Customer Name: Sage to Bowler(1) **Transfer No: Sage to**

Hydrologic Response--Thousand Springs to Malad

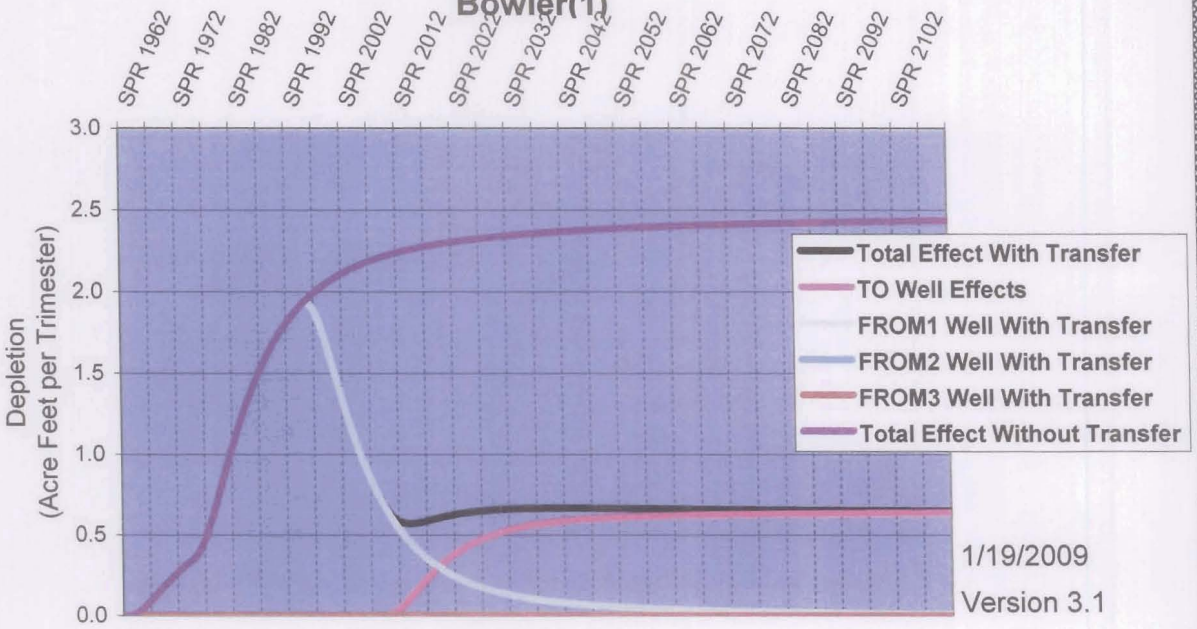
Customer Name: Sage to Bowler(1) Transfer No: Sage to



1/19/2009
Version 3.1

Hydrologic Response--Devil's Washbowl to Buhl

Customer NameSage to Bowler(1) Transfer No: Sage to

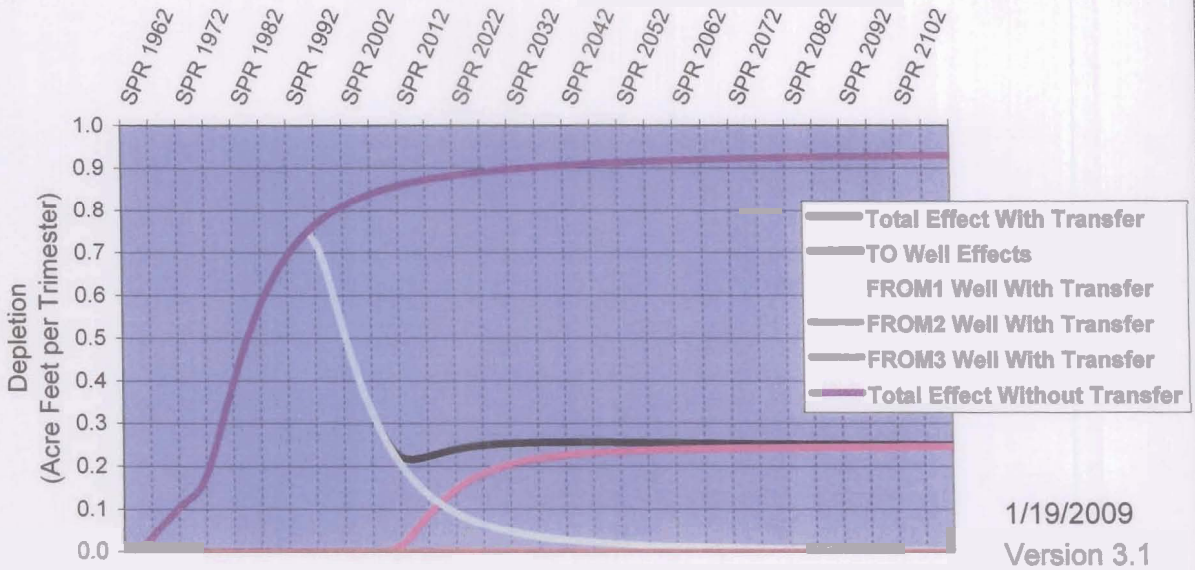


1/19/2009

Version 3.1

Hydrologic Response--Buhl to Thousand Springs

Customer Name:Sage to Bowler(1) Transfer No: Sage to

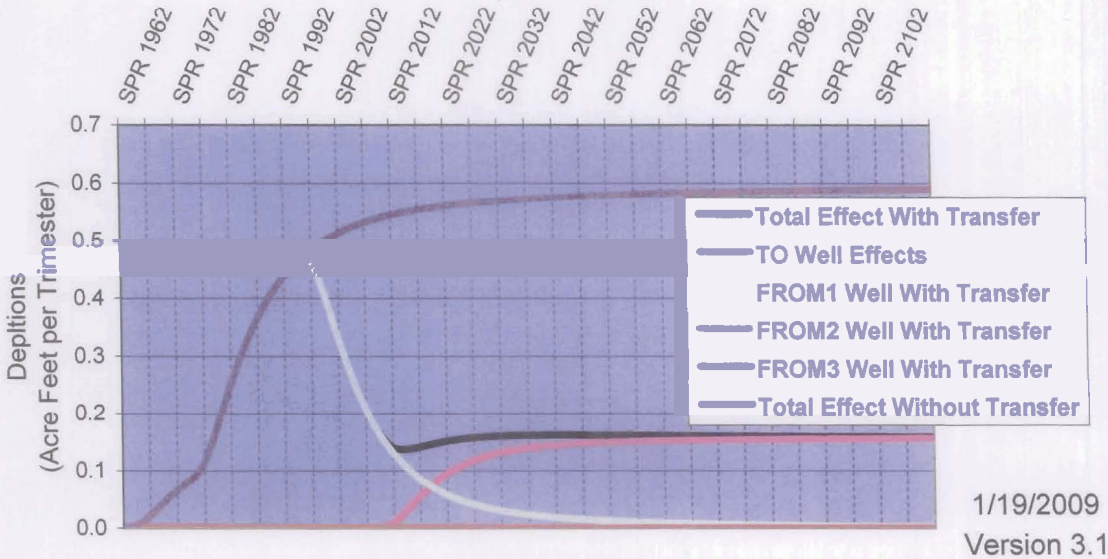


1/19/2009

Version 3.1

Hydrologic Reeponse--Thousand Springs

Customer Name: Sage to Bowler(1) **Transfer No:** Sage to

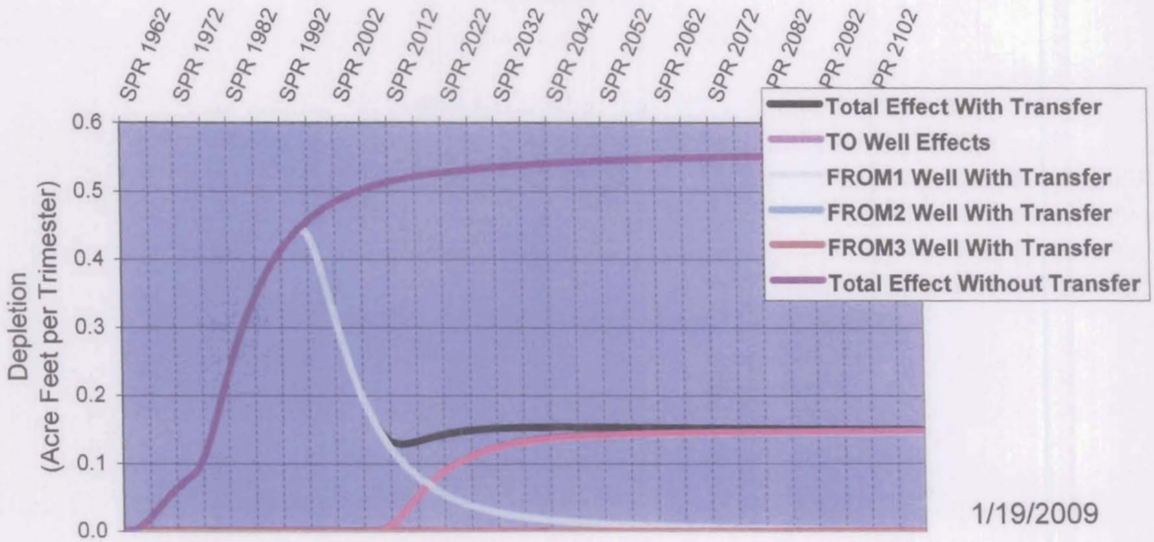


1/19/2009

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Hydrologic Response-- Malad

Customer Name: Sage to Bowler(1) **Transfer No:** Sage to

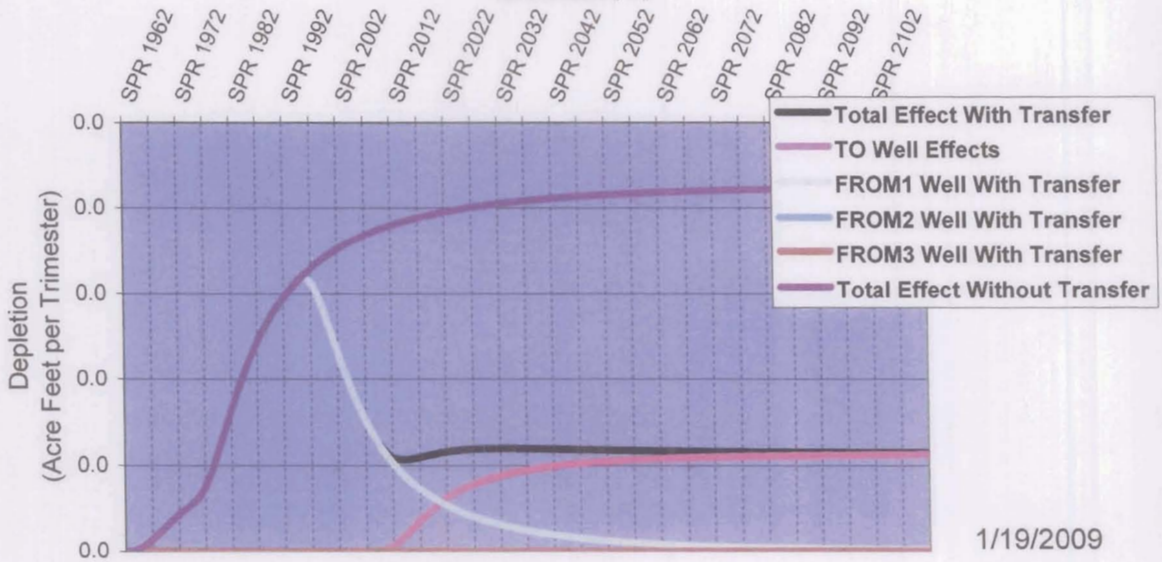


1/19/2009

Version 3.1

Hydrologic Response-- Malad to Bancroft

Customer Name: Sage to Bowler(1) **Transfer No:** Sage to



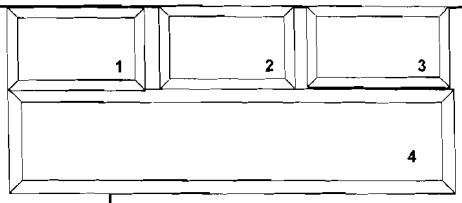
1/19/2009

Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

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Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON		TRANSFER NO: Sage to bowler (2)
YEAR	1962	TRANSFER NAME:
SEASON	SPRING	Sage to Bowler (2)

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	93	91		
COLUMN	88	69		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	3	3				
SUM 1962	0	3	3				
WIN 1962	0	3	3				
SPR 1963	0	3	3				
SUM 1963	0	3	3				
WIN 1963	0	3	3				
SPR 1964	0	3	3				
SUM 1964	0	3	3				
WIN 1964	0	3	3				
SPR 1965	0	3	3				
SUM 1965	0	3	3				
WIN 1965	0	3	3				
SPR 1966	0	3	3				
SUM 1966	0	3	3				
WIN 1966	0	3	3				
SPR 1967	0	3	3				
SUM 1967	0	3	3				
WIN 1967	0	3	3				
SPR 1968	0	3	3				
SUM 1968	0	3	3				
WIN 1968	0	3	3				
SPR 1969	0	3	3				
SUM 1969	0	3	3				
WIN 1969	0	3	3				
SPR 1970	0	3	3				
SUM 1970	0	3	3				
WIN 1970	0	3	3				
SPR 1971	0	3	3				
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WIN 1971	0	3	3				
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SPR 1973	0	3	3				
SUM 1973	0	3	3				
WIN 1973	0	3	3				
SPR 1974	0	3	3				
SUM 1974	0	3	3				
WIN 1974	0	3	3				
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WIN 1975	0	3	3				
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WIN 1976	0	3	3				
SPR 1977	0	3	3				
SUM 1977	0	3	3				
WIN 1977	0	3	3				
SPR 1978	0	18	18				
SUM 1978	0	18	18				
WIN 1978	0	18	18				
SPR 1979	0	18	18				
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SPR 1984	0	18	18				
SUM 1984	0	18	18				
WIN 1984	0	18	18				
SPR 1985	0	18	18				
SUM 1985	0	18	18				
WIN 1985	0	18	18				
SPR 1986	0	18	18				
SUM 1986	0	18	18				
WIN 1986	0	18	18				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired timel
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TC
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority date

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of t
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for ea
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	18	18
SUM 1987	0	18	18
WIN 1987	0	18	18
SPR 1988	0	18	18
SUM 1988	0	18	18
WIN 1988	0	18	18
SPR 1989	0	18	18
SUM 1989	0	18	18
WIN 1989	0	18	18
SPR 1990	0	18	18
SUM 1990	0	18	18
WIN 1990	0	18	18
SPR 1991	0	18	18
SUM 1991	0	18	18
WIN 1991	0	18	18
SPR 1992	0	18	18
SUM 1992	0	18	18
WIN 1992	0	18	18
SPR 1993	0	18	18
SUM 1993	0	18	18
WIN 1993	0	18	18
SPR 1994	0	0	18
SUM 1994	0	0	18
WIN 1994	0	0	18
SPR 1995	0	0	18
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WIN 1995	0	0	18
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WIN 1997	0	0	18
SPR 1998	0	0	18
SUM 1998	0	0	18
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SPR 2001	0	0	18
SUM 2001	0	0	18
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SPR 2002	0	0	18
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WIN 2002	0	0	18
SPR 2003	0	0	18
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WIN 2003	0	0	18
SPR 2004	0	0	18
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WIN 2004	0	0	18
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WIN 2005	0	0	18
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WIN 2006	0	0	18
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SUM 2007	0	0	18
WIN 2007	0	0	18
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SUM 2008	0	0	18
WIN 2008	18	0	18
SPR 2009	18	0	18
SUM 2009	18	0	18
WIN 2009	18	0	18
SPR 2010	18	0	18
SUM 2010	18	0	18
WIN 2010	18	0	18
SPR 2011	18	0	18
SUM 2011	18	0	18
WIN 2011	18	0	18
SPR 2012	18	0	18
SUM 2012	18	0	18
WIN 2012	18	0	18
SPR 2013	18	0	18
SUM 2013	18	0	18
WIN 2013	18	0	18
SPR 2014	18	0	18
SUM 2014	18	0	18
WIN 2014	18	0	18
SPR 2015	18	0	18
SUM 2015	18	0	18
WIN 2015	18	0	18
SPR 2016	18	0	18
SUM 2016	18	0	18
WIN 2016	18	0	18
SPR 2017	18	0	18
SUM 2017	18	0	18
WIN 2017	18	0	18
SPR 2018	18	0	18
SUM 2018	18	0	18
WIN 2018	18	0	18
SPR 2019	18	0	18
SUM 2019	18	0	18
WIN 2019	18	0	18
SPR 2020	18	0	18
SUM 2020	18	0	18
WIN 2020	18	0	18
SPR 2021	18	0	18
SUM 2021	18	0	18
WIN 2021	18	0	18
SPR 2022	18	0	18
SUM 2022	18	0	18
WIN 2022	18	0	18
SPR 2023	18	0	18
SUM 2023	18	0	18

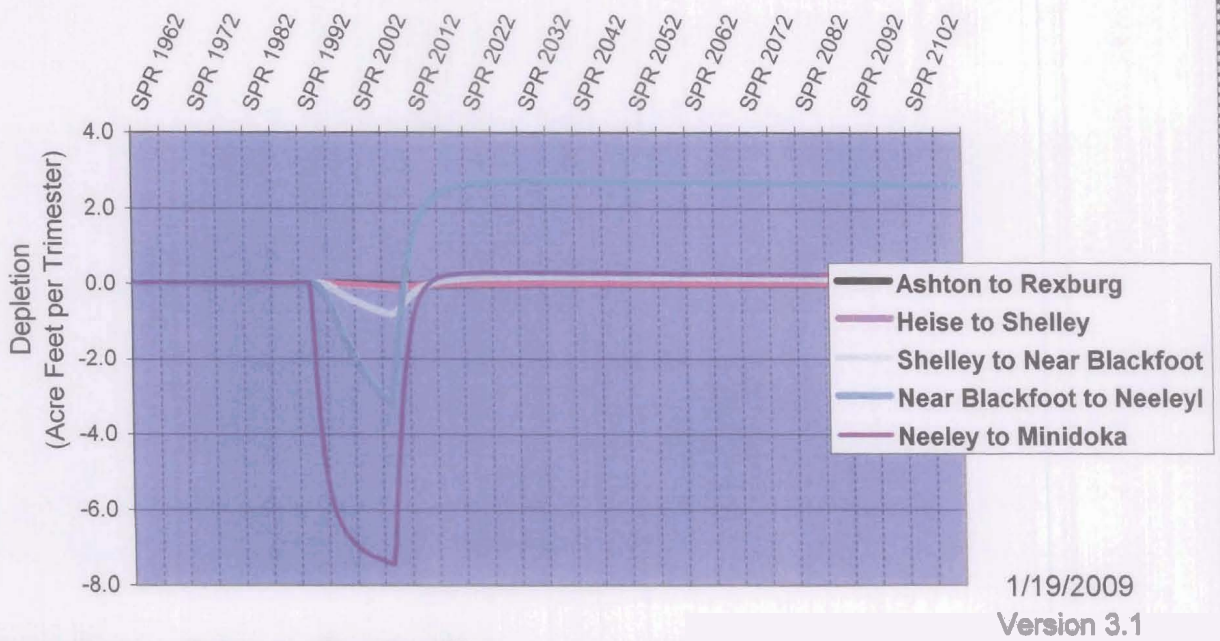
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WIN 2026	18	0	18				
SPR 2027	18	0	18				
SUM 2027	18	0	18				
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WIN 2028	18	0	18				
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SUM 2029	18	0	18				
WIN 2029	18	0	18				
SPR 2030	18	0	18				
SUM 2030	18	0	18				
WIN 2030	18	0	18				
SPR 2031	18	0	18				
SUM 2031	18	0	18				
WIN 2031	18	0	18				
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SUM 2034	18	0	18				
WIN 2034	18	0	18				
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SUM 2035	18	0	18				
WIN 2035	18	0	18				
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SUM 2036	18	0	18				
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SPR 2110	18	0	18				
SUM 2110	18	0	18				
WIN 2110	18	0	18				
SPR 2111	18	0	18				
SUM 2111	18	0	18				
WIN 2111	18	0	18				

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

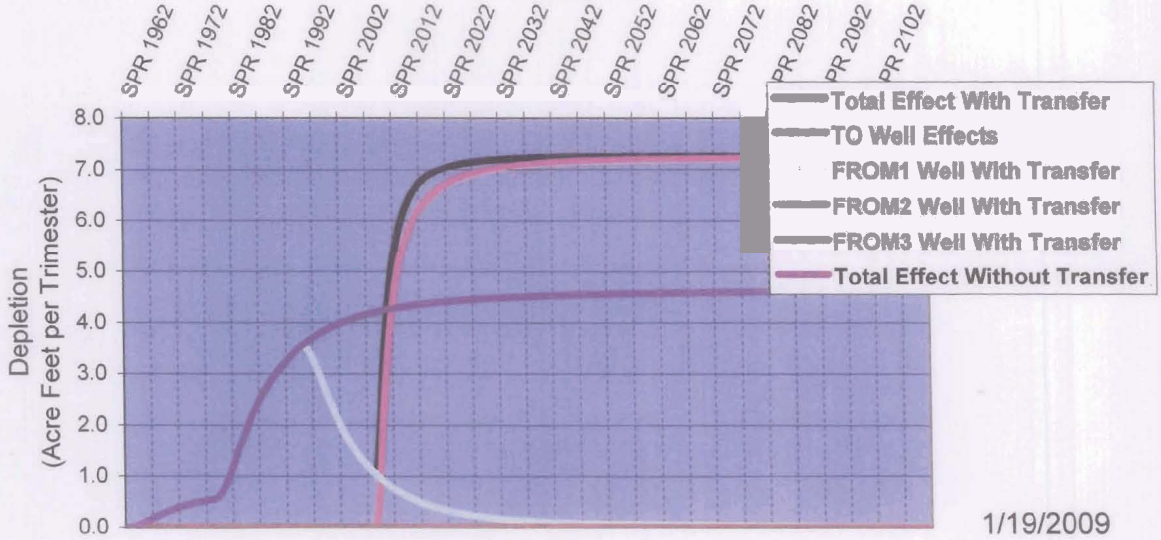


1/19/2009
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Customer Name: Sage to Bowler (2) **Transfer No:** Sage to

Hydrologic Response-- Near Blackfoot to Neeley

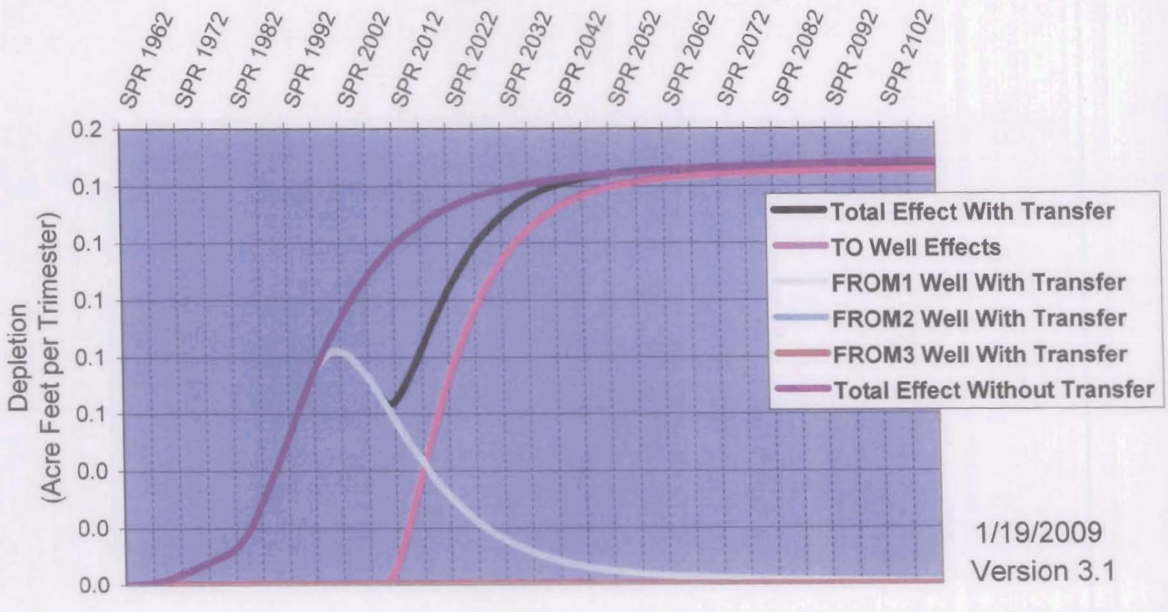
Customer Name: Sage to Bowler (2) **Transfer No:** Sage to



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

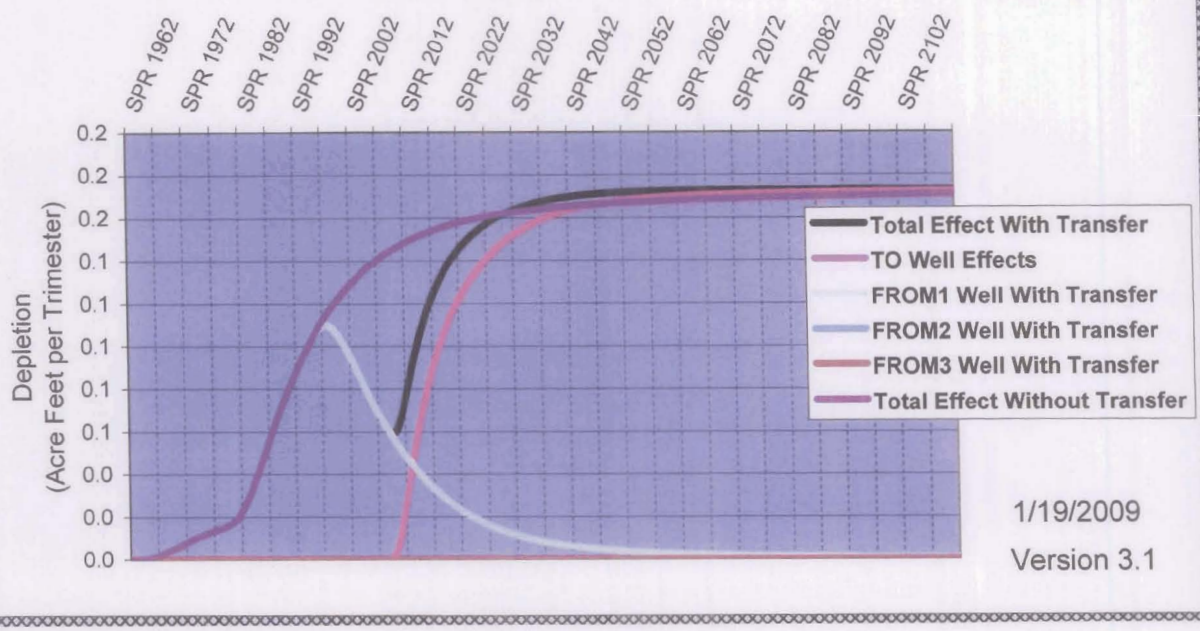
Customer Name:Sage to Bowler (2) Transfer No: Sage to



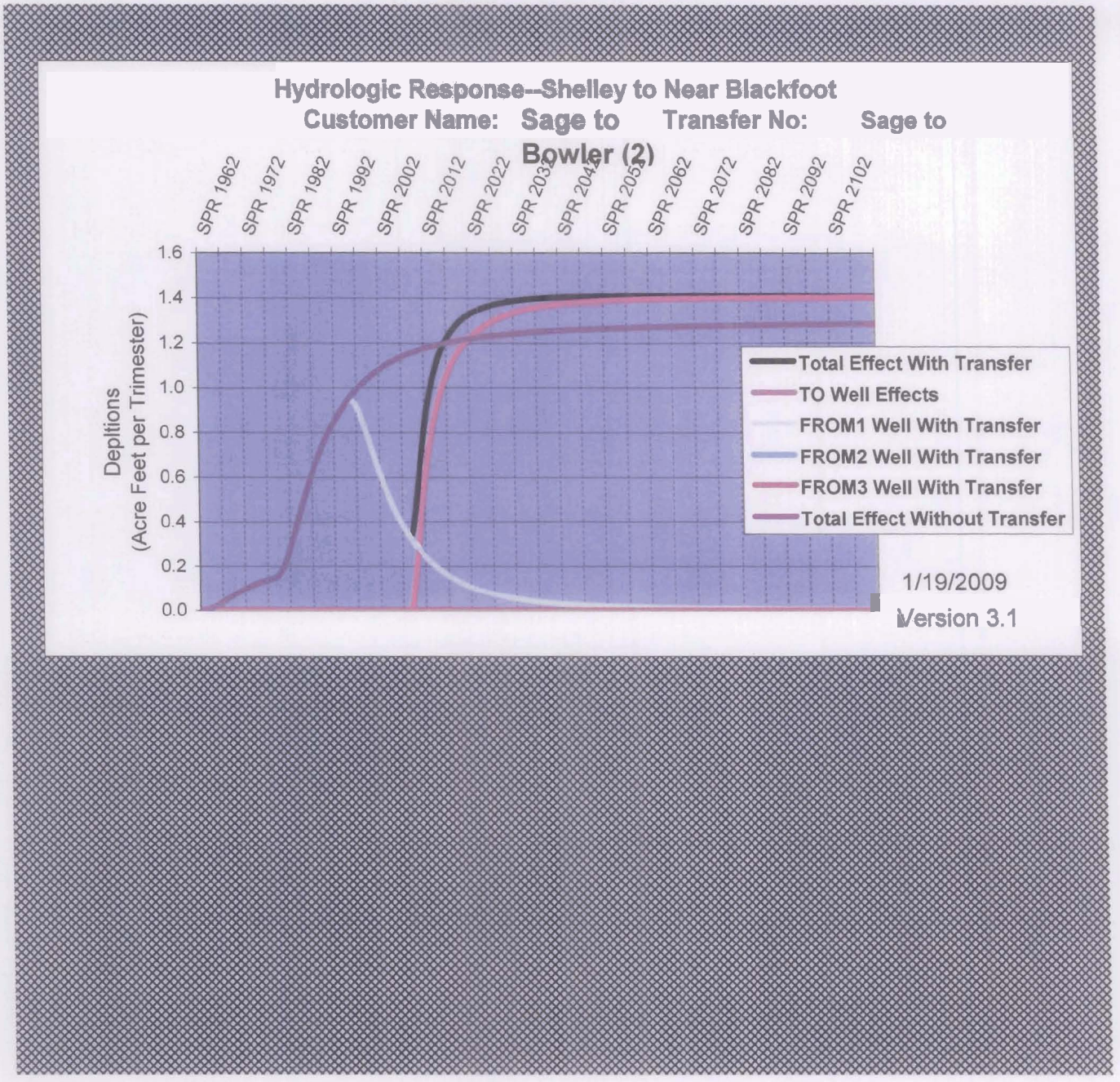
1/19/2009
Version 3.1

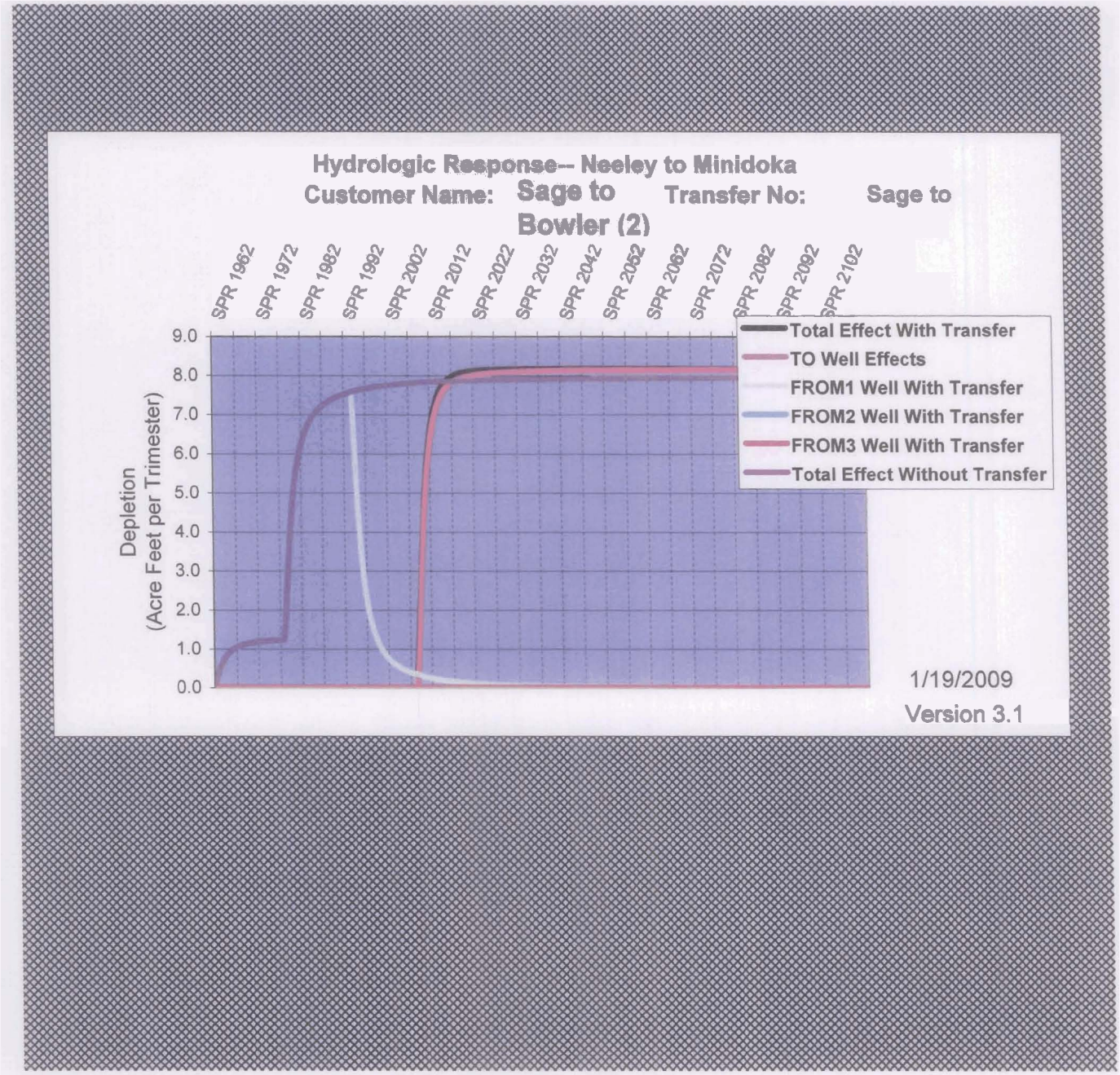
Hydrologic Response--Heise to Shelley

Customer Name:Sage to Bowler (2)Transfer No: Sage to



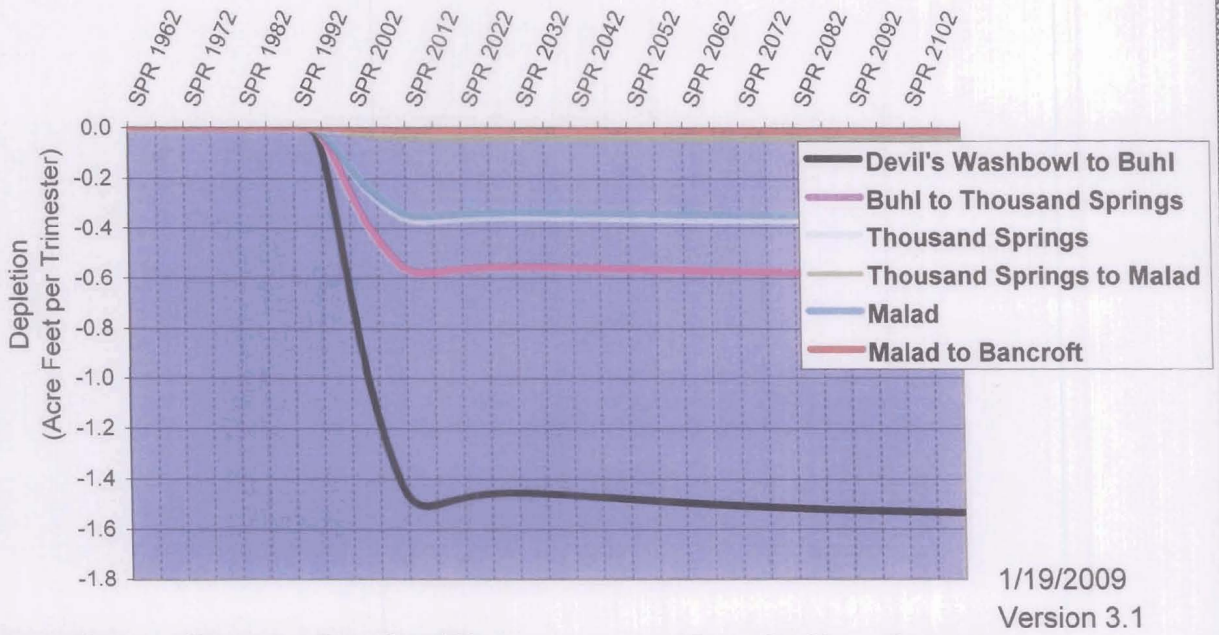
1/19/2009
Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage to Bowler (2)
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depltions (Acre Feet per Trimester)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage to Bowler (2)
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
9.0
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

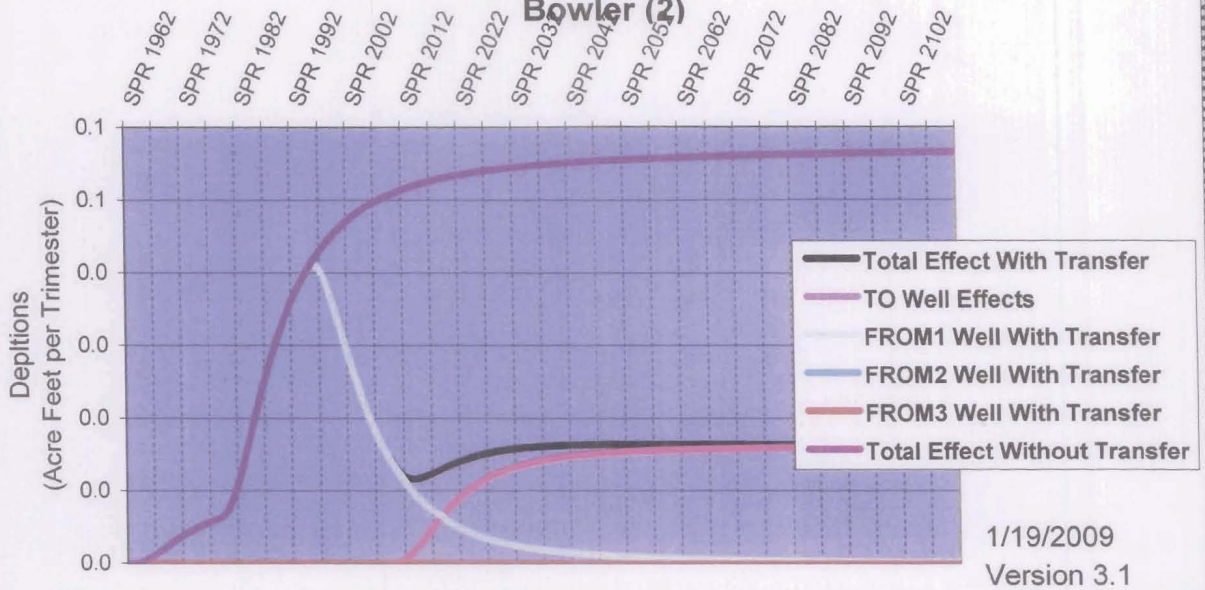


1/19/2009
Version 3.1

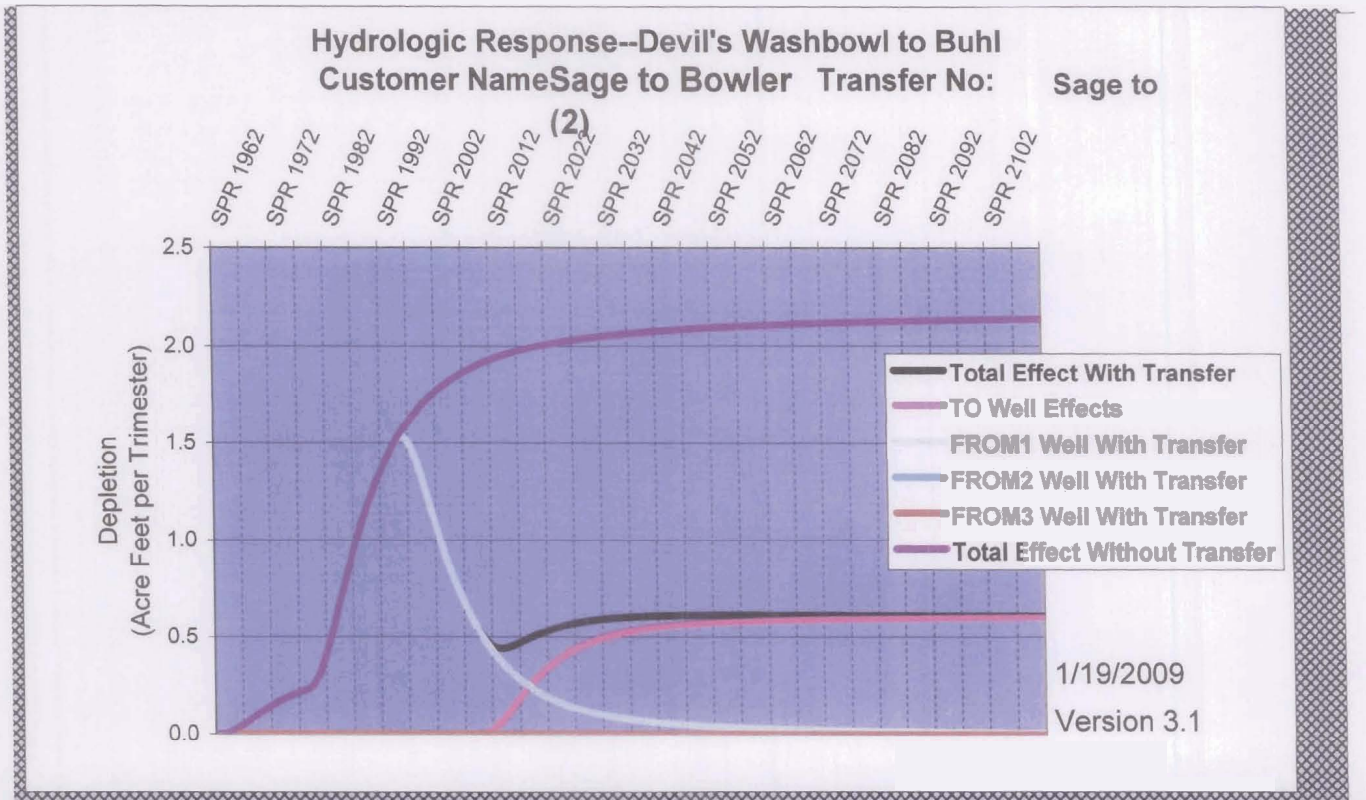
Customer Name: Sage to Bowler (2) **Transfer No: Sage to**

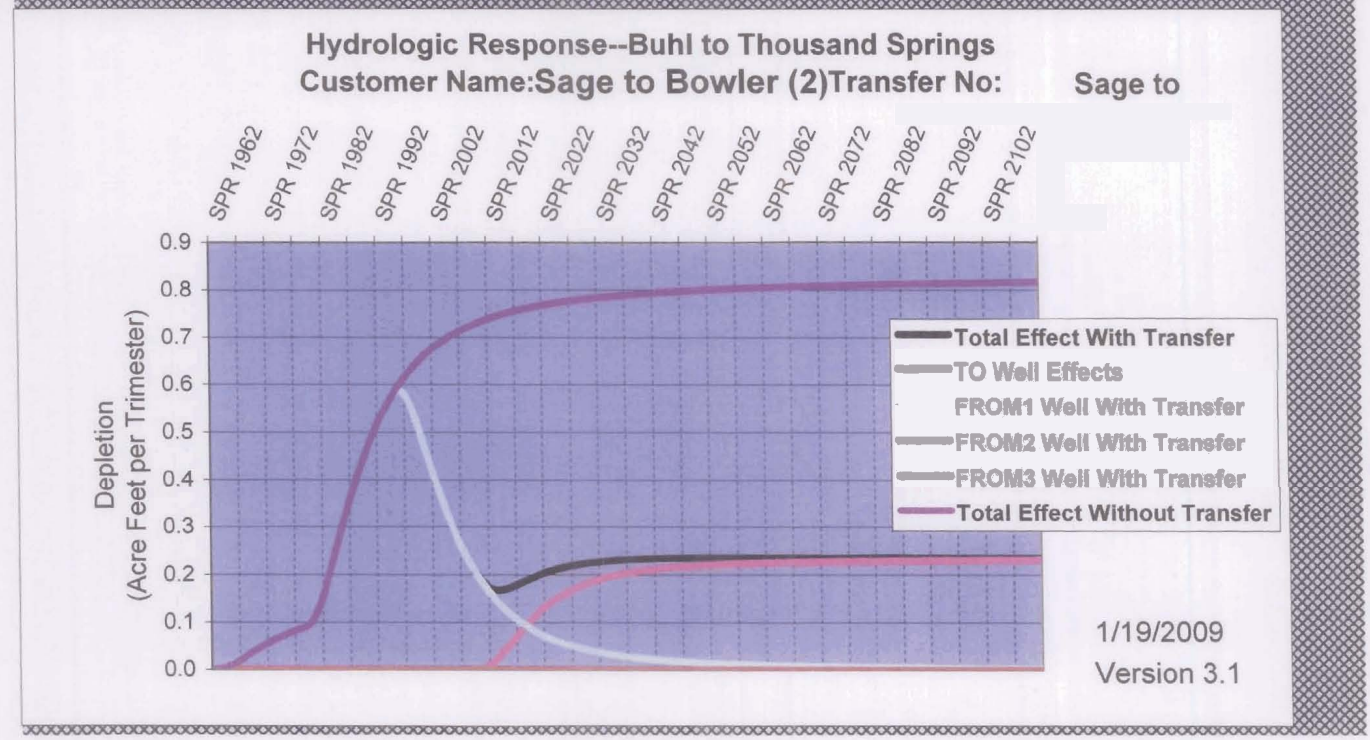
Hydrologic Response--Thousand Springs to Malad

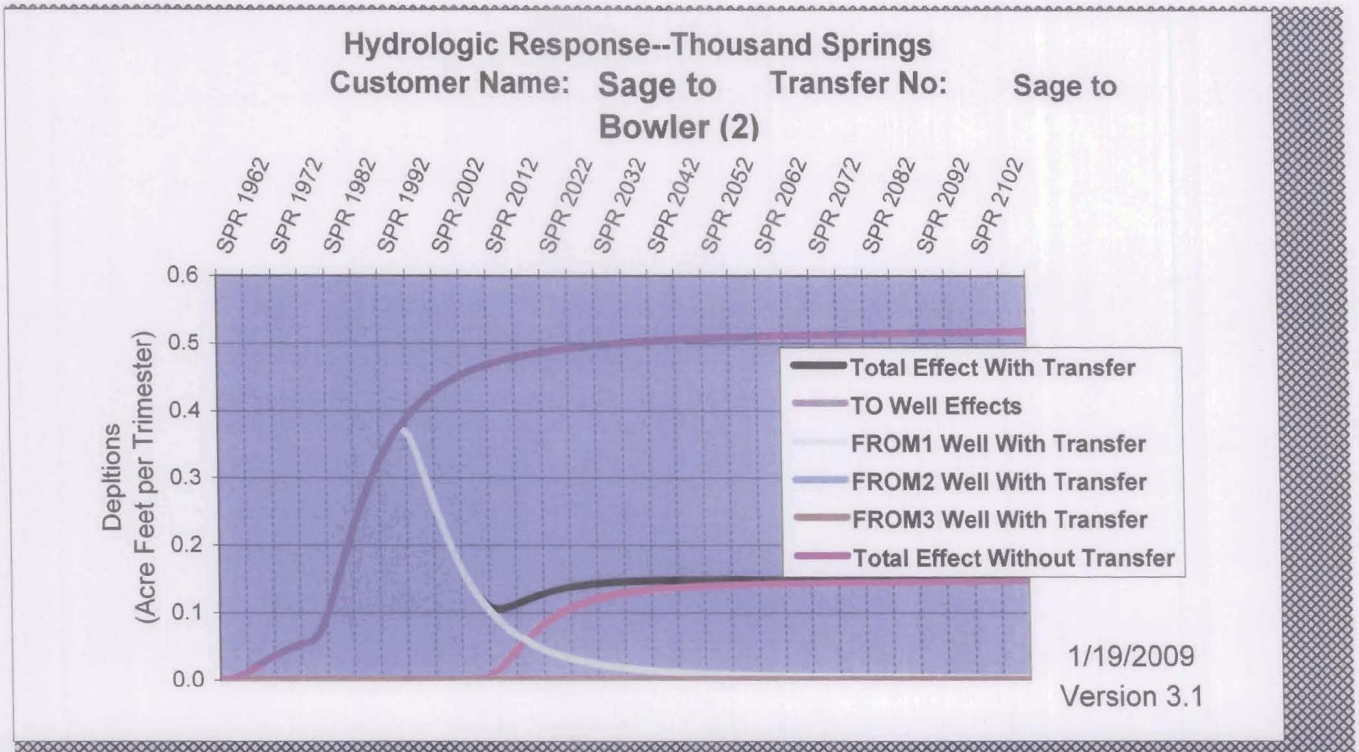
Customer Name: Sage to Bowler (2) **Transfer No: Sage to**



1/19/2009
Version 3.1

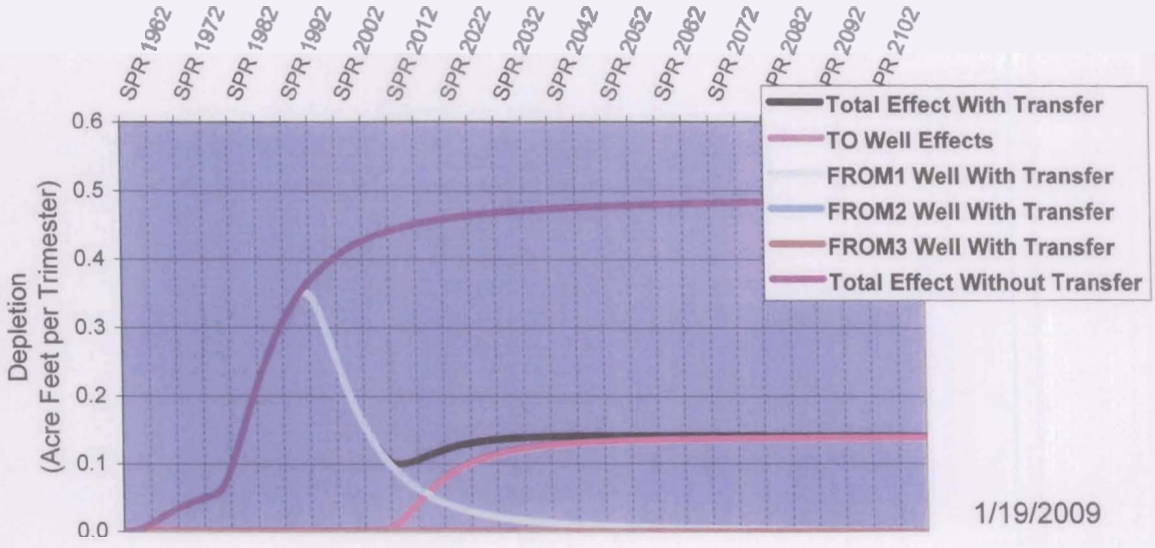

Hydrologic Response--Devil's Washbowl to Buhl
Customer NameSage to Bowler Transfer No: (2)
Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
2.5
2.0
1.5
1.0
0.5
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Buhl to Thousand Springs
Customer Name:Sage to Bowler (2)Transfer No:
Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Thousand Springs
Customer Name: Sage to Bowler (2) Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depltions (Acre Feet per Trimester)
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Hydrologic Response-- Malad

Customer Name: Sage to Bowler (2) **Transfer No:** Sage to

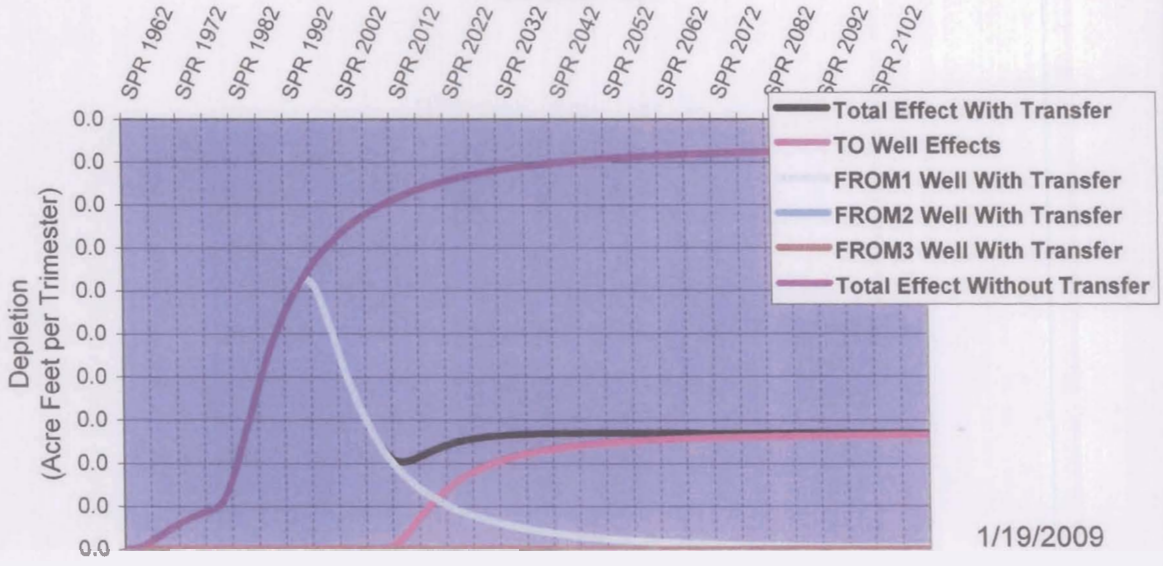


1/19/2009

Version 3.1

Hydrologic Response-- Malad to Bancroft

Customer Name: Sage to Bowler (2) **Transfer No:** Sage to



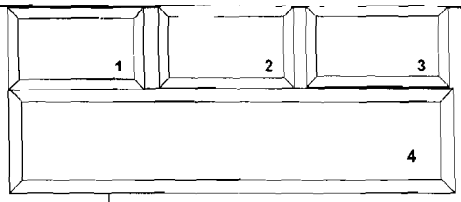
1/19/2009

Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

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Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON

YEAR: 1962

SEASON: SPRING

TRANSFER NO: Sage to KBC

TRANSFER NAME: Sage to KBC

ENTER CELL LOCATIONS:

	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	94	91		
COLUMN	91	69		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	24	24				
SUM 1962	0	24	24				
WIN 1962	0	24	24				
SPR 1963	0	24	24				
SUM 1963	0	24	24				
WIN 1963	0	24	24				
SPR 1964	0	24	24				
SUM 1964	0	24	24				
WIN 1964	0	24	24				
SPR 1965	0	24	24				
SUM 1965	0	24	24				
WIN 1965	0	24	24				
SPR 1966	0	24	24				
SUM 1966	0	24	24				
WIN 1966	0	24	24				
SPR 1967	0	24	24				
SUM 1967	0	24	24				
WIN 1967	0	24	24				
SPR 1968	0	24	24				
SUM 1968	0	24	24				
WIN 1968	0	24	24				
SPR 1969	0	24	24				
SUM 1969	0	24	24				
WIN 1969	0	24	24				
SPR 1970	0	24	24				
SUM 1970	0	24	24				
WIN 1970	0	24	24				
SPR 1971	0	24	24				
SUM 1971	0	24	24				
WIN 1971	0	24	24				
SPR 1972	0	24	24				
SUM 1972	0	24	24				
WIN 1972	0	24	24				
SPR 1973	0	24	24				
SUM 1973	0	24	24				
WIN 1973	0	24	24				
SPR 1974	0	90	90				
SUM 1974	0	90	90				
WIN 1974	0	90	90				
SPR 1975	0	90	90				
SUM 1975	0	90	90				
WIN 1975	0	90	90				
SPR 1976	0	90	90				
SUM 1976	0	90	90				
WIN 1976	0	90	90				
SPR 1977	0	90	90				
SUM 1977	0	90	90				
WIN 1977	0	90	90				
SPR 1978	0	90	90				
SUM 1978	0	90	90				
WIN 1978	0	90	90				
SPR 1979	0	90	90				
SUM 1979	0	90	90				
WIN 1979	0	90	90				
SPR 1980	0	90	90				
SUM 1980	0	90	90				
WIN 1980	0	90	90				
SPR 1981	0	90	90				
SUM 1981	0	90	90				
WIN 1981	0	90	90				
SPR 1982	0	90	90				
SUM 1982	0	90	90				
WIN 1982	0	90	90				
SPR 1983	0	90	90				
SUM 1983	0	90	90				
WIN 1983	0	90	90				
SPR 1984	0	90	90				
SUM 1984	0	90	90				
WIN 1984	0	90	90				
SPR 1985	0	90	90				
SUM 1985	0	90	90				
WIN 1985	0	90	90				
SPR 1986	0	90	90				
SUM 1986	0	90	90				
WIN 1986	0	90	90				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired time
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TO
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority date

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of t
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for ea
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	90	90
SUM 1987	0	90	90
WIN 1987	0	90	90
SPR 1988	0	90	90
SUM 1988	0	90	90
WIN 1988	0	90	90
SPR 1989	0	90	90
SUM 1989	0	90	90
WIN 1989	0	90	90
SPR 1990	0	90	90
SUM 1990	0	90	90
WIN 1990	0	90	90
SPR 1991	0	90	90
SUM 1991	0	90	90
WIN 1991	0	90	90
SPR 1992	0	90	90
SUM 1992	0	90	90
WIN 1992	0	90	90
SPR 1993	0	90	90
SUM 1993	0	90	90
WIN 1993	0	90	90
SPR 1994	0	0	90
SUM 1994	0	0	90
WIN 1994	0	0	90
SPR 1995	0	0	90
SUM 1995	0	0	90
WIN 1995	0	0	90
SPR 1996	0	0	90
SUM 1996	0	0	90
WIN 1996	0	0	90
SPR 1997	0	0	90
SUM 1997	0	0	90
WIN 1997	0	0	90
SPR 1998	0	0	90
SUM 1998	0	0	90
WIN 1998	0	0	90
SPR 1999	0	0	90
SUM 1999	0	0	90
WIN 1999	0	0	90
SPR 2000	0	0	90
SUM 2000	0	0	90
WIN 2000	0	0	90
SPR 2001	0	0	90
SUM 2001	0	0	90
WIN 2001	0	0	90
SPR 2002	0	0	90
SUM 2002	0	0	90
WIN 2002	0	0	90
SPR 2003	0	0	90
SUM 2003	0	0	90
WIN 2003	0	0	90
SPR 2004	0	0	90
SUM 2004	0	0	90
WIN 2004	0	0	90
SPR 2005	0	0	90
SUM 2005	0	0	90
WIN 2005	0	0	90
SPR 2006	0	0	90
SUM 2006	0	0	90
WIN 2006	0	0	90
SPR 2007	0	0	90
SUM 2007	0	0	90
WIN 2007	0	0	90
SPR 2008	90	0	90
SUM 2008	90	0	90
WIN 2008	90	0	90
SPR 2009	90	0	90
SUM 2009	90	0	90
WIN 2009	90	0	90
SPR 2010	90	0	90
SUM 2010	90	0	90
WIN 2010	90	0	90
SPR 2011	90	0	90
SUM 2011	90	0	90
WIN 2011	90	0	90
SPR 2012	90	0	90
SUM 2012	90	0	90
WIN 2012	90	0	90
SPR 2013	90	0	90
SUM 2013	90	0	90
WIN 2013	90	0	90
SPR 2014	90	0	90
SUM 2014	90	0	90
WIN 2014	90	0	90
SPR 2015	90	0	90
SUM 2015	90	0	90
WIN 2015	90	0	90
SPR 2016	90	0	90
SUM 2016	90	0	90
WIN 2016	90	0	90
SPR 2017	90	0	90
SUM 2017	90	0	90
WIN 2017	90	0	90
SPR 2018	90	0	90
SUM 2018	90	0	90
WIN 2018	90	0	90
SPR 2019	90	0	90
SUM 2019	90	0	90
WIN 2019	90	0	90
SPR 2020	90	0	90
SUM 2020	90	0	90
WIN 2020	90	0	90
SPR 2021	90	0	90
SUM 2021	90	0	90
WIN 2021	90	0	90
SPR 2022	90	0	90
SUM 2022	90	0	90
WIN 2022	90	0	90
SPR 2023	90	0	90
SUM 2023	90	0	90

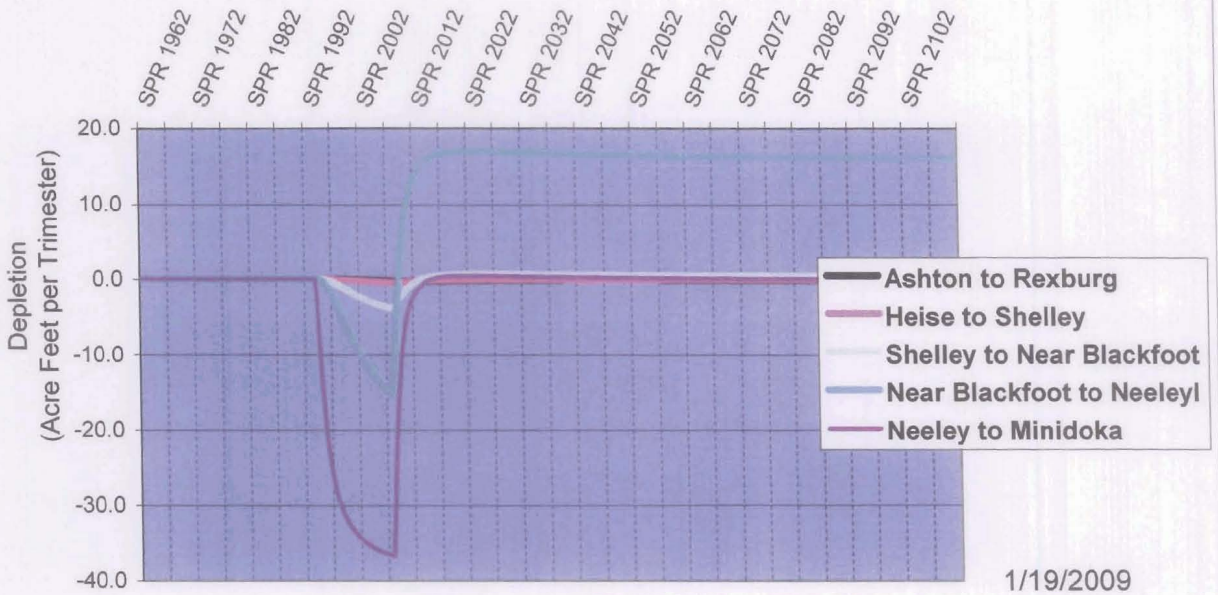
WIN 2023	90	0	90
SPR 2024	90	0	90
SUM 2024	90	0	90
WIN 2024	90	0	90
SPR 2025	90	0	90
SUM 2025	90	0	90
WIN 2025	90	0	90
SPR 2026	90	0	90
SUM 2026	90	0	90
WIN 2026	90	0	90
SPR 2027	90	0	90
SUM 2027	90	0	90
WIN 2027	90	0	90
SPR 2028	90	0	90
SUM 2028	90	0	90
WIN 2028	90	0	90
SPR 2029	90	0	90
SUM 2029	90	0	90
WIN 2029	90	0	90
SPR 2030	90	0	90
SUM 2030	90	0	90
WIN 2030	90	0	90
SPR 2031	90	0	90
SUM 2031	90	0	90
WIN 2031	90	0	90
SPR 2032	90	0	90
SUM 2032	90	0	90
WIN 2032	90	0	90
SPR 2033	90	0	90
SUM 2033	90	0	90
WIN 2033	90	0	90
SPR 2034	90	0	90
SUM 2034	90	0	90
WIN 2034	90	0	90
SPR 2035	90	0	90
SUM 2035	90	0	90
WIN 2035	90	0	90
SPR 2036	90	0	90
SUM 2036	90	0	90
WIN 2036	90	0	90
SPR 2037	90	0	90
SUM 2037	90	0	90
WIN 2037	90	0	90
SPR 2038	90	0	90
SUM 2038	90	0	90
WIN 2038	90	0	90
SPR 2039	90	0	90
SUM 2039	90	0	90
WIN 2039	90	0	90
SPR 2040	90	0	90
SUM 2040	90	0	90
WIN 2040	90	0	90
SPR 2041	90	0	90
SUM 2041	90	0	90
WIN 2041	90	0	90
SPR 2042	90	0	90
SUM 2042	90	0	90
WIN 2042	90	0	90
SPR 2043	90	0	90
SUM 2043	90	0	90
WIN 2043	90	0	90
SPR 2044	90	0	90
SUM 2044	90	0	90
WIN 2044	90	0	90
SPR 2045	90	0	90
SUM 2045	90	0	90
WIN 2045	90	0	90
SPR 2046	90	0	90
SUM 2046	90	0	90
WIN 2046	90	0	90
SPR 2047	90	0	90
SUM 2047	90	0	90
WIN 2047	90	0	90
SPR 2048	90	0	90
SUM 2048	90	0	90
WIN 2048	90	0	90
SPR 2049	90	0	90
SUM 2049	90	0	90
WIN 2049	90	0	90
SPR 2050	90	0	90
SUM 2050	90	0	90
WIN 2050	90	0	90
SPR 2051	90	0	90
SUM 2051	90	0	90
WIN 2051	90	0	90
SPR 2052	90	0	90
SUM 2052	90	0	90
WIN 2052	90	0	90
SPR 2053	90	0	90
SUM 2053	90	0	90
WIN 2053	90	0	90
SPR 2054	90	0	90
SUM 2054	90	0	90
WIN 2054	90	0	90
SPR 2055	90	0	90
SUM 2055	90	0	90
WIN 2055	90	0	90
SPR 2056	90	0	90
SUM 2056	90	0	90
WIN 2056	90	0	90
SPR 2057	90	0	90
SUM 2057	90	0	90
WIN 2057	90	0	90
SPR 2058	90	0	90
SUM 2058	90	0	90
WIN 2058	90	0	90
SPR 2059	90	0	90
SUM 2059	90	0	90
WIN 2059	90	0	90
SPR 2060	90	0	90

SUM 2060	90	0	90
WIN 2060	90	0	90
SPR 2061	90	0	90
SUM 2061	90	0	90
WIN 2061	90	0	90
SPR 2062	90	0	90
SUM 2062	90	0	90
WIN 2062	90	0	90
SPR 2063	90	0	90
SUM 2063	90	0	90
WIN 2063	90	0	90
SPR 2064	90	0	90
SUM 2064	90	0	90
WIN 2064	90	0	90
SPR 2065	90	0	90
SUM 2065	90	0	90
WIN 2065	90	0	90
SPR 2066	90	0	90
SUM 2066	90	0	90
WIN 2066	90	0	90
SPR 2067	90	0	90
SUM 2067	90	0	90
WIN 2067	90	0	90
SPR 2068	90	0	90
SUM 2068	90	0	90
WIN 2068	90	0	90
SPR 2069	90	0	90
SUM 2069	90	0	90
WIN 2069	90	0	90
SPR 2070	90	0	90
SUM 2070	90	0	90
WIN 2070	90	0	90
SPR 2071	90	0	90
SUM 2071	90	0	90
WIN 2071	90	0	90
SPR 2072	90	0	90
SUM 2072	90	0	90
WIN 2072	90	0	90
SPR 2073	90	0	90
SUM 2073	90	0	90
WIN 2073	90	0	90
SPR 2074	90	0	90
SUM 2074	90	0	90
WIN 2074	90	0	90
SPR 2075	90	0	90
SUM 2075	90	0	90
WIN 2075	90	0	90
SPR 2076	90	0	90
SUM 2076	90	0	90
WIN 2076	90	0	90
SPR 2077	90	0	90
SUM 2077	90	0	90
WIN 2077	90	0	90
SPR 2078	90	0	90
SUM 2078	90	0	90
WIN 2078	90	0	90
SPR 2079	90	0	90
SUM 2079	90	0	90
WIN 2079	90	0	90
SPR 2080	90	0	90
SUM 2080	90	0	90
WIN 2080	90	0	90
SPR 2081	90	0	90
SUM 2081	90	0	90
WIN 2081	90	0	90
SPR 2082	90	0	90
SUM 2082	90	0	90
WIN 2082	90	0	90
SPR 2083	90	0	90
SUM 2083	90	0	90
WIN 2083	90	0	90
SPR 2084	90	0	90
SUM 2084	90	0	90
WIN 2084	90	0	90
SPR 2085	90	0	90
SUM 2085	90	0	90
WIN 2085	90	0	90
SPR 2086	90	0	90
SUM 2086	90	0	90
WIN 2086	90	0	90
SPR 2087	90	0	90
SUM 2087	90	0	90
WIN 2087	90	0	90
SPR 2088	90	0	90
SUM 2088	90	0	90
WIN 2088	90	0	90
SPR 2089	90	0	90
SUM 2089	90	0	90
WIN 2089	90	0	90
SPR 2090	90	0	90
SUM 2090	90	0	90
WIN 2090	90	0	90
SPR 2091	90	0	90
SUM 2091	90	0	90
WIN 2091	90	0	90
SPR 2092	90	0	90
SUM 2092	90	0	90
WIN 2092	90	0	90
SPR 2093	90	0	90
SUM 2093	90	0	90
WIN 2093	90	0	90
SPR 2094	90	0	90
SUM 2094	90	0	90
WIN 2094	90	0	90
SPR 2095	90	0	90
SUM 2095	90	0	90
WIN 2095	90	0	90
SPR 2096	90	0	90
SUM 2096	90	0	90
WIN 2096	90	0	90

SPR 2097	90	0	90				
SUM 2097	90	0	90				
WIN 2097	90	0	90				
SPR 2098	90	0	90				
SUM 2098	90	0	90				
WIN 2098	90	0	90				
SPR 2099	90	0	90				
SUM 2099	90	0	90				
WIN 2099	90	0	90				
SPR 2100	90	0	90				
SUM 2100	90	0	90				
WIN 2100	90	0	90				
SPR 2101	90	0	90				
SUM 2101	90	0	90				
WIN 2101	90	0	90				
SPR 2102	90	0	90				
SUM 2102	90	0	90				
WIN 2102	90	0	90				
SPR 2103	90	0	90				
SUM 2103	90	0	90				
WIN 2103	90	0	90				
SPR 2104	90	0	90				
SUM 2104	90	0	90				
WIN 2104	90	0	90				
SPR 2105	90	0	90				
SUM 2105	90	0	90				
WIN 2105	90	0	90				
SPR 2106	90	0	90				
SUM 2106	90	0	90				
WIN 2106	90	0	90				
SPR 2107	90	0	90				
SUM 2107	90	0	90				
WIN 2107	90	0	90				
SPR 2108	90	0	90				
SUM 2108	90	0	90				
WIN 2108	90	0	90				
SPR 2109	90	0	90				
SUM 2109	90	0	90				
WIN 2109	90	0	90				
SPR 2110	90	0	90				
SUM 2110	90	0	90				
WIN 2110	90	0	90				
SPR 2111	90	0	90				
SUM 2111	90	0	90				
WIN 2111	90	0	90				

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

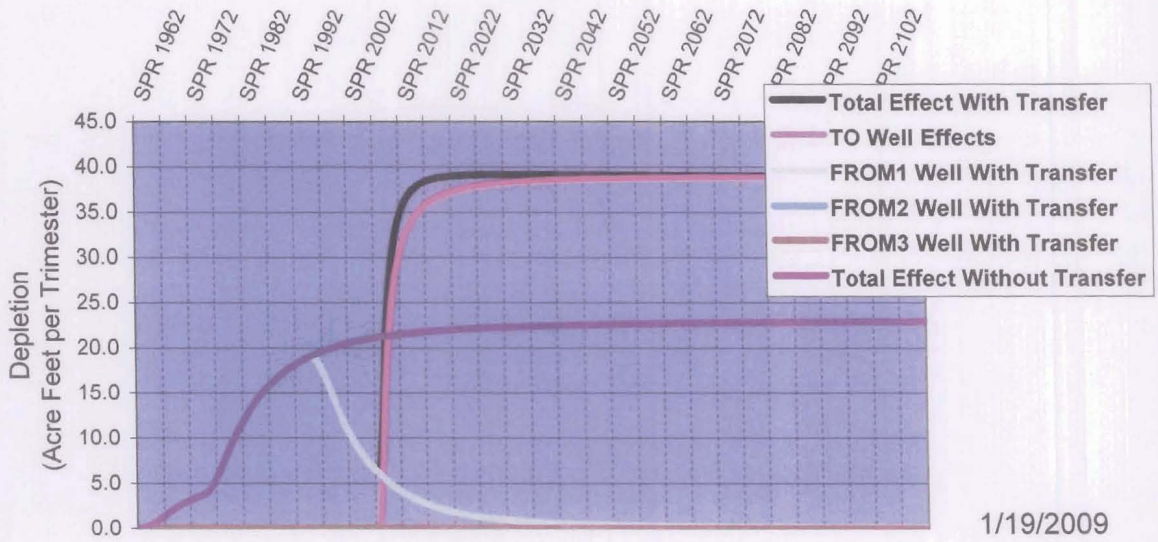


1/19/2009
Version 3.1

Customer Name: Sage to KBC **Transfer No:** Sage to

Hydrologic Response-- Near Blackfoot to Neeley

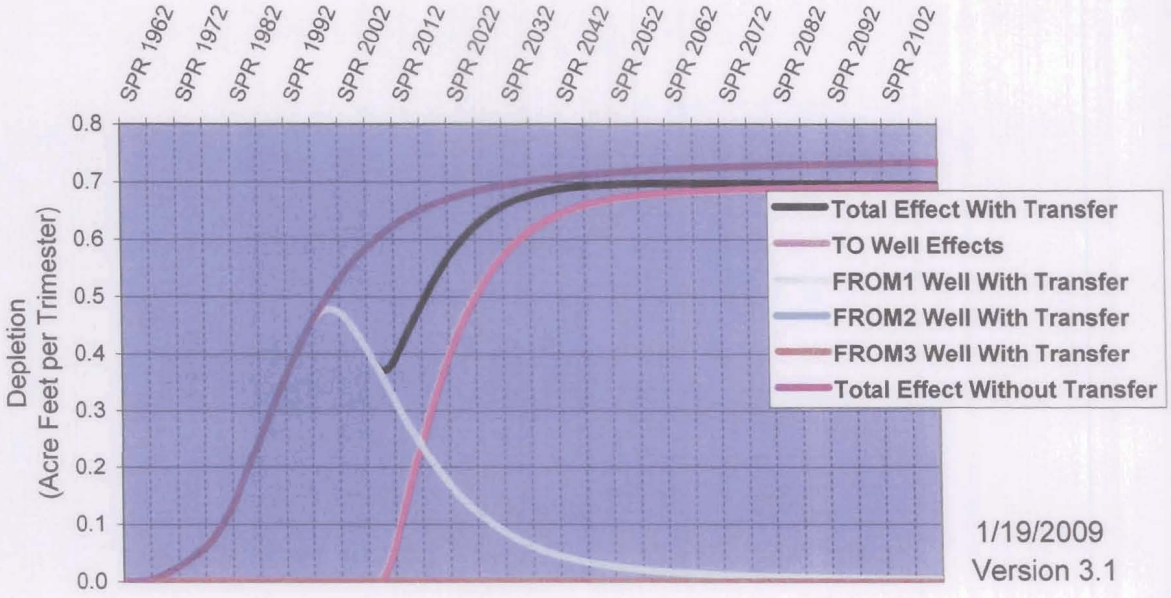
Customer Name: Sage to KBC **Transfer No:** Sage to



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

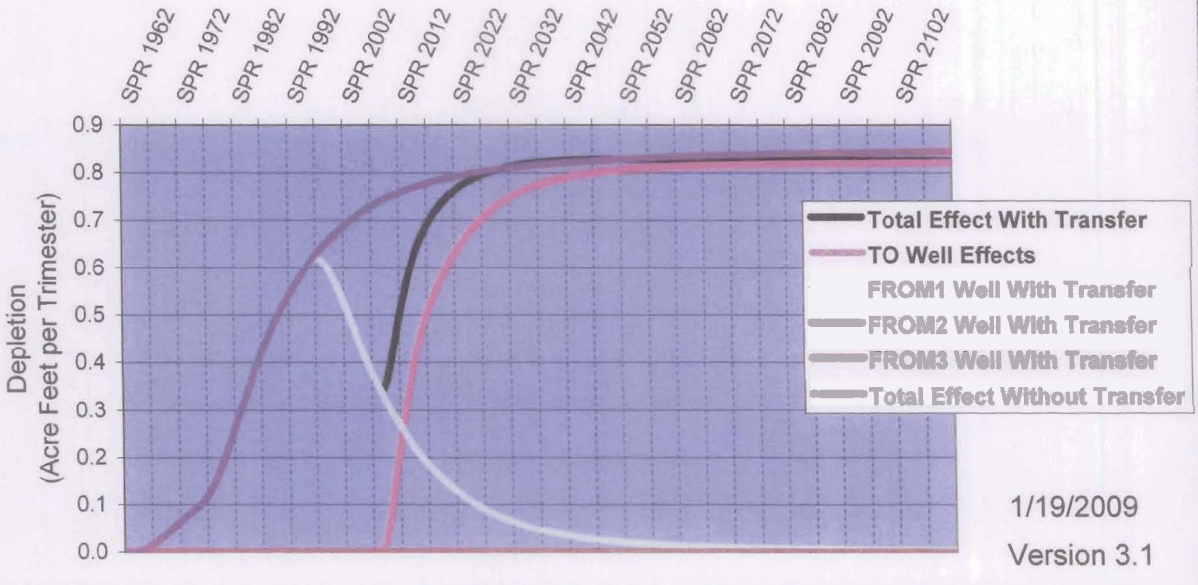
Customer Name:Sage to KBC Transfer No: Sage to



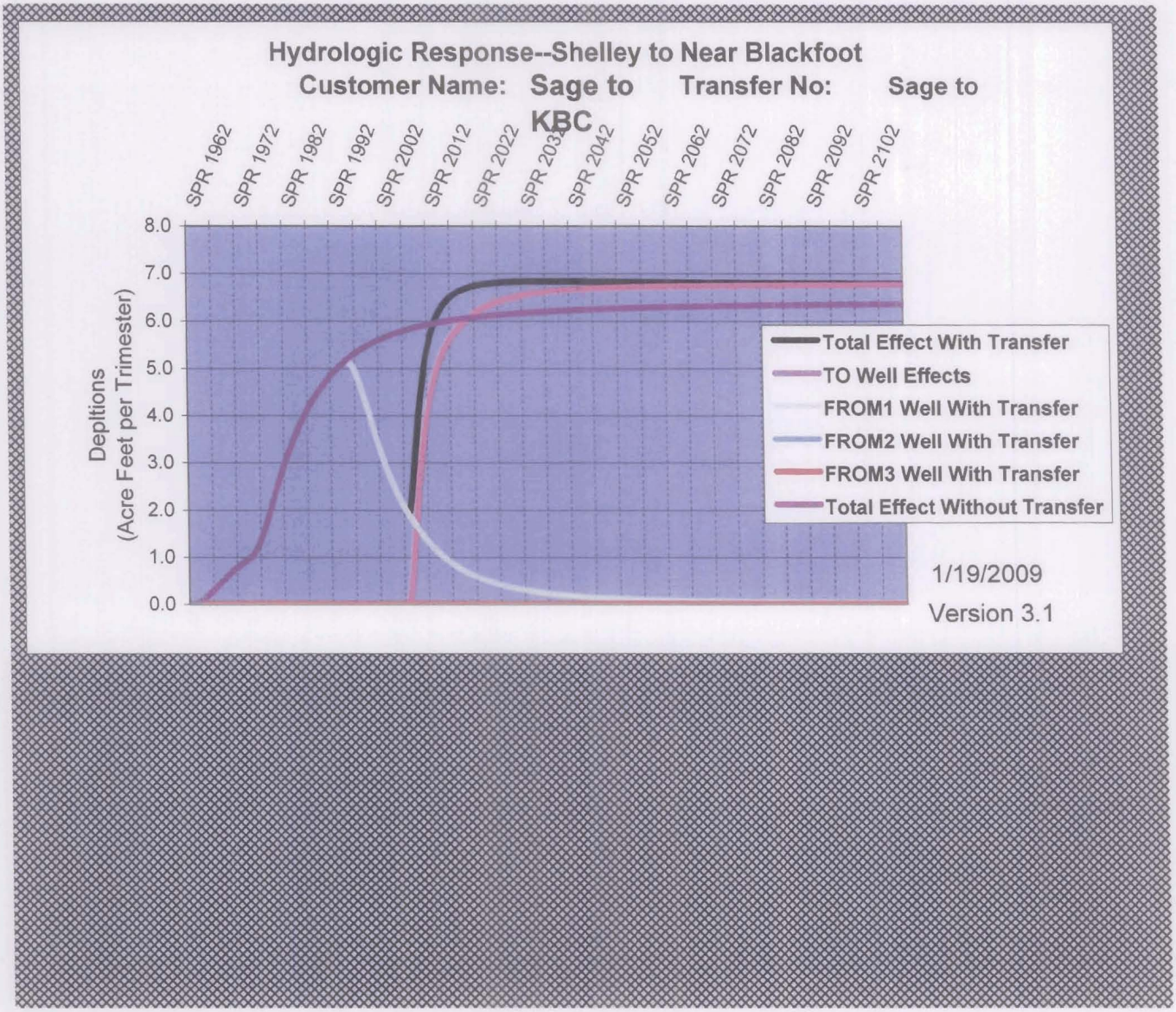
1/19/2009
Version 3.1

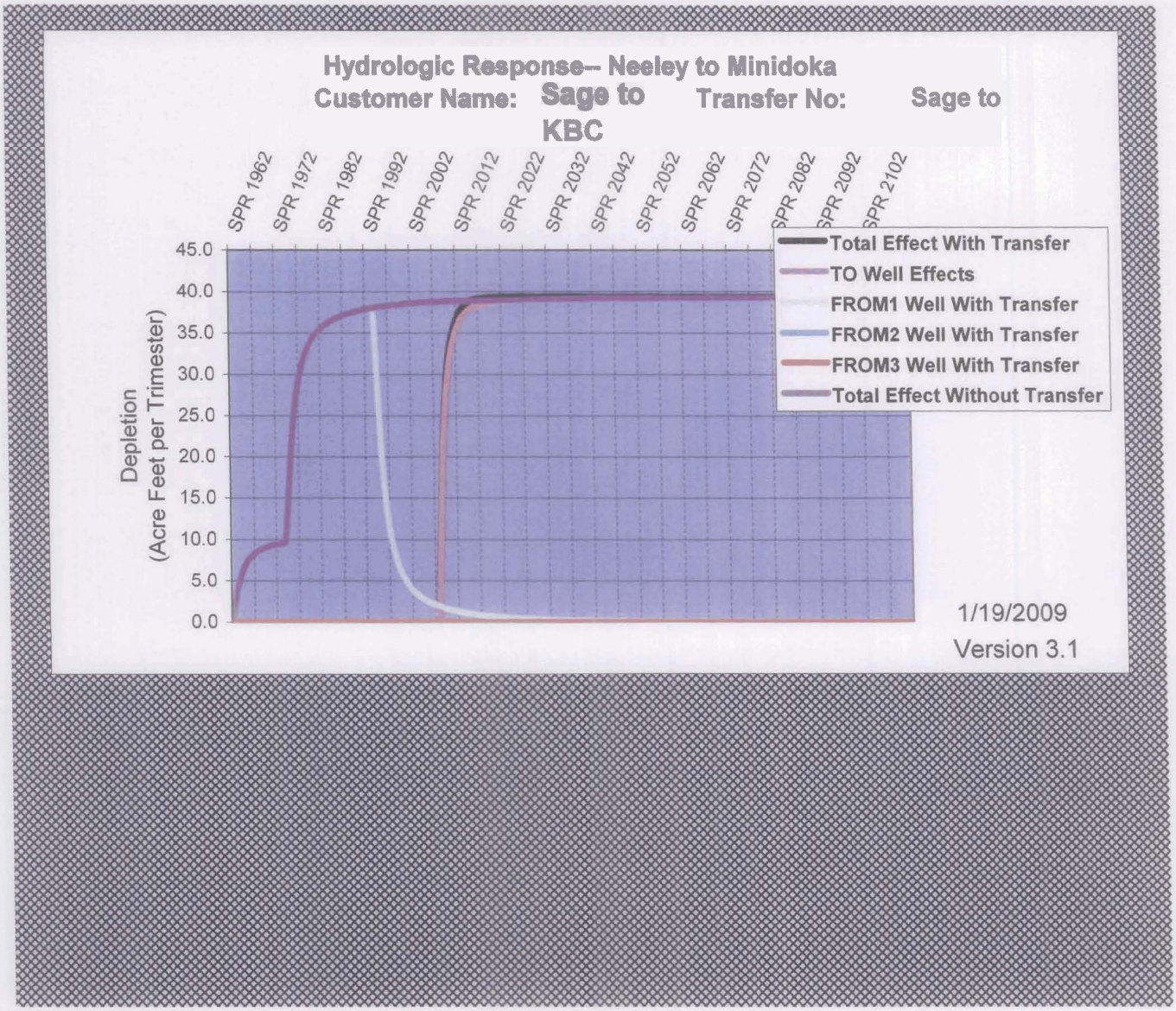
Hydrologic Response--Heise to Shelley

Customer Name:Sage to KBC Transfer No: Sage to



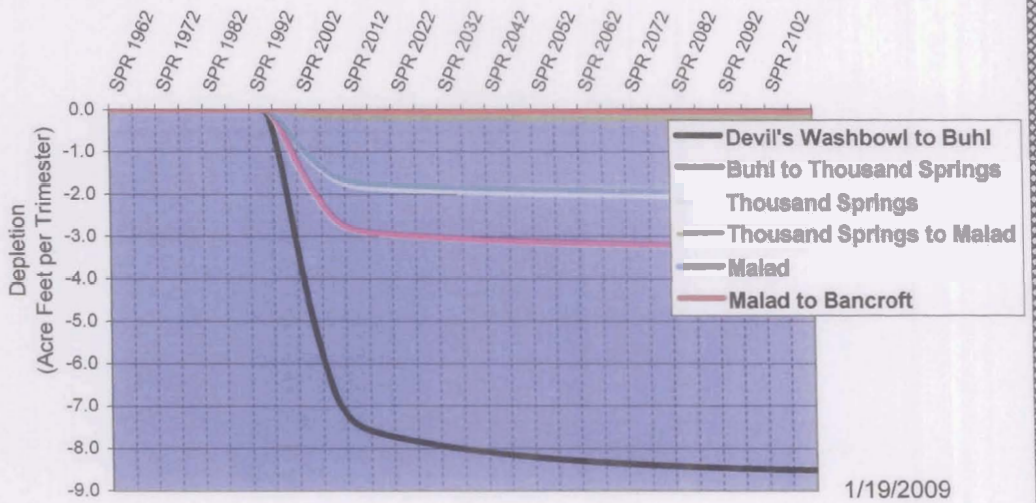
1/19/2009
Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage to KBC
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage to KBC
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

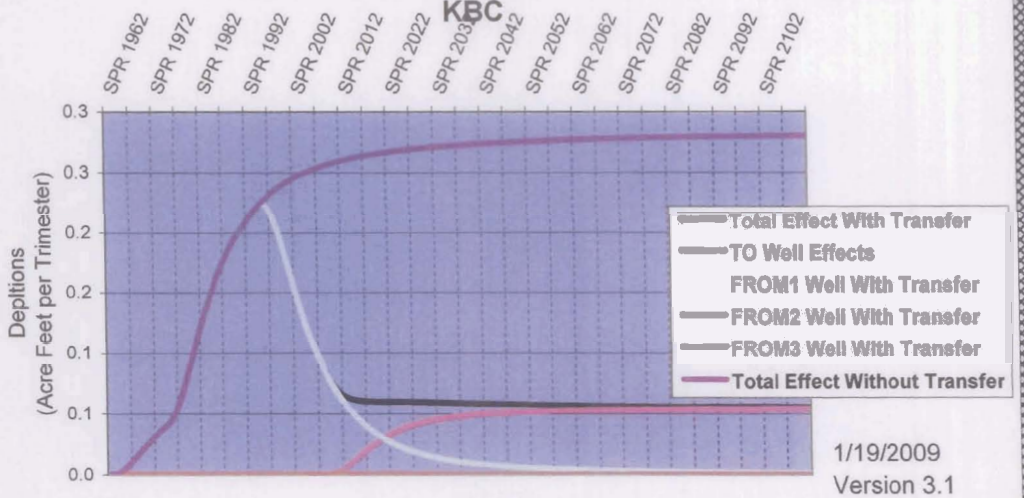


1/19/2009
Version 3.1

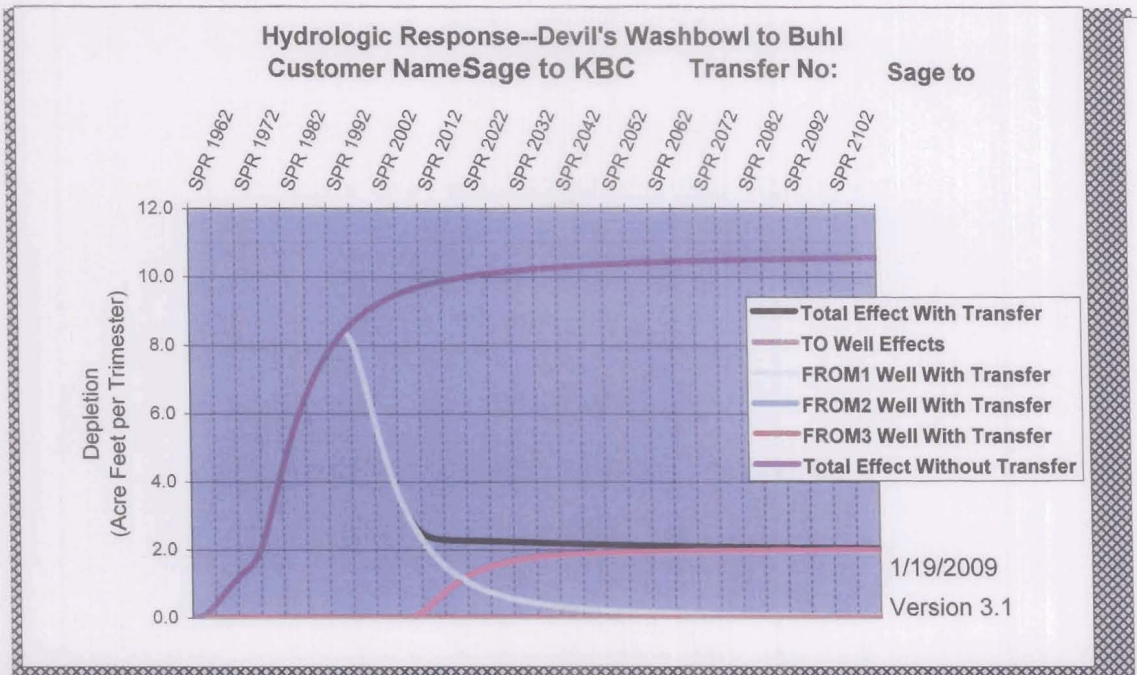
Customer Name: Sage to KBC **Transfer No:** Sage to

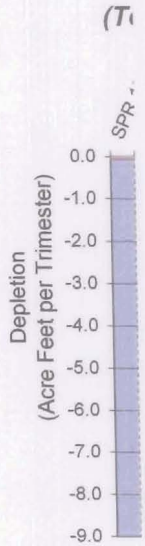
Hydrologic Response--Thousand Springs to Malad

Customer Name: Sage to KBC **Transfer No:** Sage to

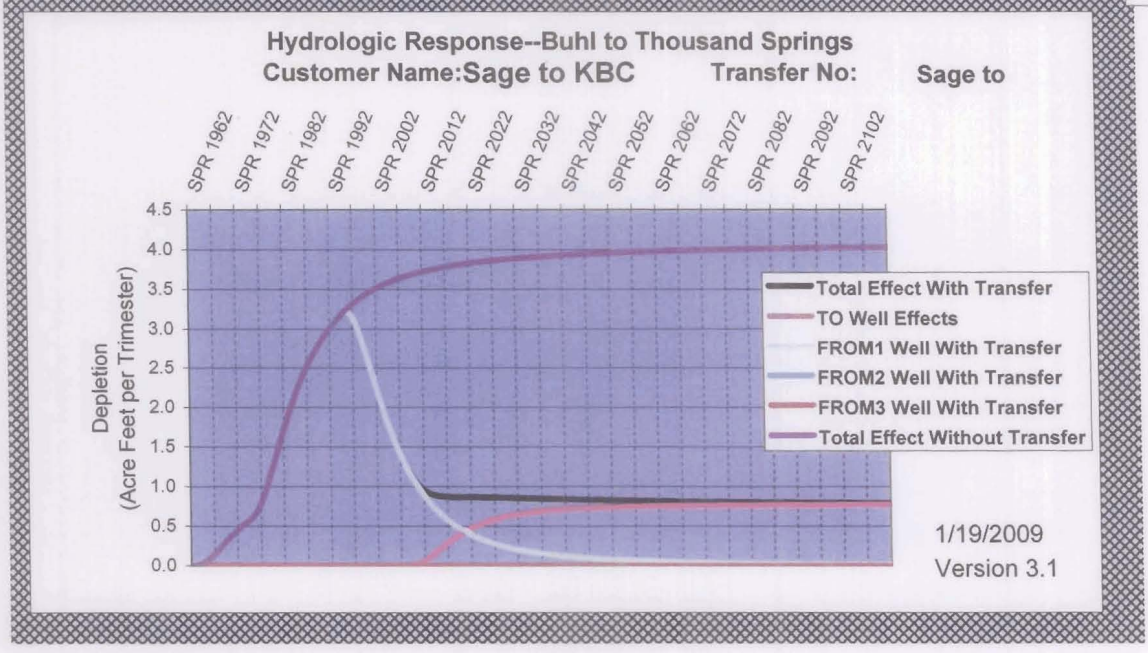


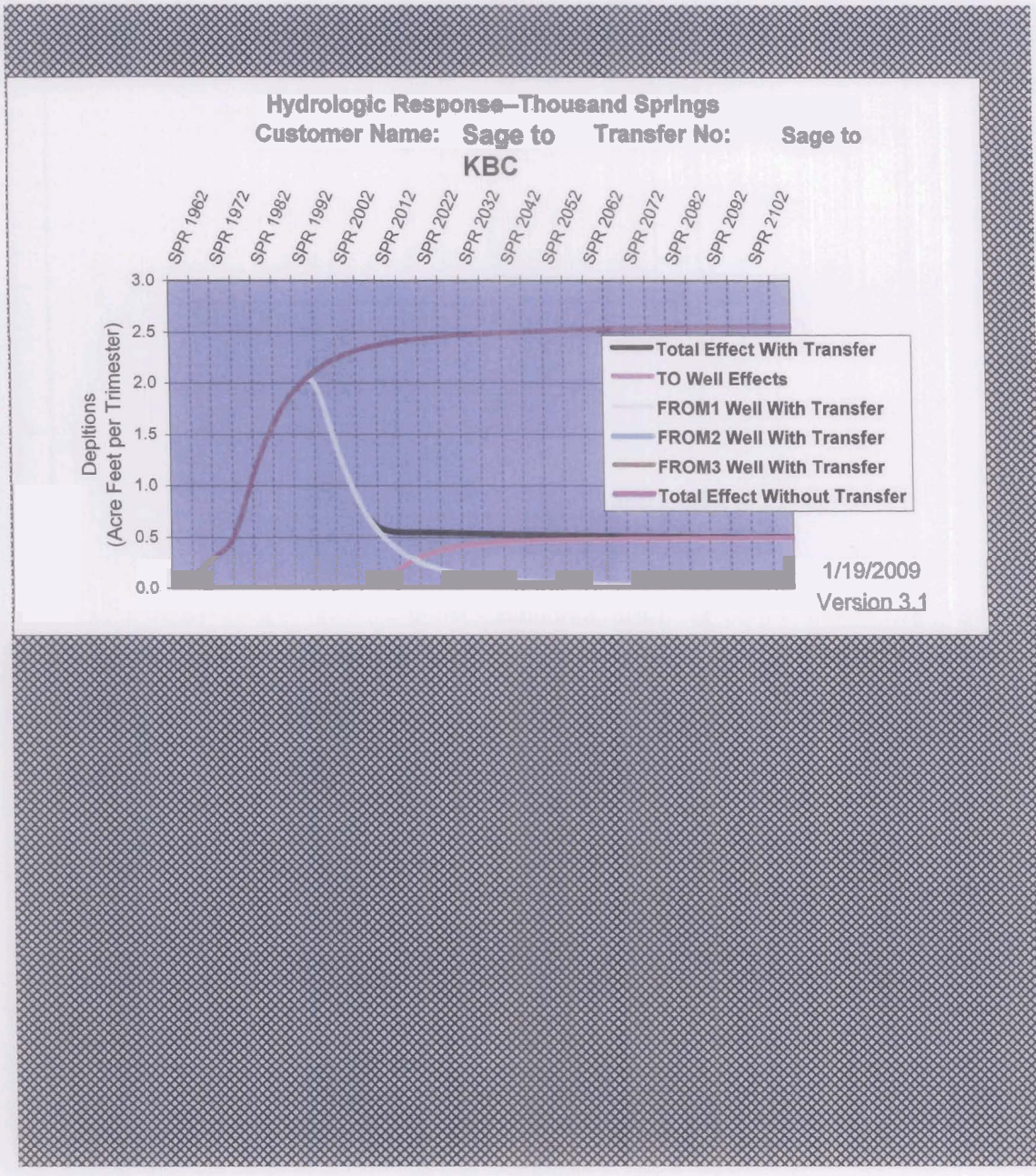
1/19/2009
Version 3.1

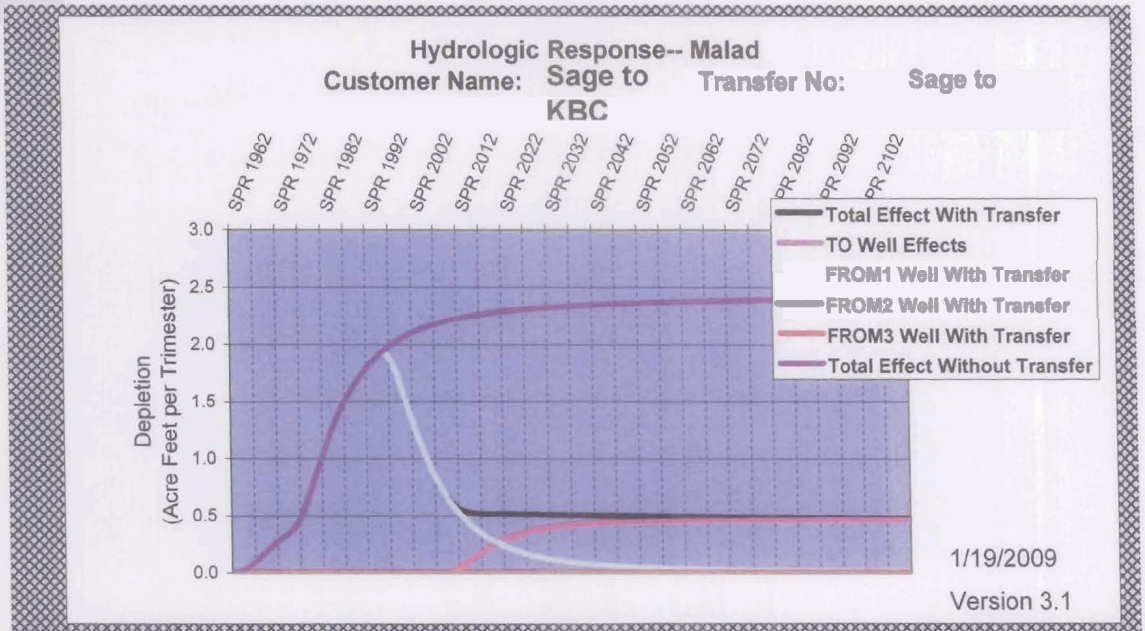


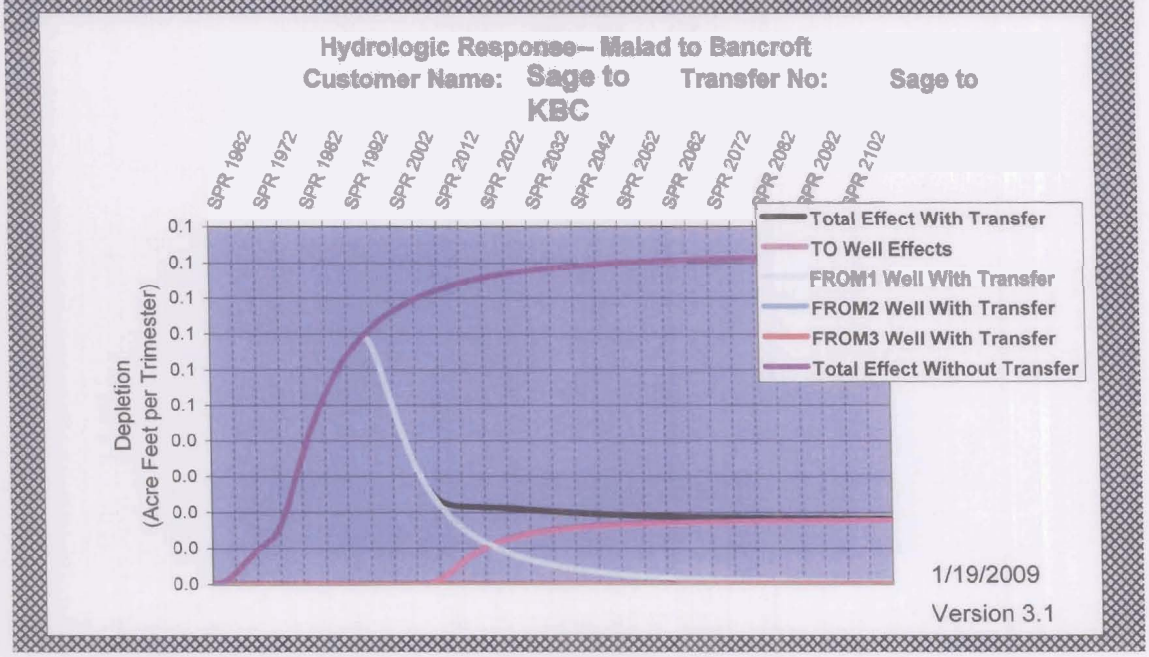


Customer Name:




Hydrologic Response–Thousand Springs
Customer Name: Sage to KBC
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

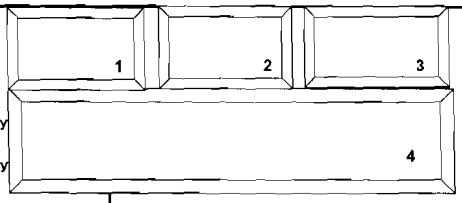

Hydrologic Response-- Malad
Customer Name: Sage to KBC
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Malad to Bancroft
Customer Name: Sage to KBC
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
0.1
0.1
0.1
0.1
0.1
0.1
0.0
0.0
0.0
0.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

UNIVERSITY OF IDAHO - IDAHO WATER RESOURCES RESEARCH INSTITUTE | **IDAHO DEPARTMENT OF WATER RESOURCES**

Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON	TRANSFER NO: Sage to Stoker Dairy
YEAR: 1962	TRANSFER NAME: Sage to Stoker Dairy
SEASON: SPRING	

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	93	91		
COLUMN	53	69		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	39	39				
SUM 1962	0	39	39				
WIN 1962	0	39	39				
SPR 1963	0	39	39				
SUM 1963	0	39	39				
WIN 1963	0	39	39				
SPR 1964	0	39	39				
SUM 1964	0	39	39				
WIN 1964	0	39	39				
SPR 1965	0	39	39				
SUM 1965	0	39	39				
WIN 1965	0	39	39				
SPR 1966	0	39	39				
SUM 1966	0	39	39				
WIN 1966	0	39	39				
SPR 1967	0	39	39				
SUM 1967	0	39	39				
WIN 1967	0	39	39				
SPR 1968	0	39	39				
SUM 1968	0	39	39				
WIN 1968	0	39	39				
SPR 1969	0	39	39				
SUM 1969	0	39	39				
WIN 1969	0	39	39				
SPR 1970	0	39	39				
SUM 1970	0	39	39				
WIN 1970	0	39	39				
SPR 1971	0	39	39				
SUM 1971	0	39	39				
WIN 1971	0	39	39				
SPR 1972	0	39	39				
SUM 1972	0	39	39				
WIN 1972	0	39	39				
SPR 1973	0	39	39				
SUM 1973	0	39	39				
WIN 1973	0	39	39				
SPR 1974	0	39	39				
SUM 1974	0	39	39				
WIN 1974	0	39	39				
SPR 1975	0	39	39				
SUM 1975	0	39	39				
WIN 1975	0	39	39				
SPR 1976	0	39	39				
SUM 1976	0	39	39				
WIN 1976	0	39	39				
SPR 1977	0	39	39				
SUM 1977	0	39	39				
WIN 1977	0	39	39				
SPR 1978	0	147	147				
SUM 1978	0	147	147				
WIN 1978	0	147	147				
SPR 1979	0	147	147				
SUM 1979	0	147	147				
WIN 1979	0	147	147				
SPR 1980	0	147	147				
SUM 1980	0	147	147				
WIN 1980	0	147	147				
SPR 1981	0	147	147				
SUM 1981	0	147	147				
WIN 1981	0	147	147				
SPR 1982	0	147	147				
SUM 1982	0	147	147				
WIN 1982	0	147	147				
SPR 1983	0	147	147				
SUM 1983	0	147	147				
WIN 1983	0	147	147				
SPR 1984	0	147	147				
SUM 1984	0	147	147				
WIN 1984	0	147	147				
SPR 1985	0	147	147				
SUM 1985	0	147	147				
WIN 1985	0	147	147				
SPR 1986	0	147	147				
SUM 1986	0	147	147				
WIN 1986	0	147	147				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DAT
The date only needs to be updated once, unless the desired timef
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TC
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority date

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfer

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	147	147
SUM 1987	0	147	147
WIN 1987	0	147	147
SPR 1988	0	147	147
SUM 1988	0	147	147
WIN 1988	0	147	147
SPR 1989	0	147	147
SUM 1989	0	147	147
WIN 1989	0	147	147
SPR 1990	0	147	147
SUM 1990	0	147	147
WIN 1990	0	147	147
SPR 1991	0	147	147
SUM 1991	0	147	147
WIN 1991	0	147	147
SPR 1992	0	147	147
SUM 1992	0	147	147
WIN 1992	0	147	147
SPR 1993	0	147	147
SUM 1993	0	147	147
WIN 1993	0	147	147
SPR 1994	0	0	147
SUM 1994	0	0	147
WIN 1994	0	0	147
SPR 1995	0	0	147
SUM 1995	0	0	147
WIN 1995	0	0	147
SPR 1996	0	0	147
SUM 1996	0	0	147
WIN 1996	0	0	147
SPR 1997	0	0	147
SUM 1997	0	0	147
WIN 1997	0	0	147
SPR 1998	0	0	147
SUM 1998	0	0	147
WIN 1998	0	0	147
SPR 1999	0	0	147
SUM 1999	0	0	147
WIN 1999	0	0	147
SPR 2000	0	0	147
SUM 2000	0	0	147
WIN 2000	0	0	147
SPR 2001	0	0	147
SUM 2001	0	0	147
WIN 2001	0	0	147
SPR 2002	0	0	147
SUM 2002	0	0	147
WIN 2002	0	0	147
SPR 2003	0	0	147
SUM 2003	0	0	147
WIN 2003	0	0	147
SPR 2004	0	0	147
SUM 2004	0	0	147
WIN 2004	0	0	147
SPR 2005	0	0	147
SUM 2005	0	0	147
WIN 2005	0	0	147
SPR 2006	0	0	147
SUM 2006	0	0	147
WIN 2006	0	0	147
SPR 2007	0	0	147
SUM 2007	0	0	147
WIN 2007	0	0	147
SPR 2008	147	0	147
SUM 2008	147	0	147
WIN 2008	147	0	147
SPR 2009	147	0	147
SUM 2009	147	0	147
WIN 2009	147	0	147
SPR 2010	147	0	147
SUM 2010	147	0	147
WIN 2010	147	0	147
SPR 2011	147	0	147
SUM 2011	147	0	147
WIN 2011	147	0	147
SPR 2012	147	0	147
SUM 2012	147	0	147
WIN 2012	147	0	147
SPR 2013	147	0	147
SUM 2013	147	0	147
WIN 2013	147	0	147
SPR 2014	147	0	147
SUM 2014	147	0	147
WIN 2014	147	0	147
SPR 2015	147	0	147
SUM 2015	147	0	147
WIN 2015	147	0	147
SPR 2016	147	0	147
SUM 2016	147	0	147
WIN 2016	147	0	147
SPR 2017	147	0	147
SUM 2017	147	0	147
WIN 2017	147	0	147
SPR 2018	147	0	147
SUM 2018	147	0	147
WIN 2018	147	0	147
SPR 2019	147	0	147
SUM 2019	147	0	147
WIN 2019	147	0	147
SPR 2020	147	0	147
SUM 2020	147	0	147
WIN 2020	147	0	147
SPR 2021	147	0	147
SUM 2021	147	0	147
WIN 2021	147	0	147
SPR 2022	147	0	147
SUM 2022	147	0	147
WIN 2022	147	0	147
SPR 2023	147	0	147
SUM 2023	147	0	147

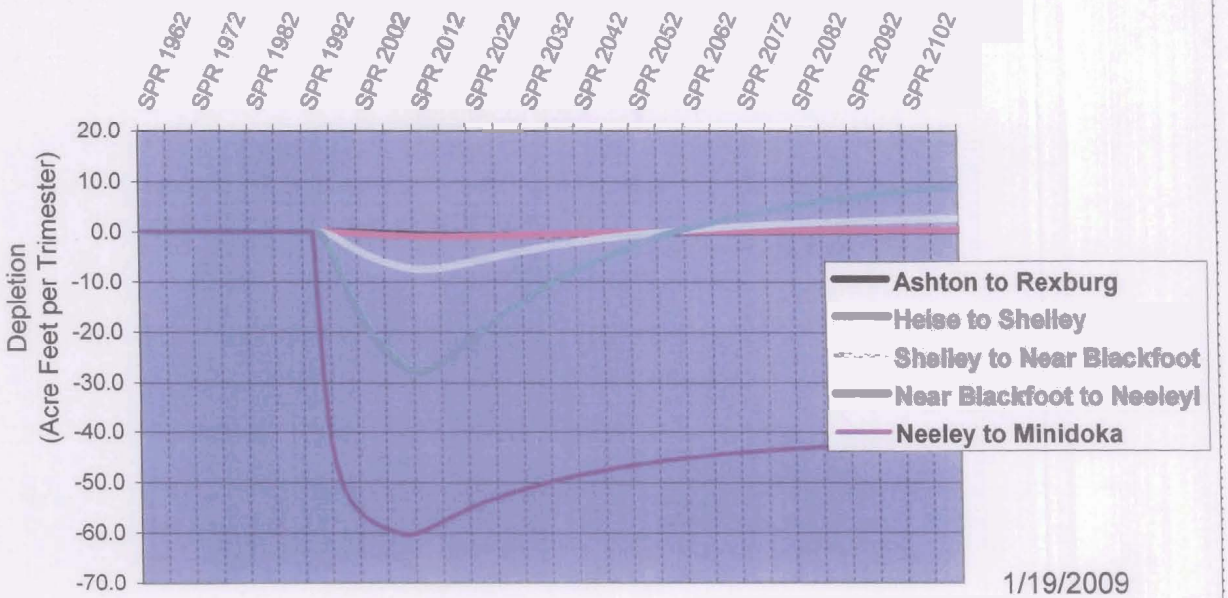
WIN 2023	147	0	147
SPR 2024	147	0	147
SUM 2024	147	0	147
WIN 2024	147	0	147
SPR 2025	147	0	147
SUM 2025	147	0	147
WIN 2025	147	0	147
SPR 2026	147	0	147
SUM 2026	147	0	147
WIN 2026	147	0	147
SPR 2027	147	0	147
SUM 2027	147	0	147
WIN 2027	147	0	147
SPR 2028	147	0	147
SUM 2028	147	0	147
WIN 2028	147	0	147
SPR 2029	147	0	147
SUM 2029	147	0	147
WIN 2029	147	0	147
SPR 2030	147	0	147
SUM 2030	147	0	147
WIN 2030	147	0	147
SPR 2031	147	0	147
SUM 2031	147	0	147
WIN 2031	147	0	147
SPR 2032	147	0	147
SUM 2032	147	0	147
WIN 2032	147	0	147
SPR 2033	147	0	147
SUM 2033	147	0	147
WIN 2033	147	0	147
SPR 2034	147	0	147
SUM 2034	147	0	147
WIN 2034	147	0	147
SPR 2035	147	0	147
SUM 2035	147	0	147
WIN 2035	147	0	147
SPR 2036	147	0	147
SUM 2036	147	0	147
WIN 2036	147	0	147
SPR 2037	147	0	147
SUM 2037	147	0	147
WIN 2037	147	0	147
SPR 2038	147	0	147
SUM 2038	147	0	147
WIN 2038	147	0	147
SPR 2039	147	0	147
SUM 2039	147	0	147
WIN 2039	147	0	147
SPR 2040	147	0	147
SUM 2040	147	0	147
WIN 2040	147	0	147
SPR 2041	147	0	147
SUM 2041	147	0	147
WIN 2041	147	0	147
SPR 2042	147	0	147
SUM 2042	147	0	147
WIN 2042	147	0	147
SPR 2043	147	0	147
SUM 2043	147	0	147
WIN 2043	147	0	147
SPR 2044	147	0	147
SUM 2044	147	0	147
WIN 2044	147	0	147
SPR 2045	147	0	147
SUM 2045	147	0	147
WIN 2045	147	0	147
SPR 2046	147	0	147
SUM 2046	147	0	147
WIN 2046	147	0	147
SPR 2047	147	0	147
SUM 2047	147	0	147
WIN 2047	147	0	147
SPR 2048	147	0	147
SUM 2048	147	0	147
WIN 2048	147	0	147
SPR 2049	147	0	147
SUM 2049	147	0	147
WIN 2049	147	0	147
SPR 2050	147	0	147
SUM 2050	147	0	147
WIN 2050	147	0	147
SPR 2051	147	0	147
SUM 2051	147	0	147
WIN 2051	147	0	147
SPR 2052	147	0	147
SUM 2052	147	0	147
WIN 2052	147	0	147
SPR 2053	147	0	147
SUM 2053	147	0	147
WIN 2053	147	0	147
SPR 2054	147	0	147
SUM 2054	147	0	147
WIN 2054	147	0	147
SPR 2055	147	0	147
SUM 2055	147	0	147
WIN 2055	147	0	147
SPR 2056	147	0	147
SUM 2056	147	0	147
WIN 2056	147	0	147
SPR 2057	147	0	147
SUM 2057	147	0	147
WIN 2057	147	0	147
SPR 2058	147	0	147
SUM 2058	147	0	147
WIN 2058	147	0	147
SPR 2059	147	0	147
SUM 2059	147	0	147
WIN 2059	147	0	147
SPR 2060	147	0	147

SUM 2060	147	0	147
WIN 2060	147	0	147
SPR 2061	147	0	147
SUM 2061	147	0	147
WIN 2061	147	0	147
SPR 2062	147	0	147
SUM 2062	147	0	147
WIN 2062	147	0	147
SPR 2063	147	0	147
SUM 2063	147	0	147
WIN 2063	147	0	147
SPR 2064	147	0	147
SUM 2064	147	0	147
WIN 2064	147	0	147
SPR 2065	147	0	147
SUM 2065	147	0	147
WIN 2065	147	0	147
SPR 2066	147	0	147
SUM 2066	147	0	147
WIN 2066	147	0	147
SPR 2067	147	0	147
SUM 2067	147	0	147
WIN 2067	147	0	147
SPR 2068	147	0	147
SUM 2068	147	0	147
WIN 2068	147	0	147
SPR 2069	147	0	147
SUM 2069	147	0	147
WIN 2069	147	0	147
SPR 2070	147	0	147
SUM 2070	147	0	147
WIN 2070	147	0	147
SPR 2071	147	0	147
SUM 2071	147	0	147
WIN 2071	147	0	147
SPR 2072	147	0	147
SUM 2072	147	0	147
WIN 2072	147	0	147
SPR 2073	147	0	147
SUM 2073	147	0	147
WIN 2073	147	0	147
SPR 2074	147	0	147
SUM 2074	147	0	147
WIN 2074	147	0	147
SPR 2075	147	0	147
SUM 2075	147	0	147
WIN 2075	147	0	147
SPR 2076	147	0	147
SUM 2076	147	0	147
WIN 2076	147	0	147
SPR 2077	147	0	147
SUM 2077	147	0	147
WIN 2077	147	0	147
SPR 2078	147	0	147
SUM 2078	147	0	147
WIN 2078	147	0	147
SPR 2079	147	0	147
SUM 2079	147	0	147
WIN 2079	147	0	147
SPR 2080	147	0	147
SUM 2080	147	0	147
WIN 2080	147	0	147
SPR 2081	147	0	147
SUM 2081	147	0	147
WIN 2081	147	0	147
SPR 2082	147	0	147
SUM 2082	147	0	147
WIN 2082	147	0	147
SPR 2083	147	0	147
SUM 2083	147	0	147
WIN 2083	147	0	147
SPR 2084	147	0	147
SUM 2084	147	0	147
WIN 2084	147	0	147
SPR 2085	147	0	147
SUM 2085	147	0	147
WIN 2085	147	0	147
SPR 2086	147	0	147
SUM 2086	147	0	147
WIN 2086	147	0	147
SPR 2087	147	0	147
SUM 2087	147	0	147
WIN 2087	147	0	147
SPR 2088	147	0	147
SUM 2088	147	0	147
WIN 2088	147	0	147
SPR 2089	147	0	147
SUM 2089	147	0	147
WIN 2089	147	0	147
SPR 2090	147	0	147
SUM 2090	147	0	147
WIN 2090	147	0	147
SPR 2091	147	0	147
SUM 2091	147	0	147
WIN 2091	147	0	147
SPR 2092	147	0	147
SUM 2092	147	0	147
WIN 2092	147	0	147
SPR 2093	147	0	147
SUM 2093	147	0	147
WIN 2093	147	0	147
SPR 2094	147	0	147
SUM 2094	147	0	147
WIN 2094	147	0	147
SPR 2095	147	0	147
SUM 2095	147	0	147
WIN 2095	147	0	147
SPR 2096	147	0	147
SUM 2096	147	0	147
WIN 2096	147	0	147

SPR 2097	147	0	147				
SUM 2097	147	0	147				
WIN 2097	147	0	147				
SPR 2098	147	0	147				
SUM 2098	147	0	147				
WIN 2098	147	0	147				
SPR 2099	147	0	147				
SUM 2099	147	0	147				
WIN 2099	147	0	147				
SPR 2100	147	0	147				
SUM 2100	147	0	147				
WIN 2100	147	0	147				
SPR 2101	147	0	147				
SUM 2101	147	0	147				
WIN 2101	147	0	147				
SPR 2102	147	0	147				
SUM 2102	147	0	147				
WIN 2102	147	0	147				
SPR 2103	147	0	147				
SUM 2103	147	0	147				
WIN 2103	147	0	147				
SPR 2104	147	0	147				
SUM 2104	147	0	147				
WIN 2104	147	0	147				
SPR 2105	147	0	147				
SUM 2105	147	0	147				
WIN 2105	147	0	147				
SPR 2106	147	0	147				
SUM 2106	147	0	147				
WIN 2106	147	0	147				
SPR 2107	147	0	147				
SUM 2107	147	0	147				
WIN 2107	147	0	147				
SPR 2108	147	0	147				
SUM 2108	147	0	147				
WIN 2108	147	0	147				
SPR 2109	147	0	147				
SUM 2109	147	0	147				
WIN 2109	147	0	147				
SPR 2110	147	0	147				
SUM 2110	147	0	147				
WIN 2110	147	0	147				
SPR 2111	147	0	147				
SUM 2111	147	0	147				
WIN 2111	147	0	147				

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

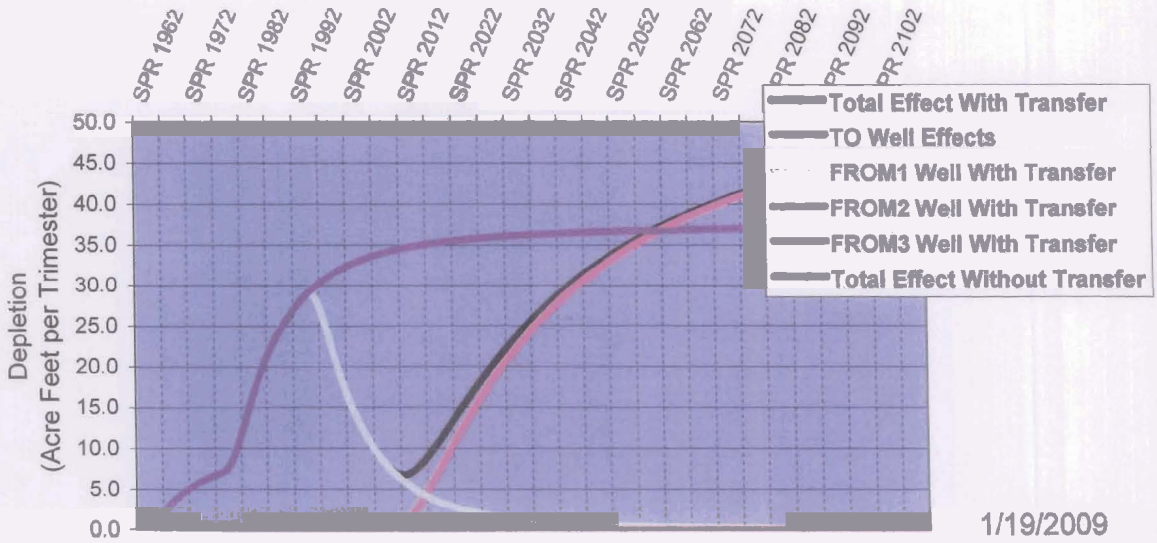


1/19/2009
Version 3.1

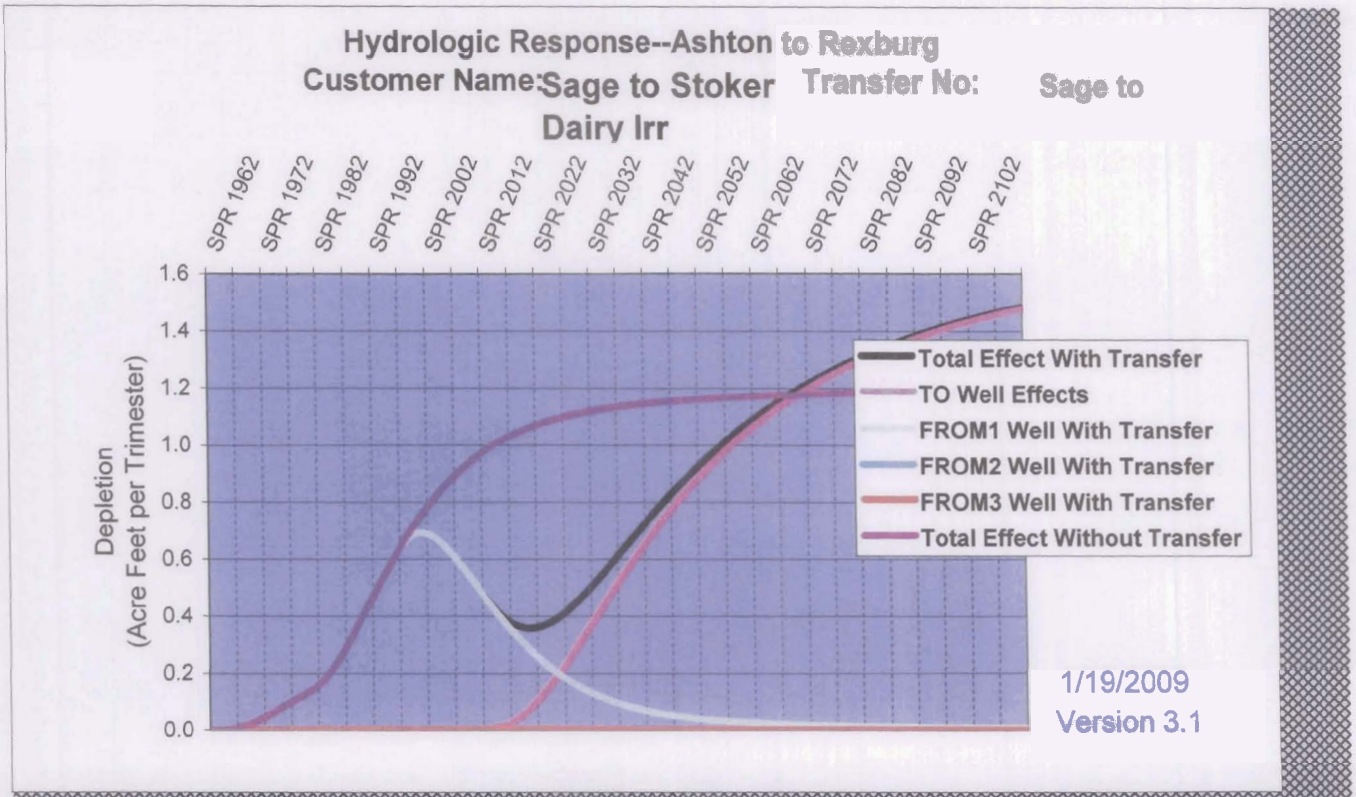
Customer Name: Sage to Stoker Dairy Irr **Transfer No:** Sage to

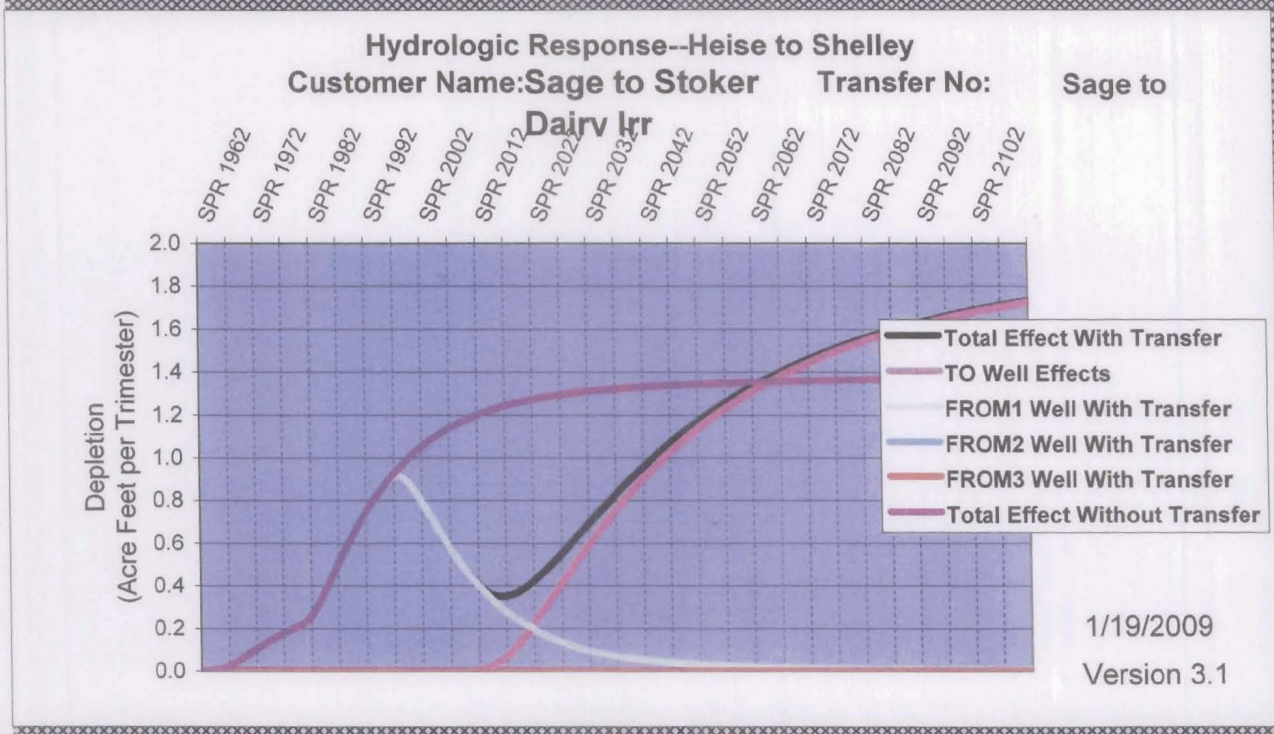
Hydrologic Response-- Near Blackfoot to Neeley

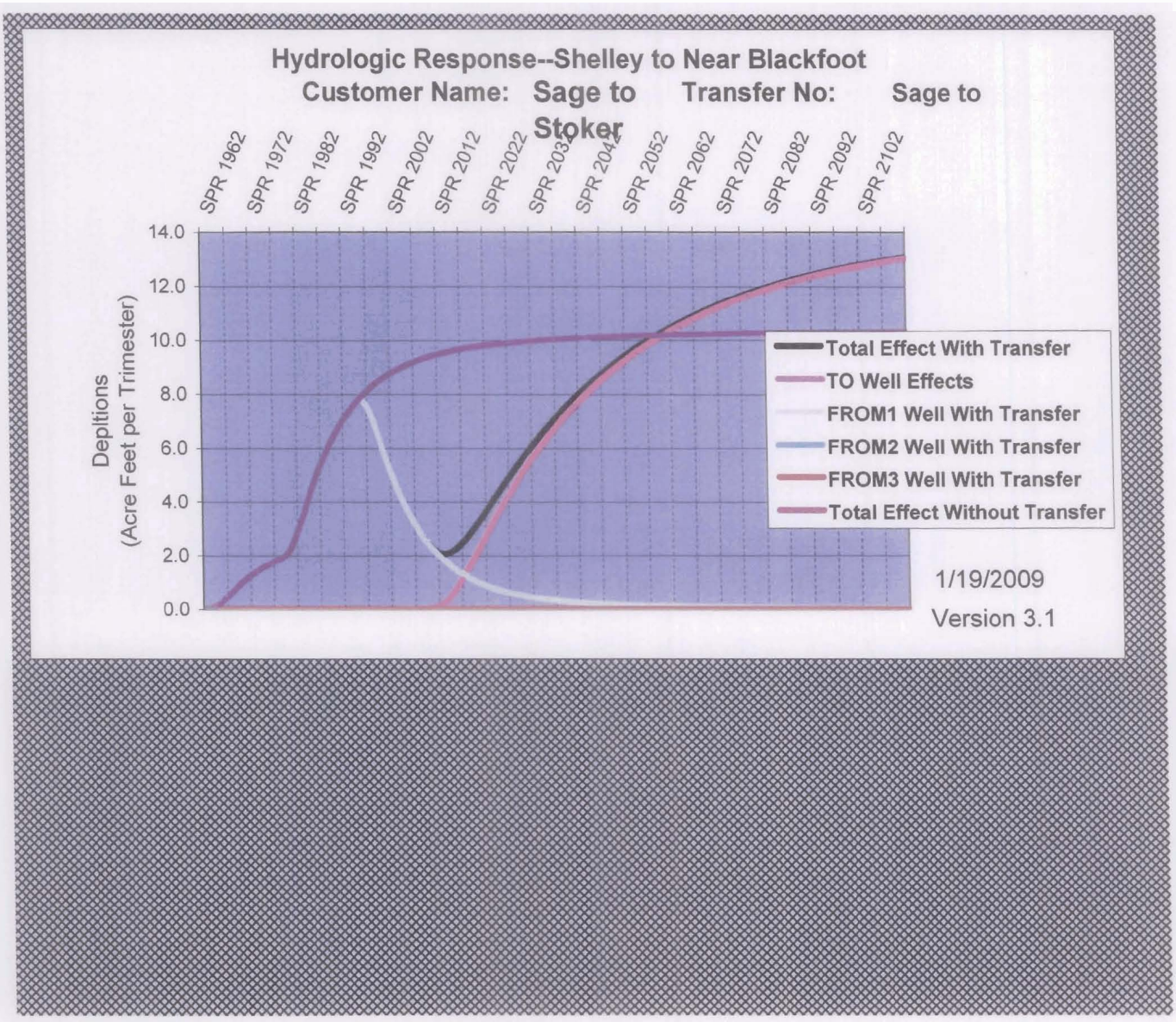
Customer Name: Sage to Stoker **Transfer No:** Sage to

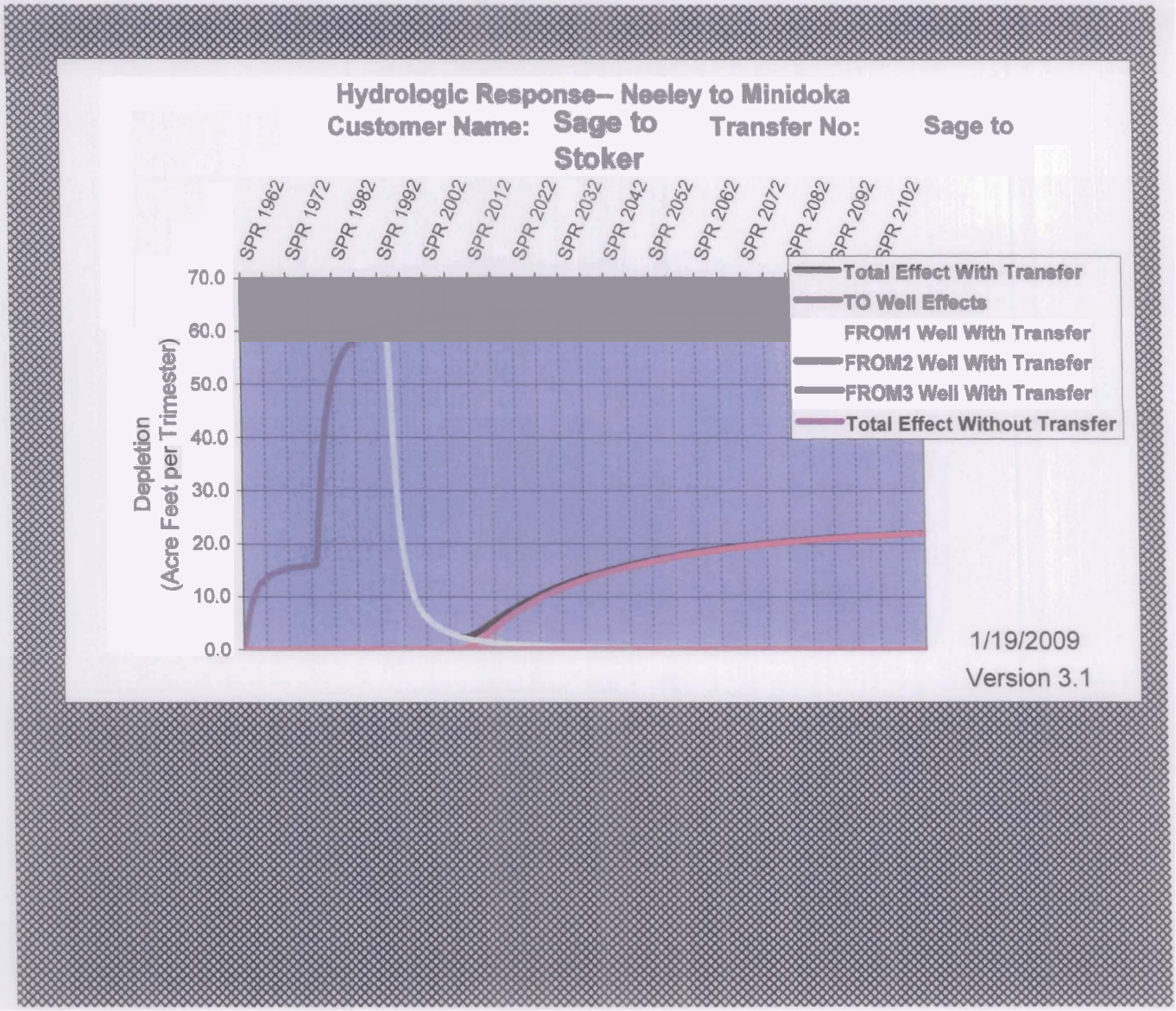


1/19/2009
Version 3.1


Hydrologic Response--Ashton to Rexburg
Customer Name:Sage to Stoker Dairy Irr
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

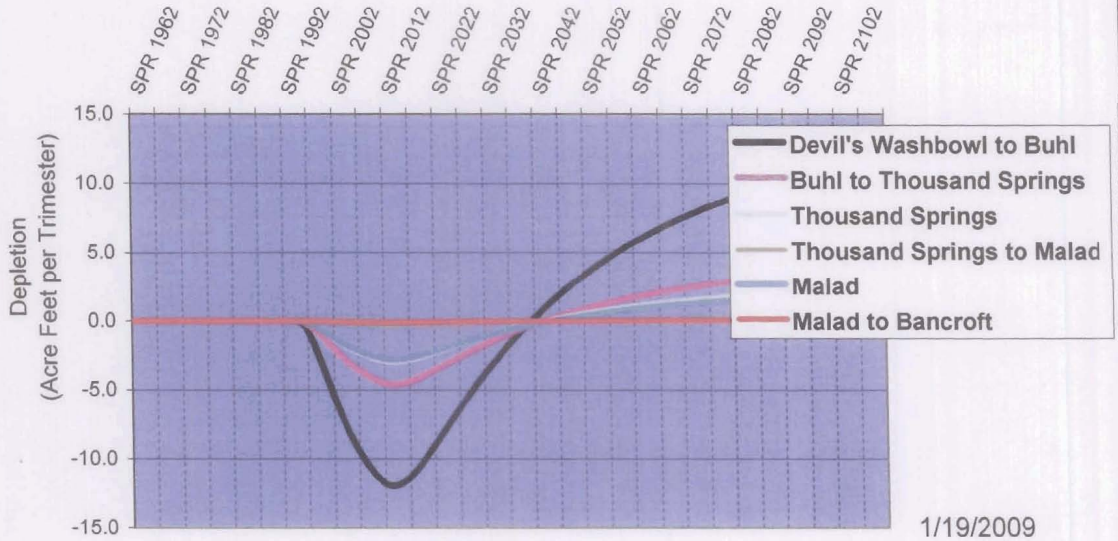

Hydrologic Response--Heise to Shelley
Customer Name:Sage to Stoker Dairy Irr
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage to Stoker Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

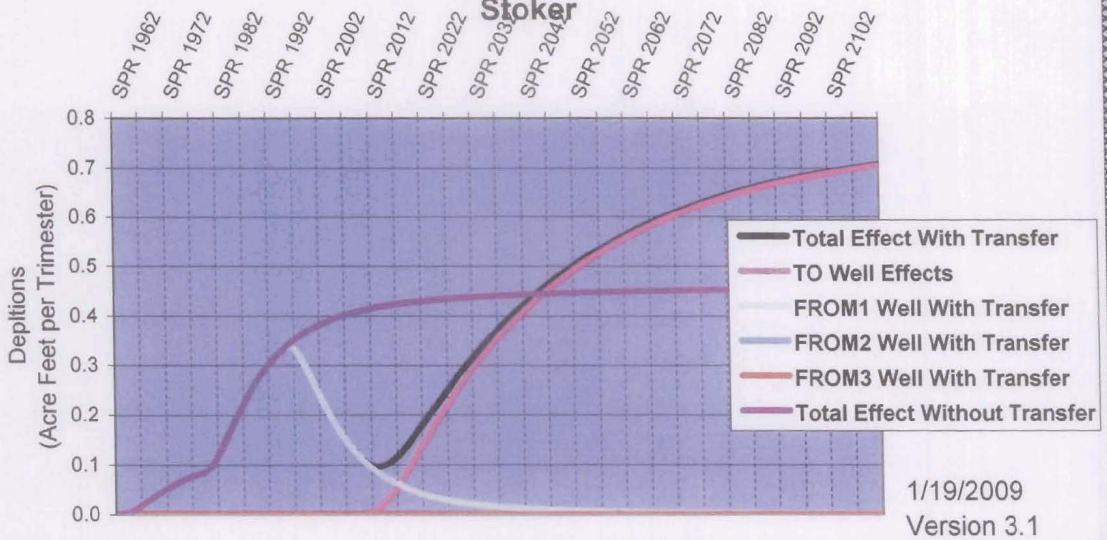


1/19/2009
Version 3.1

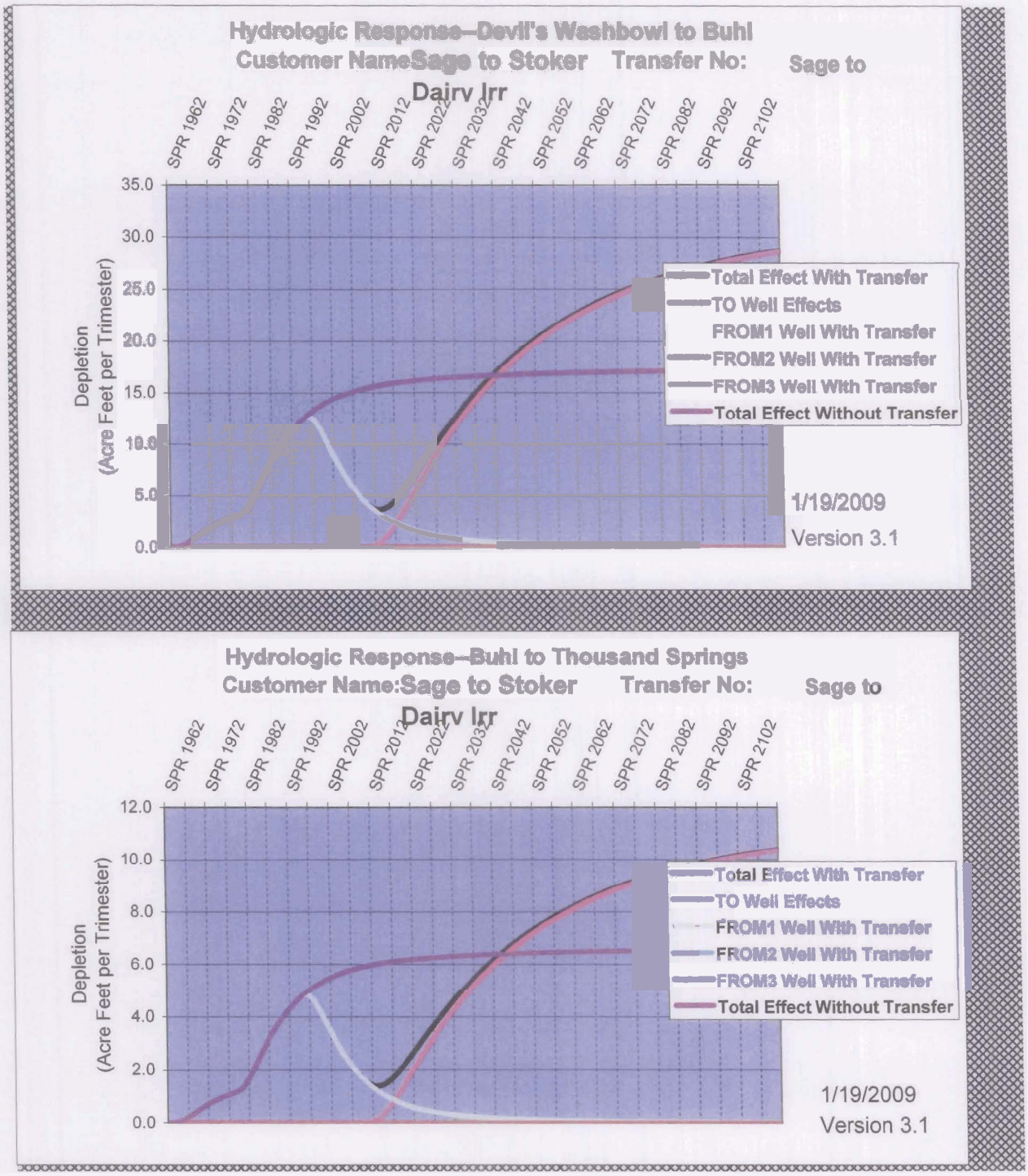
Customer Name: Sage to Stoker Dairy Irr **Transfer No: Sage to**

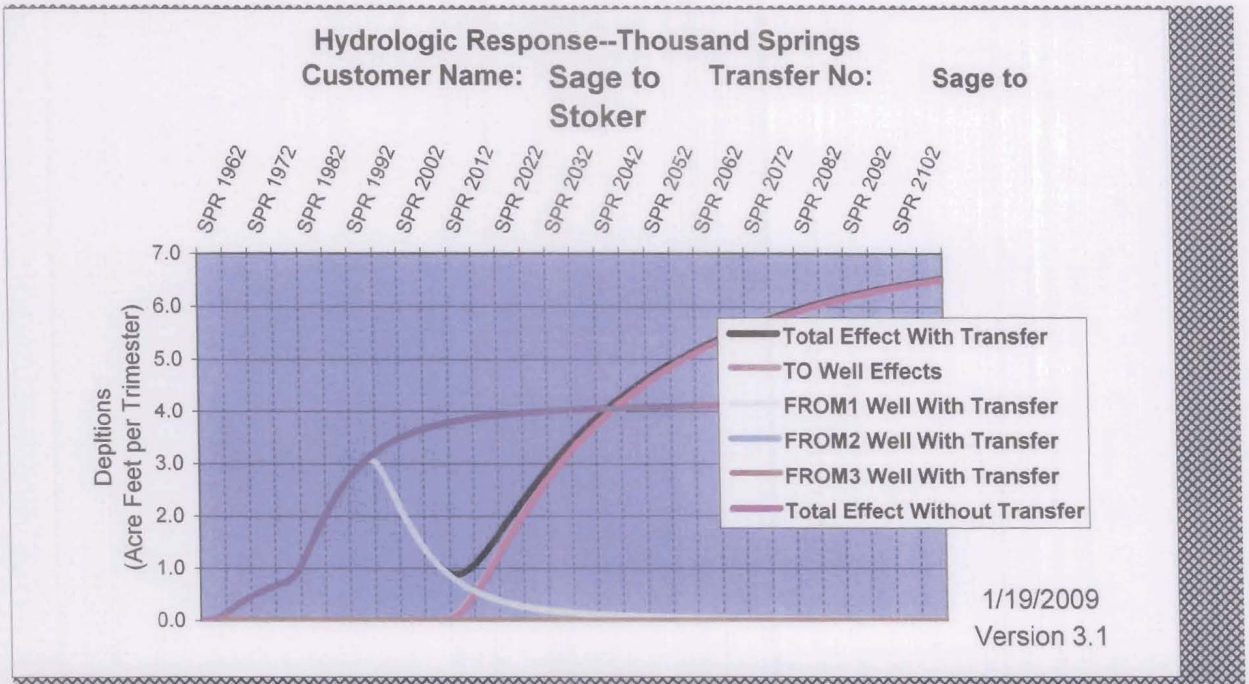
Hydrologic Response--Thousand Springs to Malad

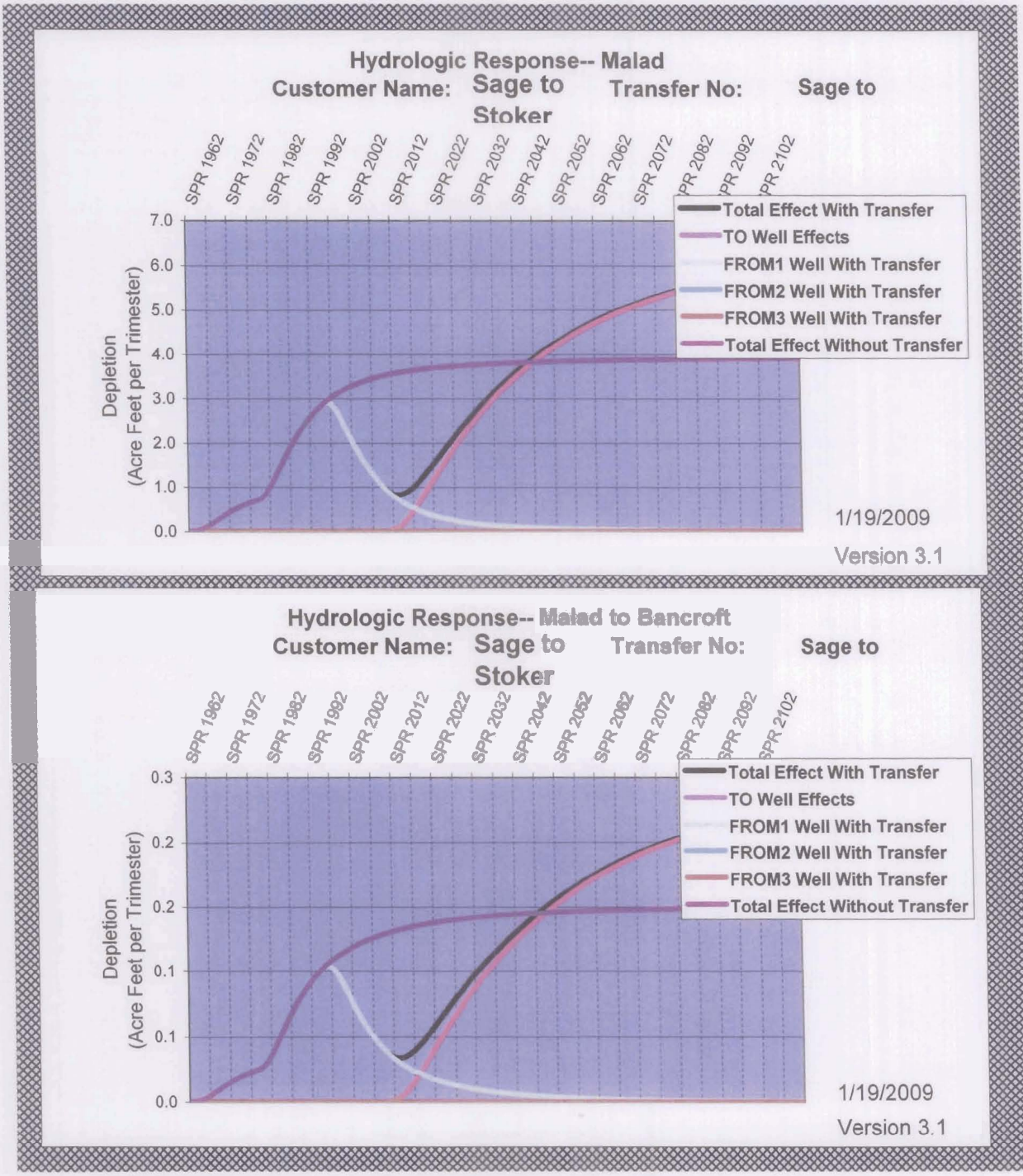
Customer Name: Sage to Stoker **Transfer No: Sage to**



1/19/2009
Version 3.1


Hydrologic Response--Devil's Washbowl to Buhl
Customer NameSage to Stoker Transfer No: Sage to Dairy Irr
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Depletion (Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1
Hydrologic Response--Buhl to Thousand Springs
Customer Name:Sage to Stoker Transfer No: Sage to Dairy Irr
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depletion (Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

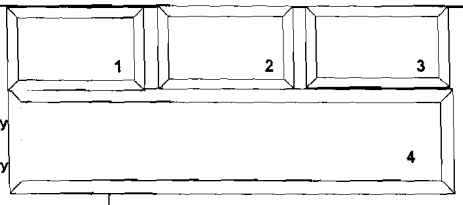

Hydrologic Response--Thousand Springs
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Malad
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1
Hydrologic Response-- Malad to Bancroft
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
0.3
0.2
0.2
0.1
0.1
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

ENHANCED GROUND-WATER RIGHTS TRANSFER SPREADSHEET

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Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON		TRANSFER NO:	Sage to Stoker Dairy
YEAR	1962	TRANSFER NAME:	Sage to Stoker Dairy
SEASON	SPRING		

ENTER CELL LOCATIONS:	'TO' CELL	'FROM1' CELL	'FROM2' CELL	'FROM3' CELL
ROW	93	91		
COLUMN	54	69		

TRIMESTER OF ACTIVITY	TO WELL Projected Use AF/TRIMESTER	FROM1 WELL With Transfer AF/TRIMESTER	FROM1 WELL Without Transfer AF/TRIMESTER	FROM2 WELL With Transfer AF/TRIMESTER	FROM2 WELL Without Transfer AF/TRIMESTER	FROM3 WELL With Transfer AF/TRIMESTER	FROM3 WELL Without Transfer AF/TRIMESTER
SPR 1962	0	40	40				
SUM 1962	0	40	40				
WIN 1962	0	40	40				
SPR 1963	0	40	40				
SUM 1963	0	40	40				
WIN 1963	0	40	40				
SPR 1964	0	40	40				
SUM 1964	0	40	40				
WIN 1964	0	40	40				
SPR 1965	0	40	40				
SUM 1965	0	40	40				
WIN 1965	0	40	40				
SPR 1966	0	40	40				
SUM 1966	0	40	40				
WIN 1966	0	40	40				
SPR 1967	0	40	40				
SUM 1967	0	40	40				
WIN 1967	0	40	40				
SPR 1968	0	40	40				
SUM 1968	0	40	40				
WIN 1968	0	40	40				
SPR 1969	0	40	40				
SUM 1969	0	40	40				
WIN 1969	0	40	40				
SPR 1970	0	40	40				
SUM 1970	0	40	40				
WIN 1970	0	40	40				
SPR 1971	0	40	40				
SUM 1971	0	40	40				
WIN 1971	0	40	40				
SPR 1972	0	40	40				
SUM 1972	0	40	40				
WIN 1972	0	40	40				
SPR 1973	0	40	40				
SUM 1973	0	40	40				
WIN 1973	0	40	40				
SPR 1974	0	40	40				
SUM 1974	0	40	40				
WIN 1974	0	40	40				
SPR 1975	0	40	40				
SUM 1975	0	40	40				
WIN 1975	0	40	40				
SPR 1976	0	40	40				
SUM 1976	0	40	40				
WIN 1976	0	40	40				
SPR 1977	0	40	40				
SUM 1977	0	40	40				
WIN 1977	0	40	40				
SPR 1978	0	153	153				
SUM 1978	0	153	153				
WIN 1978	0	153	153				
SPR 1979	0	153	153				
SUM 1979	0	153	153				
WIN 1979	0	153	153				
SPR 1980	0	153	153				
SUM 1980	0	153	153				
WIN 1980	0	153	153				
SPR 1981	0	153	153				
SUM 1981	0	153	153				
WIN 1981	0	153	153				
SPR 1982	0	153	153				
SUM 1982	0	153	153				
WIN 1982	0	153	153				
SPR 1983	0	153	153				
SUM 1983	0	153	153				
WIN 1983	0	153	153				
SPR 1984	0	153	153				
SUM 1984	0	153	153				
WIN 1984	0	153	153				
SPR 1985	0	153	153				
SUM 1985	0	153	153				
WIN 1985	0	153	153				
SPR 1986	0	153	153				
SUM 1986	0	153	153				
WIN 1986	0	153	153				

Entering Dates

Enter the starting year and season for your simulation. The starti
of the analysis period. (Spring is Mar, Apr, May and Jun.
Summer is Jul, Aug, Sep and Oct. Winter is Nov, Dec, Jan and F
Once you have entered the starting date, push the "UPDATE DA
The date only needs to be updated once, unless the desired time
Modifying the date does not automatically adjust the location of th

Entering Well Locations

Enter the row and column location for the 'TO' well in spreadshee
Enter the row and column location for the 'FROM1' well in spread
Enter the row and column location for the 'FROM2' well in spread
Enter the row and column location for the 'FROM3' well in spread
If the 'FROM2' well is not to be modeled, the entered row and col
If the 'FROM3' well is not to be modeled, the entered row and col
The 'FROM3' well cannot be used if the 'FROM2' well is not being

Running the Model

Once the model cells have been specified for the 'FROM' and 'TO
the 'RUN MODEL' button to generate the response functions. Th
needs to be re-run if the locations of the 'FROM' and 'TO' wells ar

Getting the Model Output

Once the model has been run, push the 'GET OUTPUT' button to
model output. This prepares the model output for use for calculat

Entering water use data

All water use should be entered in units of acre-feet per four mon
for instructions on multiple water rights with different priority dates

Entering 'TO' Well Projected Water Use

Enter the projected water use for the 'TO' Well in Column B. 'TO'
should start in the trimester (4-month period) in which the transfe

Entering 'FROM' Well 'With Transfer' Use

Enter the 'With Transfer' water use for the first 'FROM' Well in Co
the second 'FROM' well in Column E, and for the third 'FROM' We
'With Transfer' water use should reflect historical and projected a
should cease or be reduced at the time of the water right transfer

Entering 'FROM' Well 'Without Transfer' Use

The 'Without Transfer' Use for the 'FROM' wells should include hi
The projected use should reflect expected pumpage from that we
Enter the 'Without Transfer' water use for the first 'FROM' Well in
for the second 'FROM' well in Column F, and for the third 'FROM'
Prior to the expected date of transfer, the 'With Transfer' use sho

If only one 'FROM' well is to be represented, pumpage in columns
If only two 'FROM' wells are being represented, pumpage in Colu
Projected water use in the 'TO' well and the 'FROM' wells will be
effect to the river reaches caused by the water right transfer. (Se

Calculating Effect of the Transfer on River Gains and Losses

After all of the above steps have been completed, the effects of th
of the eleven hydraulically connected reaches of the Snake River
CALCULATE EFFECTS' button. This will result in a multiplicatio
the model runs) times the water use rates entered in the table pro
After the multiplication has been performed, the spreadsheet will
worksheet. Here one graph is provided showing the effect for eac
illustrates the net effects on all 11 reaches. Results are also pres
EFFECTS worksheet. See the Users Manual for more informatio

SPR 1987	0	153	153
SUM 1987	0	153	153
WIN 1987	0	153	153
SPR 1988	0	153	153
SUM 1988	0	153	153
WIN 1988	0	153	153
SPR 1989	0	153	153
SUM 1989	0	153	153
WIN 1989	0	153	153
SPR 1990	0	153	153
SUM 1990	0	153	153
WIN 1990	0	153	153
SPR 1991	0	153	153
SUM 1991	0	153	153
WIN 1991	0	153	153
SPR 1992	0	153	153
SUM 1992	0	153	153
WIN 1992	0	153	153
SPR 1993	0	153	153
SUM 1993	0	153	153
WIN 1993	0	153	153
SPR 1994	0	0	153
SUM 1994	0	0	153
WIN 1994	0	0	153
SPR 1995	0	0	153
SUM 1995	0	0	153
WIN 1995	0	0	153
SPR 1996	0	0	153
SUM 1996	0	0	153
WIN 1996	0	0	153
SPR 1997	0	0	153
SUM 1997	0	0	153
WIN 1997	0	0	153
SPR 1998	0	0	153
SUM 1998	0	0	153
WIN 1998	0	0	153
SPR 1999	0	0	153
SUM 1999	0	0	153
WIN 1999	0	0	153
SPR 2000	0	0	153
SUM 2000	0	0	153
WIN 2000	0	0	153
SPR 2001	0	0	153
SUM 2001	0	0	153
WIN 2001	0	0	153
SPR 2002	0	0	153
SUM 2002	0	0	153
WIN 2002	0	0	153
SPR 2003	0	0	153
SUM 2003	0	0	153
WIN 2003	0	0	153
SPR 2004	0	0	153
SUM 2004	0	0	153
WIN 2004	0	0	153
SPR 2005	0	0	153
SUM 2005	0	0	153
WIN 2005	0	0	153
SPR 2006	0	0	153
SUM 2006	0	0	153
WIN 2006	0	0	153
SPR 2007	0	0	153
SUM 2007	0	0	153
WIN 2007	0	0	153
SPR 2008	153	0	153
SUM 2008	153	0	153
WIN 2008	153	0	153
SPR 2009	153	0	153
SUM 2009	153	0	153
WIN 2009	153	0	153
SPR 2010	153	0	153
SUM 2010	153	0	153
WIN 2010	153	0	153
SPR 2011	153	0	153
SUM 2011	153	0	153
WIN 2011	153	0	153
SPR 2012	153	0	153
SUM 2012	153	0	153
WIN 2012	153	0	153
SPR 2013	153	0	153
SUM 2013	153	0	153
WIN 2013	153	0	153
SPR 2014	153	0	153
SUM 2014	153	0	153
WIN 2014	153	0	153
SPR 2015	153	0	153
SUM 2015	153	0	153
WIN 2015	153	0	153
SPR 2016	153	0	153
SUM 2016	153	0	153
WIN 2016	153	0	153
SPR 2017	153	0	153
SUM 2017	153	0	153
WIN 2017	153	0	153
SPR 2018	153	0	153
SUM 2018	153	0	153
WIN 2018	153	0	153
SPR 2019	153	0	153
SUM 2019	153	0	153
WIN 2019	153	0	153
SPR 2020	153	0	153
SUM 2020	153	0	153
WIN 2020	153	0	153
SPR 2021	153	0	153
SUM 2021	153	0	153
WIN 2021	153	0	153
SPR 2022	153	0	153
SUM 2022	153	0	153
WIN 2022	153	0	153
SPR 2023	153	0	153
SUM 2023	153	0	153

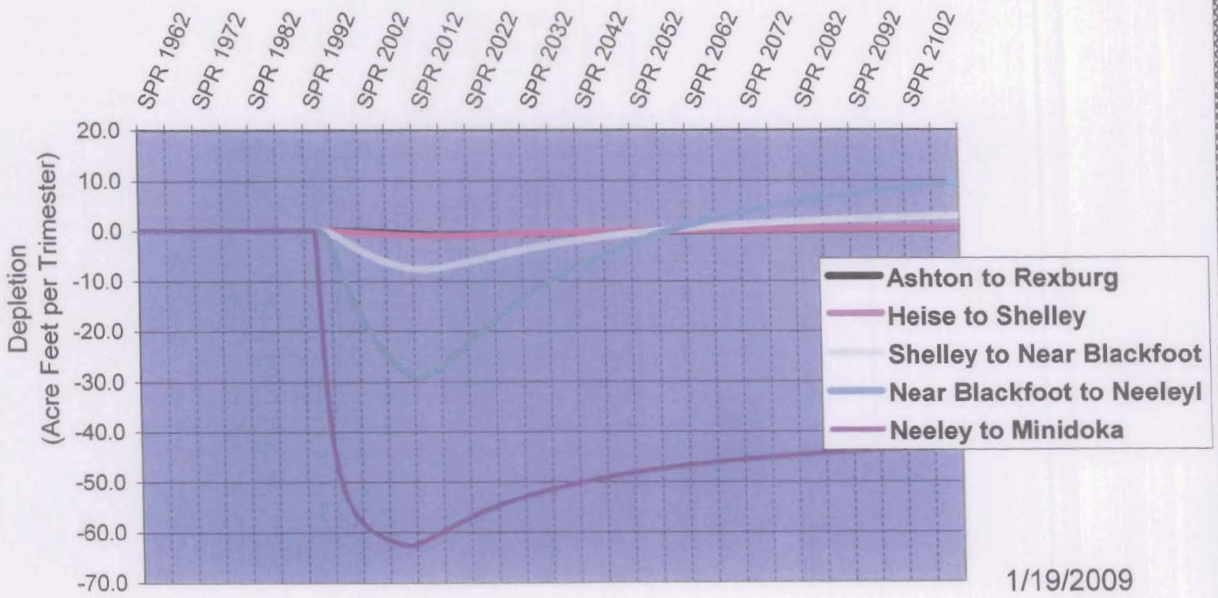
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SPR 2024	153	0	153
SUM 2024	153	0	153
WIN 2024	153	0	153
SPR 2025	153	0	153
SUM 2025	153	0	153
WIN 2025	153	0	153
SPR 2026	153	0	153
SUM 2026	153	0	153
WIN 2026	153	0	153
SPR 2027	153	0	153
SUM 2027	153	0	153
WIN 2027	153	0	153
SPR 2028	153	0	153
SUM 2028	153	0	153
WIN 2028	153	0	153
SPR 2029	153	0	153
SUM 2029	153	0	153
WIN 2029	153	0	153
SPR 2030	153	0	153
SUM 2030	153	0	153
WIN 2030	153	0	153
SPR 2031	153	0	153
SUM 2031	153	0	153
WIN 2031	153	0	153
SPR 2032	153	0	153
SUM 2032	153	0	153
WIN 2032	153	0	153
SPR 2033	153	0	153
SUM 2033	153	0	153
WIN 2033	153	0	153
SPR 2034	153	0	153
SUM 2034	153	0	153
WIN 2034	153	0	153
SPR 2035	153	0	153
SUM 2035	153	0	153
WIN 2035	153	0	153
SPR 2036	153	0	153
SUM 2036	153	0	153
WIN 2036	153	0	153
SPR 2037	153	0	153
SUM 2037	153	0	153
WIN 2037	153	0	153
SPR 2038	153	0	153
SUM 2038	153	0	153
WIN 2038	153	0	153
SPR 2039	153	0	153
SUM 2039	153	0	153
WIN 2039	153	0	153
SPR 2040	153	0	153
SUM 2040	153	0	153
WIN 2040	153	0	153
SPR 2041	153	0	153
SUM 2041	153	0	153
WIN 2041	153	0	153
SPR 2042	153	0	153
SUM 2042	153	0	153
WIN 2042	153	0	153
SPR 2043	153	0	153
SUM 2043	153	0	153
WIN 2043	153	0	153
SPR 2044	153	0	153
SUM 2044	153	0	153
WIN 2044	153	0	153
SPR 2045	153	0	153
SUM 2045	153	0	153
WIN 2045	153	0	153
SPR 2046	153	0	153
SUM 2046	153	0	153
WIN 2046	153	0	153
SPR 2047	153	0	153
SUM 2047	153	0	153
WIN 2047	153	0	153
SPR 2048	153	0	153
SUM 2048	153	0	153
WIN 2048	153	0	153
SPR 2049	153	0	153
SUM 2049	153	0	153
WIN 2049	153	0	153
SPR 2050	153	0	153
SUM 2050	153	0	153
WIN 2050	153	0	153
SPR 2051	153	0	153
SUM 2051	153	0	153
WIN 2051	153	0	153
SPR 2052	153	0	153
SUM 2052	153	0	153
WIN 2052	153	0	153
SPR 2053	153	0	153
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WIN 2053	153	0	153
SPR 2054	153	0	153
SUM 2054	153	0	153
WIN 2054	153	0	153
SPR 2055	153	0	153
SUM 2055	153	0	153
WIN 2055	153	0	153
SPR 2056	153	0	153
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WIN 2056	153	0	153
SPR 2057	153	0	153
SUM 2057	153	0	153
WIN 2057	153	0	153
SPR 2058	153	0	153
SUM 2058	153	0	153
WIN 2058	153	0	153
SPR 2059	153	0	153
SUM 2059	153	0	153
WIN 2059	153	0	153
SPR 2060	153	0	153

SUM 2060	153	0	153
WIN 2060	153	0	153
SPR 2061	153	0	153
SUM 2061	153	0	153
WIN 2061	153	0	153
SPR 2062	153	0	153
SUM 2062	153	0	153
WIN 2062	153	0	153
SPR 2063	153	0	153
SUM 2063	153	0	153
WIN 2063	153	0	153
SPR 2064	153	0	153
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WIN 2064	153	0	153
SPR 2065	153	0	153
SUM 2065	153	0	153
WIN 2065	153	0	153
SPR 2066	153	0	153
SUM 2066	153	0	153
WIN 2066	153	0	153
SPR 2067	153	0	153
SUM 2067	153	0	153
WIN 2067	153	0	153
SPR 2068	153	0	153
SUM 2068	153	0	153
WIN 2068	153	0	153
SPR 2069	153	0	153
SUM 2069	153	0	153
WIN 2069	153	0	153
SPR 2070	153	0	153
SUM 2070	153	0	153
WIN 2070	153	0	153
SPR 2071	153	0	153
SUM 2071	153	0	153
WIN 2071	153	0	153
SPR 2072	153	0	153
SUM 2072	153	0	153
WIN 2072	153	0	153
SPR 2073	153	0	153
SUM 2073	153	0	153
WIN 2073	153	0	153
SPR 2074	153	0	153
SUM 2074	153	0	153
WIN 2074	153	0	153
SPR 2075	153	0	153
SUM 2075	153	0	153
WIN 2075	153	0	153
SPR 2076	153	0	153
SUM 2076	153	0	153
WIN 2076	153	0	153
SPR 2077	153	0	153
SUM 2077	153	0	153
WIN 2077	153	0	153
SPR 2078	153	0	153
SUM 2078	153	0	153
WIN 2078	153	0	153
SPR 2079	153	0	153
SUM 2079	153	0	153
WIN 2079	153	0	153
SPR 2080	153	0	153
SUM 2080	153	0	153
WIN 2080	153	0	153
SPR 2081	153	0	153
SUM 2081	153	0	153
WIN 2081	153	0	153
SPR 2082	153	0	153
SUM 2082	153	0	153
WIN 2082	153	0	153
SPR 2083	153	0	153
SUM 2083	153	0	153
WIN 2083	153	0	153
SPR 2084	153	0	153
SUM 2084	153	0	153
WIN 2084	153	0	153
SPR 2085	153	0	153
SUM 2085	153	0	153
WIN 2085	153	0	153
SPR 2086	153	0	153
SUM 2086	153	0	153
WIN 2086	153	0	153
SPR 2087	153	0	153
SUM 2087	153	0	153
WIN 2087	153	0	153
SPR 2088	153	0	153
SUM 2088	153	0	153
WIN 2088	153	0	153
SPR 2089	153	0	153
SUM 2089	153	0	153
WIN 2089	153	0	153
SPR 2090	153	0	153
SUM 2090	153	0	153
WIN 2090	153	0	153
SPR 2091	153	0	153
SUM 2091	153	0	153
WIN 2091	153	0	153
SPR 2092	153	0	153
SUM 2092	153	0	153
WIN 2092	153	0	153
SPR 2093	153	0	153
SUM 2093	153	0	153
WIN 2093	153	0	153
SPR 2094	153	0	153
SUM 2094	153	0	153
WIN 2094	153	0	153
SPR 2095	153	0	153
SUM 2095	153	0	153
WIN 2095	153	0	153
SPR 2096	153	0	153
SUM 2096	153	0	153
WIN 2096	153	0	153

SPR 2097	153	0	153
SUM 2097	153	0	153
WIN 2097	153	0	153
SPR 2098	153	0	153
SUM 2098	153	0	153
WIN 2098	153	0	153
SPR 2099	153	0	153
SUM 2099	153	0	153
WIN 2099	153	0	153
SPR 2100	153	0	153
SUM 2100	153	0	153
WIN 2100	153	0	153
SPR 2101	153	0	153
SUM 2101	153	0	153
WIN 2101	153	0	153
SPR 2102	153	0	153
SUM 2102	153	0	153
WIN 2102	153	0	153
SPR 2103	153	0	153
SUM 2103	153	0	153
WIN 2103	153	0	153
SPR 2104	153	0	153
SUM 2104	153	0	153
WIN 2104	153	0	153
SPR 2105	153	0	153
SUM 2105	153	0	153
WIN 2105	153	0	153
SPR 2106	153	0	153
SUM 2106	153	0	153
WIN 2106	153	0	153
SPR 2107	153	0	153
SUM 2107	153	0	153
WIN 2107	153	0	153
SPR 2108	153	0	153
SUM 2108	153	0	153
WIN 2108	153	0	153
SPR 2109	153	0	153
SUM 2109	153	0	153
WIN 2109	153	0	153
SPR 2110	153	0	153
SUM 2110	153	0	153
WIN 2110	153	0	153
SPR 2111	153	0	153
SUM 2111	153	0	153
WIN 2111	153	0	153

Net Transfer Effect Above Milner

(Total Effect With Transfer - Total Effect Without Transfer)

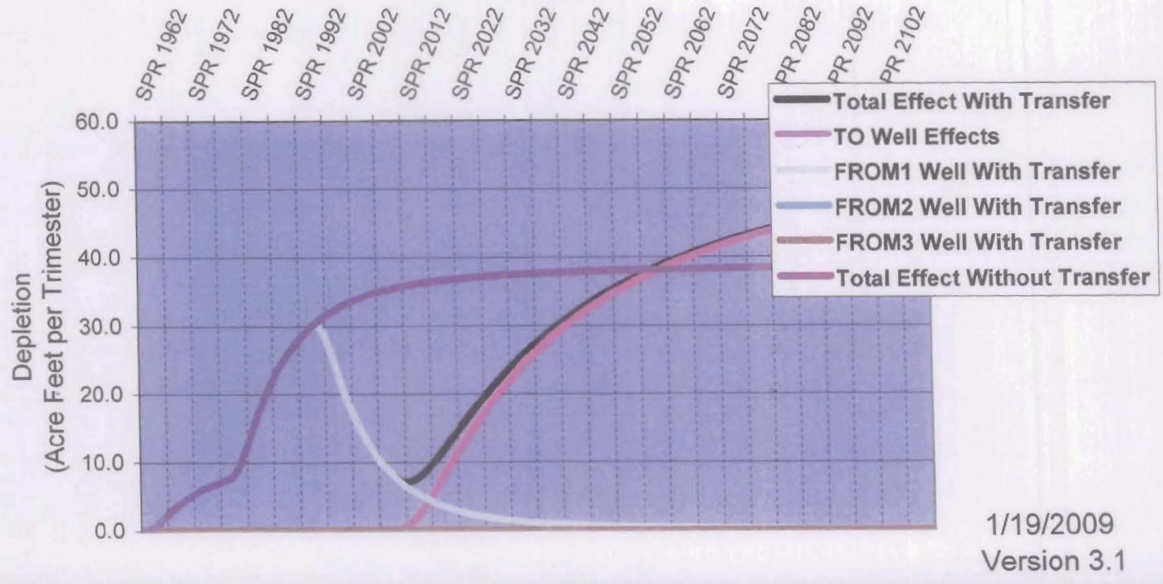


1/19/2009
Version 3.1

Customer Name: Sage to Stoker Dairy **Transfer No: Sage to**

Hydrologic Response-- Near Blackfoot to Neeley

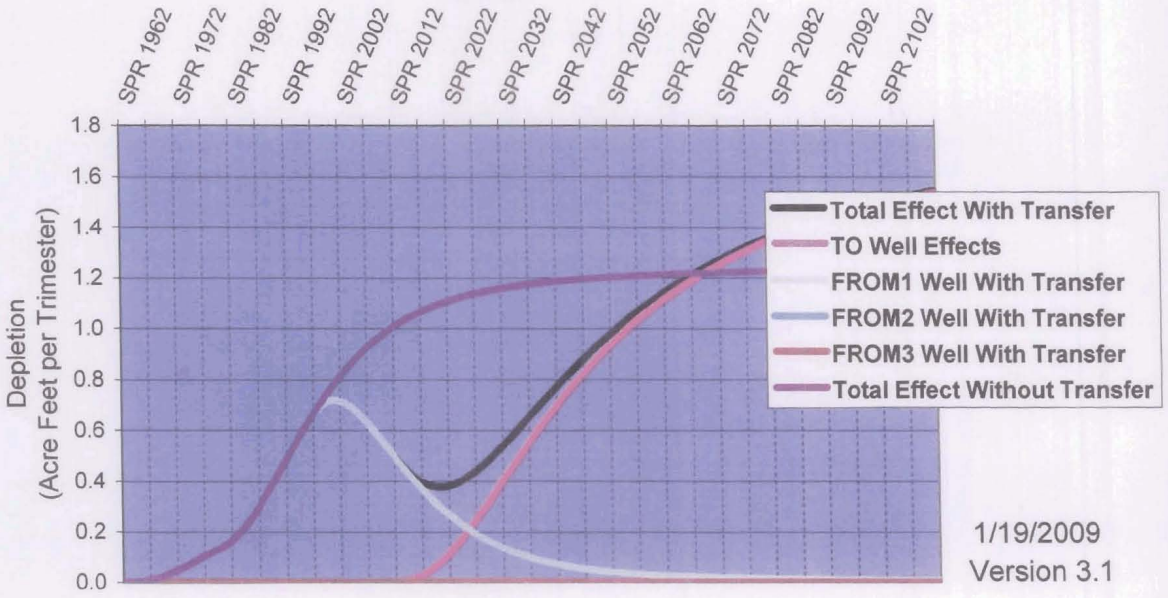
Customer Name: Sage to Stoker **Transfer No: Sage to**



1/19/2009
Version 3.1

Hydrologic Response--Ashton to Rexburg

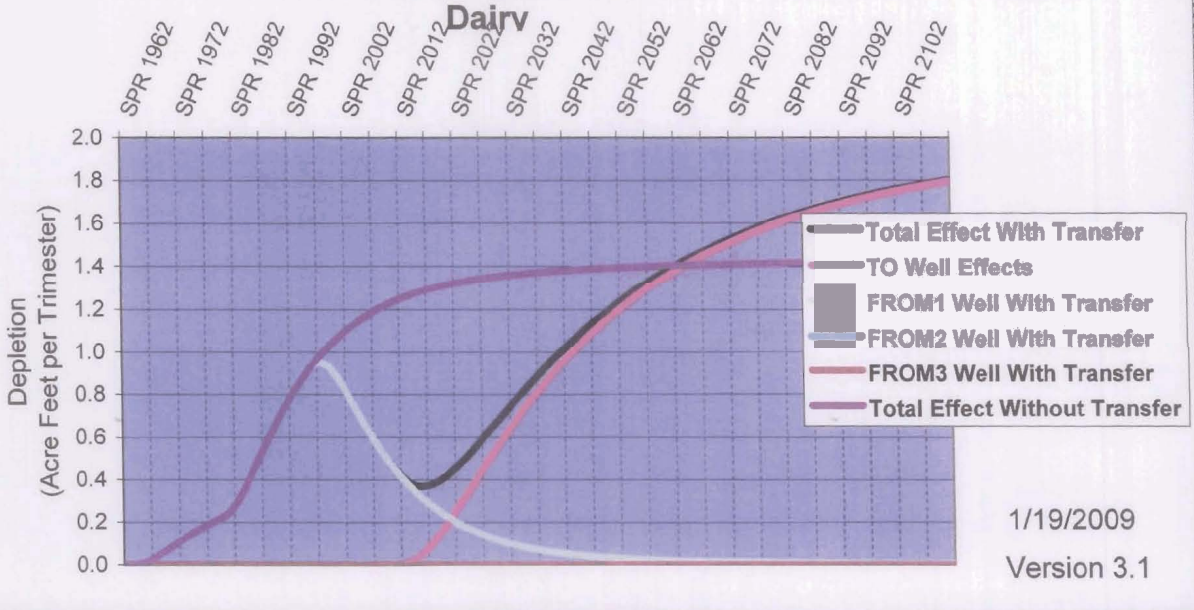
Customer Name: Sage to Stoker Dairy Transfer No: Sage to



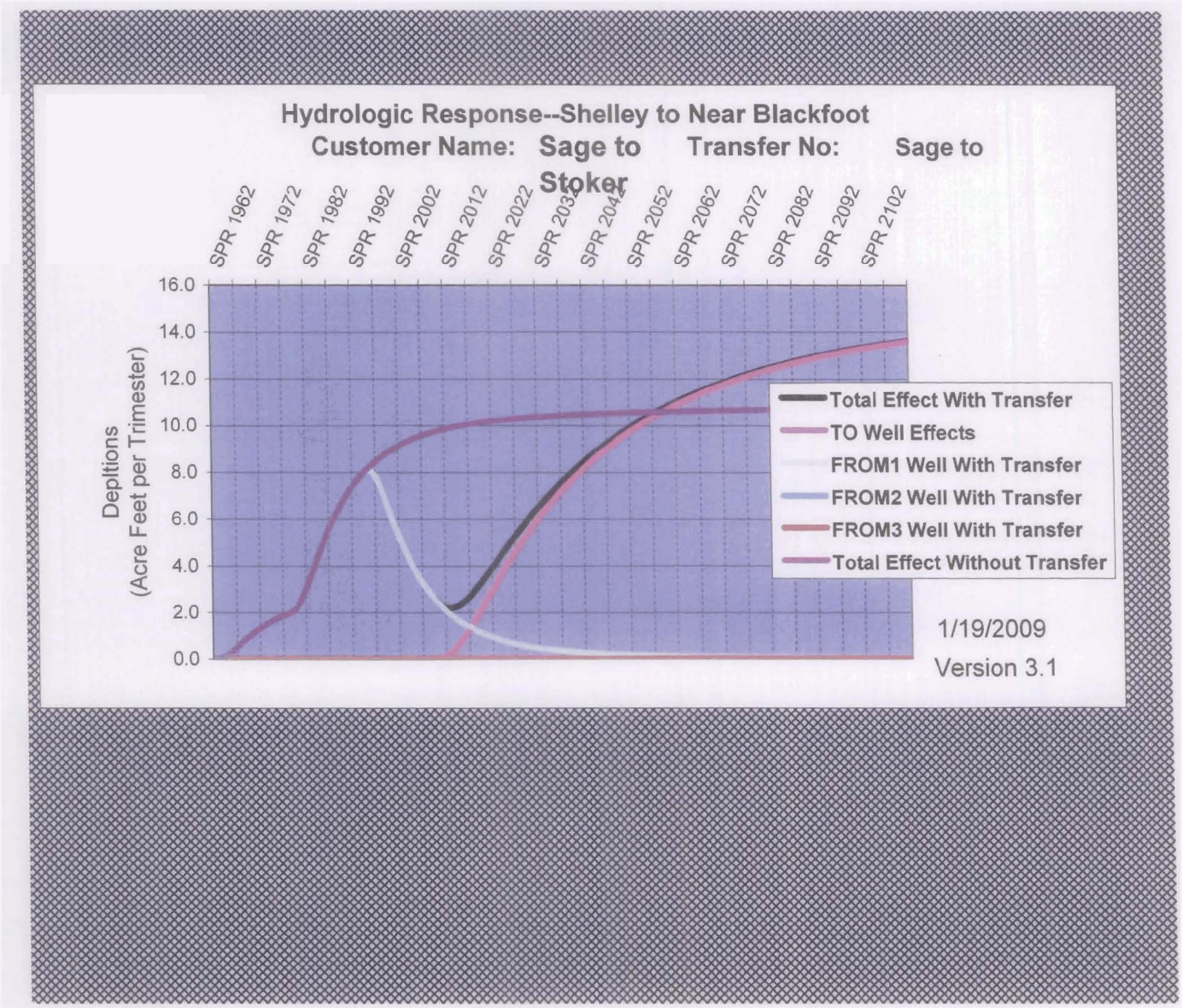
1/19/2009
Version 3.1

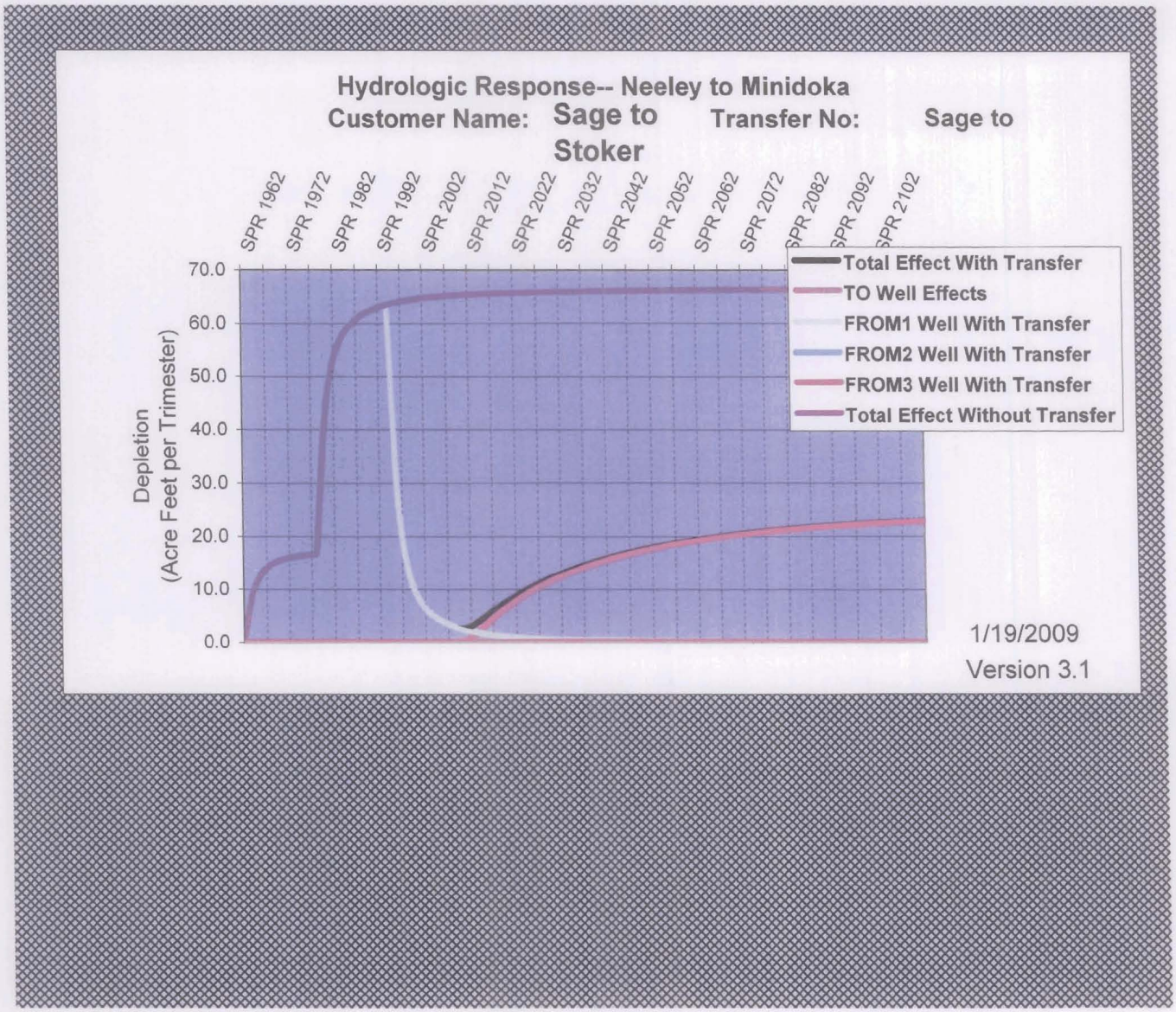
Hydrologic Response--Heise to Shelley

Customer Name: Sage to Stoker Dairy Transfer No: Sage to



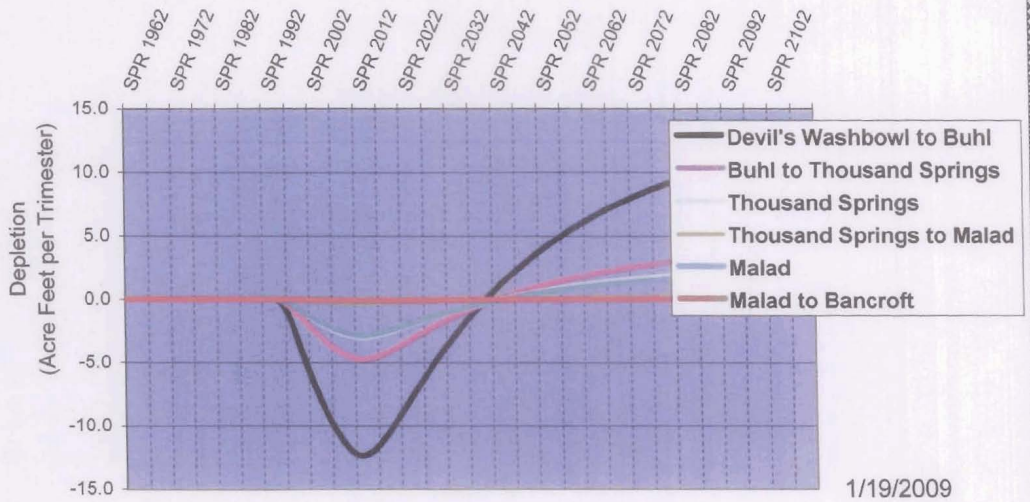
1/19/2009
Version 3.1


Hydrologic Response--Shelley to Near Blackfoot
Customer Name: Sage to Stoker Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response-- Neeley to Minidoka
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Net Transfer Effect Below Milner

(Total Effect With Transfer - Total Effect Without Transfer)

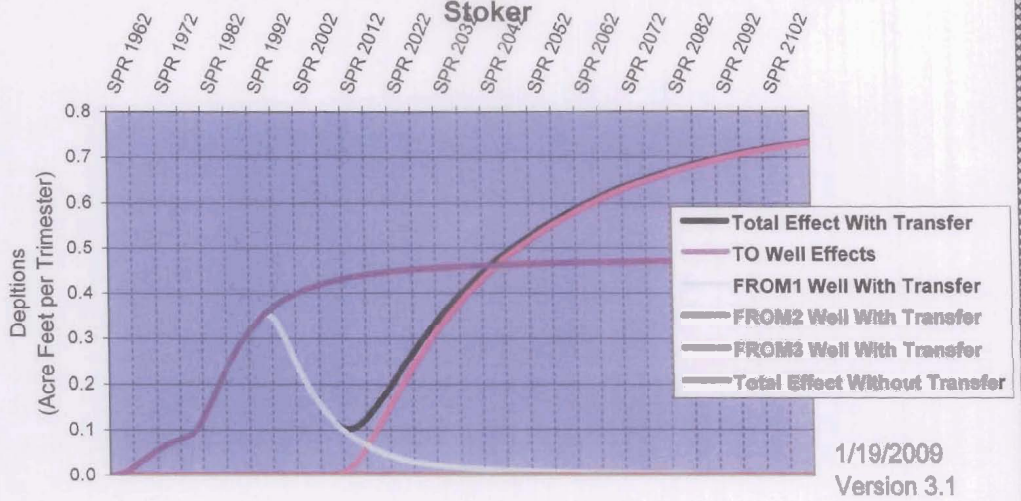


1/19/2009
Version 3.1

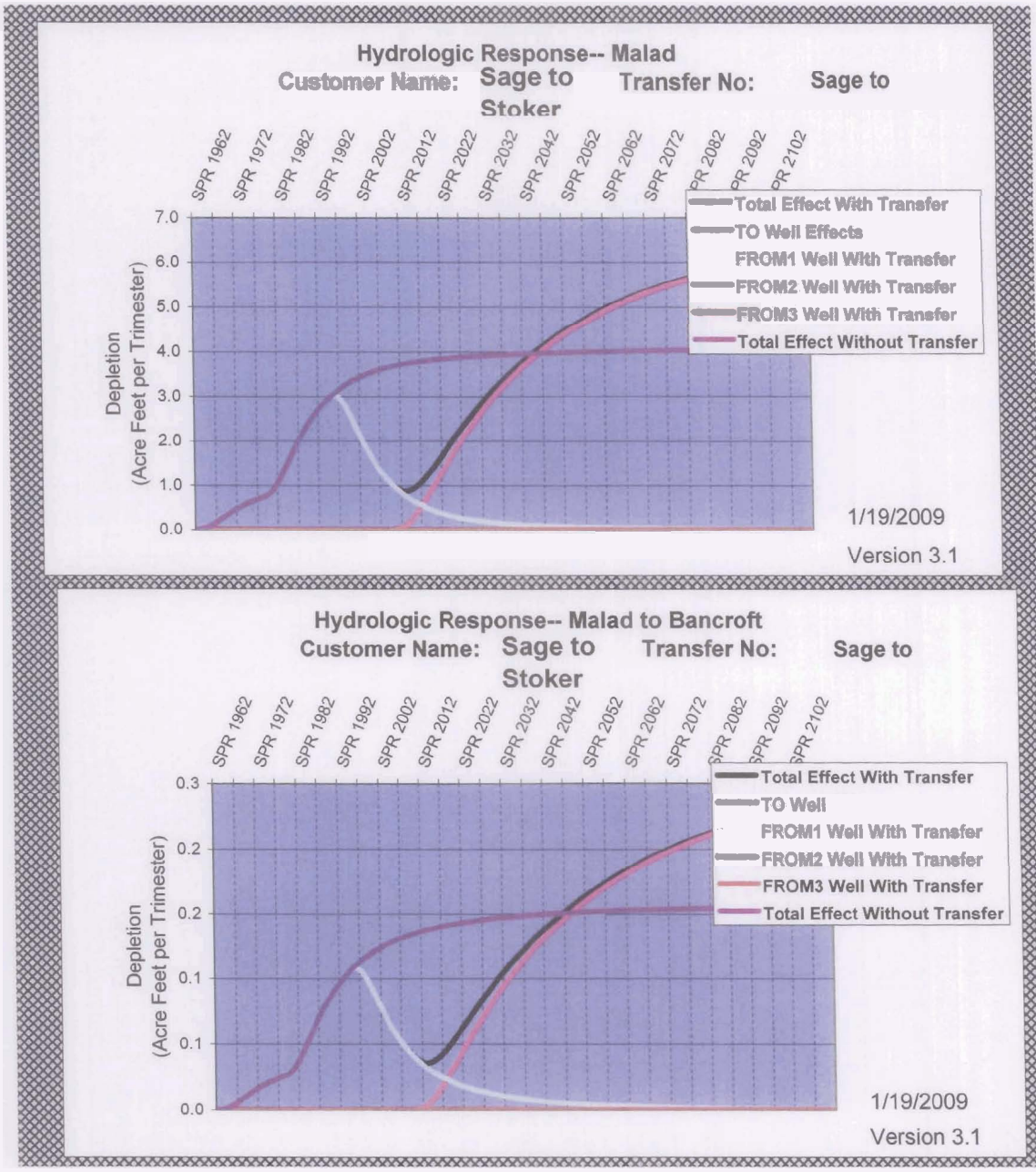
Customer Name: Sage to Stoker Dairy **Transfer No:** Sage to

Hydrologic Response--Thousand Springs to Malad

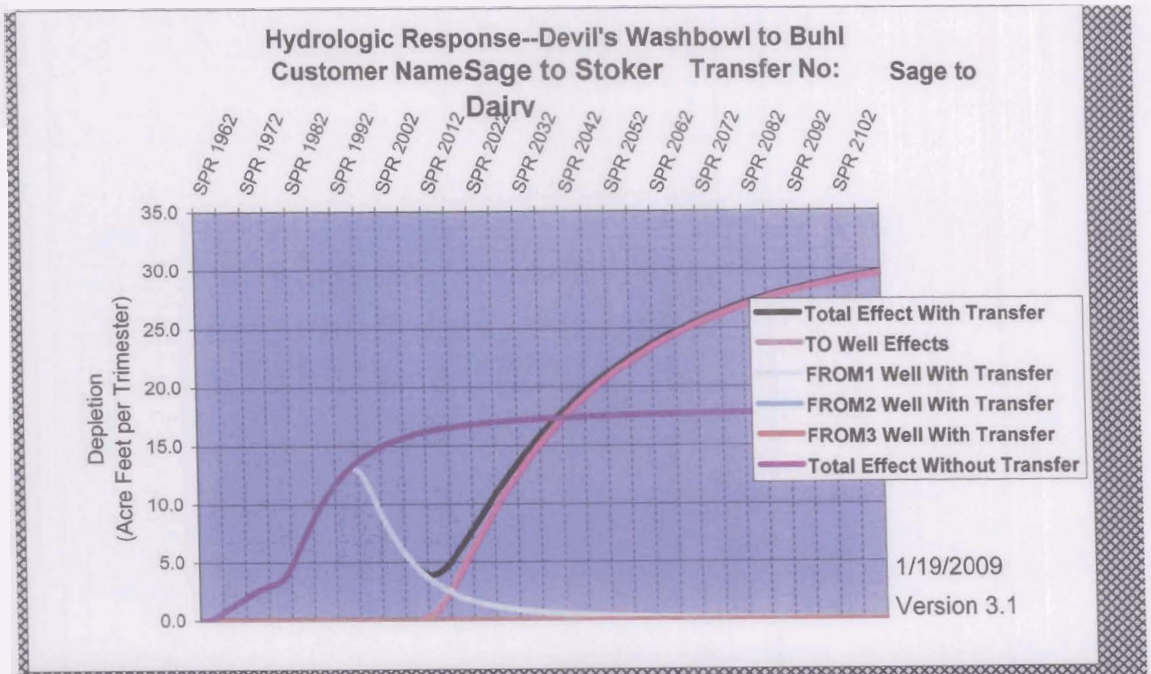
Customer Name: Sage to Stoker **Transfer No:** Sage to

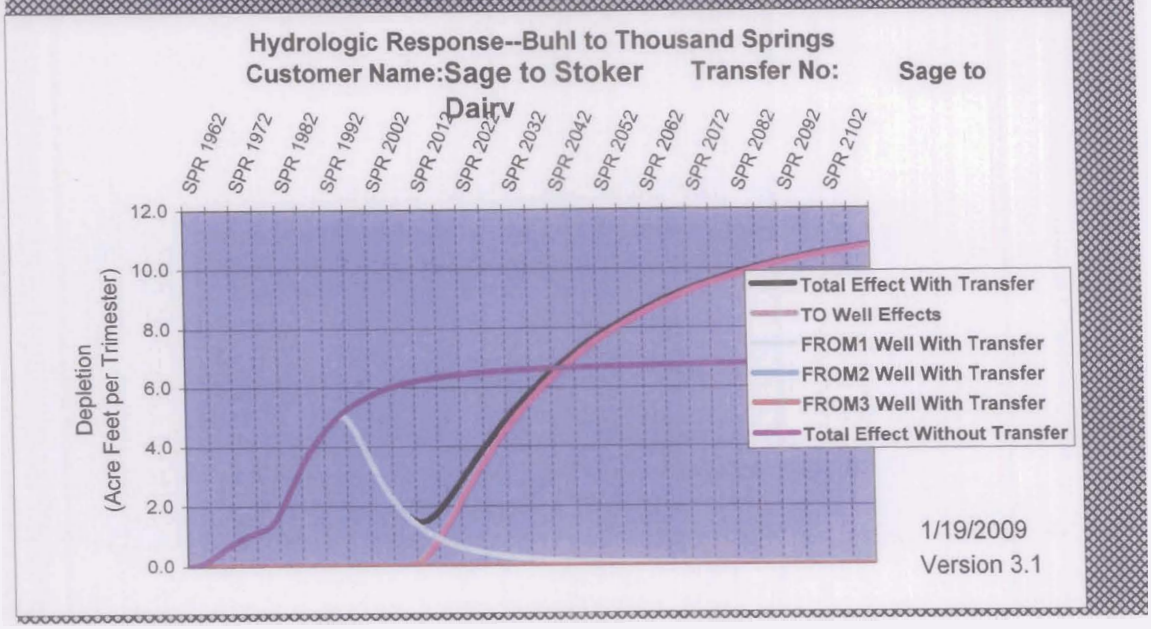


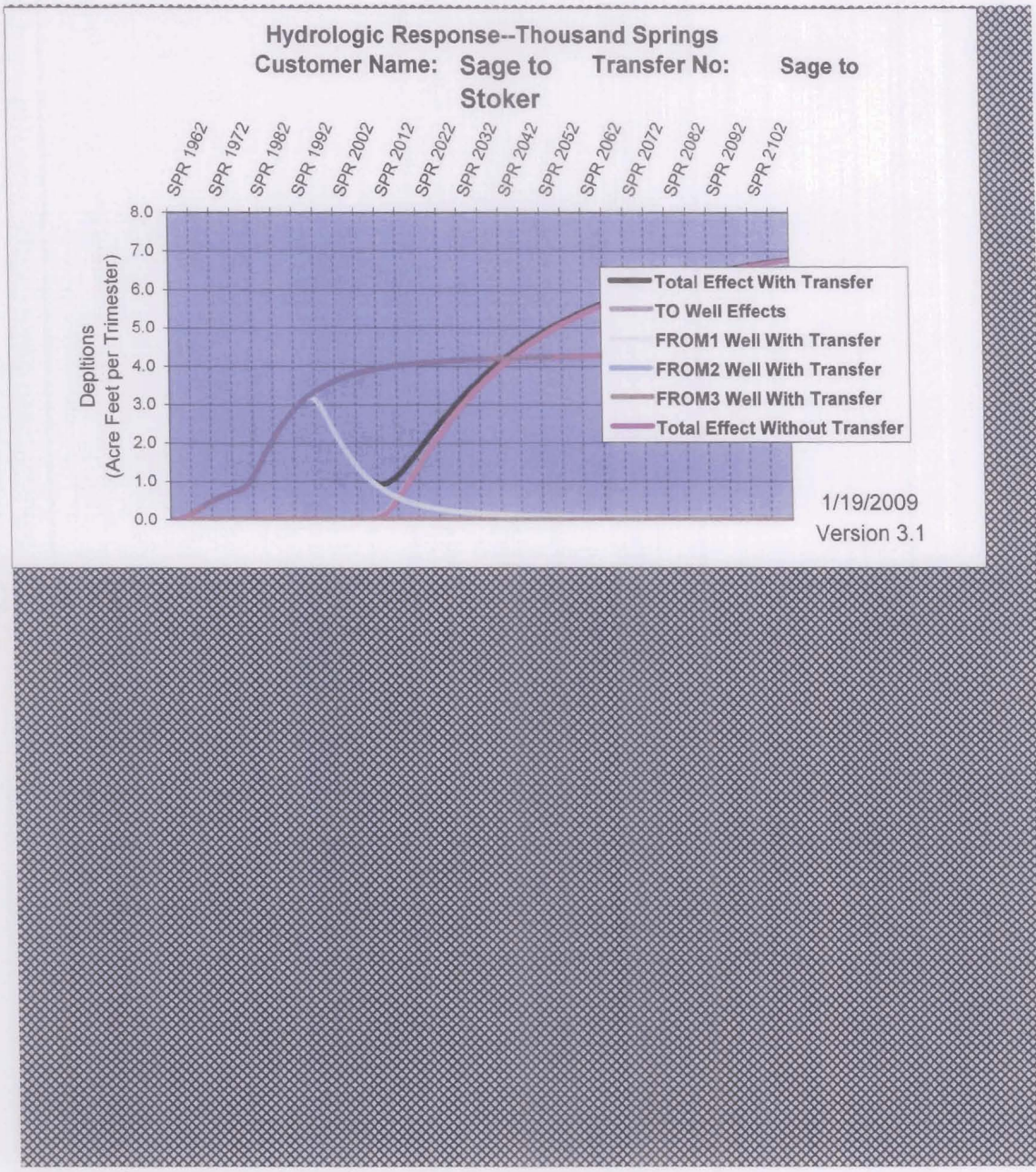
1/19/2009
Version 3.1


Hydrologic Response-- Malad
Customer Name: Sage to Stoker Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1

Hydrologic Response-- Malad to Bancroft
Customer Name: Sage to Stoker Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
Depletion (Acre Feet per Trimester)
0.3
0.2
0.2
0.1
0.1
0.0
Total Effect With Transfer
TO Well
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Devil's Washbowl to Buhl
Customer Name:Sage to Stoker Dairy Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Buhl to Thousand Springs
Customer Name:Sage to Stoker Dairy Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Depletion
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1


Hydrologic Response--Thousand Springs
Customer Name: Sage to Stoker
Transfer No: Sage to
SPR 1962
SPR 1972
SPR 1982
SPR 1992
SPR 2002
SPR 2012
SPR 2022
SPR 2032
SPR 2042
SPR 2052
SPR 2062
SPR 2072
SPR 2082
SPR 2092
SPR 2102
8.0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
Depltions
(Acre Feet per Trimester)
Total Effect With Transfer
TO Well Effects
FROM1 Well With Transfer
FROM2 Well With Transfer
FROM3 Well With Transfer
Total Effect Without Transfer
1/19/2009
Version 3.1