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WATER RESOURCES
WESTERN REGION

Attorneys for Boise Project Board of Control

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

IN THE MATTER OF PERMITS TO	)	
APPROPRIATE WATER NOS. 63-	)	
34079 & 63-34080, IN THE NAME OF	)	DIRECT TESTIMONY OF ROBERT
CHRIS EMMERT	)	D. SCHMIDT
	)	
	)	
	)	

1. I, Robert D. Schmidt, affirm that the testimony that follows is a true and accurate account of the work that I completed on behalf of the Boise Project Board of Control relating to these proceedings, and the findings and opinions that I developed as a result of that work.
2. Currently I reside at 28476 Naples St. NE, Isanti, Minnesota 55040. From 2015 through the present I have worked as a consulting hydrologist and in addition to the work that I have performed in this case, my consulting practice has also included work to review resource planning documents for the Public Policy Institute of California, as well as evaluating water conservation responses to climate change in the Boise River Basin using hydro-economic modeling.
3. From 2009 to 2015 I worked as a Water Resource Analyst for the University of Idaho's Water Resources Research Institute. Among other duties while employed there I conducted interdisciplinary hydrologic and economic modeling studies of water supply and demand in

Idaho, and tested the hydrologic and economic feasibility of various United State Bureau of Reclamation policy alternatives for meeting changing water demands in the Pacific Northwest.

4. Between the years 2007 and 2009 I worked as a consulting hydrologist developing a MODFLOW hydrologic model for the United States Bureau of Reclamation to predict seepage losses from the proposed Black Rock Reservoir on the Colombia River and designed and implemented ground water remediation plans for USEPA at a fuel spill site in Payette, Idaho.

5. Prior to that I worked for seven years (2000-2007) as a Principle Hydrologist for the PNW office of the Unites State Bureau of Reclamation, and in the two years prior (1998-2000) worked as an hydrologist, also for the United States Bureau of Reclamation on loan to Idaho Department of Water Resources for a Managed Recharge Modeling Study of the Eastern Snake Plain Aquifer. Additional information about my employment history from 1975 through 1998 is detailed on the Curriculum Vitae, attached hereto as Exhibit A. Also included are select publications that I authored or co-authored relating primarily to my work in Idaho, and in particular, in the Dry Lake, or Lake Lowell, vicinity.

6. I was engaged by the Boise Project Board of Control in late December, 2016, to analyze the impacts of the groundwater pumping proposed in water right application nos. 63-34079 and 63-34080. In order to analyze the impacts I conducted hydrologic modeling using the analytic element methodology. The analytic element modeling method distinguishes itself from the grid-based numerical modeling method employed by the applicant's hydrologists (the TVHP model) in that the analytic element model has unlimited spatial resolution which is particularly appropriate to the purpose of analyzing conjunctive surface and groundwater problems involving a dense network of interacting surface and groundwater features, as are present in the dry lake area where the proposed applications are situated. For a more thorough explanation of the

analytic elements model please see my report Conjunctive Hydrologic Modeling Analysis of Proposed New Groundwater Pumping in the Boise Basin South of Lake Lowell (Appl. 63-84079 and 63-84080) attached as Exhibit B.

7. As set forth in the executive summary portion of my report, the South Lake Lowell analytic element model simulates unconfined flow conditions in an aquifer that is comprised of the terrace gravels of the Snake River Group, and the upper and middle sand, silt and gravel units of the Glens Ferry Formation. The saturated thickness of the aquifer ranges from 300 to approximately 550 feet. The model was developed using the analytic element software package known as GFLOW (Scientific Software, 2017). In order to model the groundwater impacts of the two applications, all surface water hydrologic features, including the local canals, drains, Lake Lowell, and the Snake River are represented by strings of source-sink analytic elements, for which an elevation (head) and a bed resistance to seepage loss are specified. Canal, drain, river, and reservoir water elevations were taken from USGS digital elevation maps. The bed resistances were derived through model calibration. By using head-specified boundary conditions for all surface water features the model's predictive capability is increased, since model predictions of aquifer recharge or discharge rates (thru canal seepage, drain returns, reservoir gains and losses and river base flows) are made only for the surface water feature that are head-specified.

8. Here two South Lake Lowell GFLOW models were developed in order to assess the impacts of the proposed applications. The first (a base case) represented current conditions and the second represented the introduction of the two new wells (the Emmert wells) in the base case model. I modeled three scenarios based on the representations concerning the proposed pumping; 42 AF/year, 235 AF/yr. and 668 AF/yr. Impacts of the new pumping were conveyed in terms of

four categories of potential surface water depletions: increased Lake Lowell seepage, increased canal seepage, reduced groundwater discharge to drains, and reduced Snake River and Boise River base flows. Depletions were calculated by subtracting the flow of every head-specified element in the Emmert well model from the flow of every comparable head-specified element in the base case model. In the executive summary of my report, Exhibit B, I summarized results of modeling: Part A showing depletions to all affected surface water features, and part B showing depletions to just the Boise Project Board of Control canals and Lake Lowell. A more detailed description of model elements, method of analysis and surface water depletions is found in Exhibit B.

9. The results of the modeling scenarios indicate that Lake Lowell, the Deer Flat High Line canal, the New York Canal, the Mora Canal, as well as other canals and drains will experience depletions as a result of the Emmert well pumping. Over time, the impact of the proposed well pumping is expected to be a depletion of surface water, either through reduced discharge to drains, increased seepage from canals, reduced gains or increased losses from Lake Lowell, or reduced base flow to the Snake River. The total (steady-state) surface water depletion that results from the proposed Emmert well pumping is expected to be equivalent in magnitude to total well withdrawal. While it is generally not possible to directly measure the surface water depletions that result from a single new well, it is possible to measure the depletions that result from the cumulative effects of many new wells that begin pumping at about the same time. The 30 to 40 percent increase in depletions from the Mora Canal that followed a 38 percent increase in groundwater pumping south of Lake Lowell in the South Lake Lowell area in 1977, is evidence for this. In this regard, the 2 to 4 year time lag between the onset of pumping and the Mora Canal seepage response can be seen as a rough indicator of the time lag that would exist between the

onset of proposed Emmert well pumping and increased BOC canal seepage (Exhibit B). South Lake Lowell model results show directly, what historical records of Mora Canal loss and groundwater pumping show indirectly, i.e. that portions of the Deer Flat Highline Canal, the Mora Canal, the New York Canal and Lake Lowell are in direct contact with the underlying saturated surface of the aquifer, and therefore canal seepage is dependent on aquifer head. Ultimately, new groundwater pumping will result in increased seepage from these canals and from Lake Lowell.

10. Following are tables showing the modeled surface water depletions due to the three Emmert well pumping scenarios Tables 1-3 show model-wide depletions to Lake Lowell, and to all canals, drains and rivers within the model area. Tables 4-6 show modeled depletions to Board of Control canals within the model area.

Table 1. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 42 AF/year Emmert well pumping.								
1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 42 AF pumping	5. Discharge 42 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 42 AF pumping
Lake Lowell (near field)	(6,058.90)	9,250.39	(6,059.21)	9,249.83	0.31	0.56	0.87	2.1%
canals (near field)	(307,396.42)	100,164.87	(307,404.75)	100,162.07	8.32	2.80	11.12	26.5%
drains (near field)	-	122,199.95	-	122,185	-	15.37	15.37	36.6%
Snake River (near field)	-	138,333.81	-	138,331	-	3.14	3.14	7.5%
Snake River (far field)	-	773,232.94	-	773,227	-	5.50	5.50	13.1%
Boise River (far field)	-	32,612.16	-	32,608	-	3.73	3.73	8.9%
South of Snake River (net canals & drains)	(782,017.85)		(782,015.58)		2.27	(782,017.85)	2.27	5.4%
total	(1,095,473.2)	1,175,794.1	(1,095,479.5)	1,175,763.0	10.9	(1,095,473.2)	42.0	100.0%

Table 2. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 235 AF/year Emmert well pumping.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 235 AF pumping	5. Discharge 235 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 235 AF pumping
Lake Lowell (near field)	(6,058.90)	9,250.39	(6,060.63)	9,247.24	1.73	3.15	4.89	2.1%
canals (near field)	(307,396.42)	100,164.87	(307,442.92)	100,149.23	46.50	15.64	62.14	26.4%
drains (near field)	-	122,199.95	-	122,114	-	85.93	85.93	36.6%
Snake River (near field)	-	138,333.81	-	138,316	-	17.70	17.70	7.5%
Snake River (far field)	-	773,232.94	-	773,202	-	30.88	30.88	13.1%
Boise River (far field)	-	32,612.16	-	32,591	-	20.90	20.90	8.9%
South of Snake River (net canals & drains)	(782,017.85)		(782,030.42)		12.57		12.57	5.3%
total	(1,095,473.2)	1,175,794.1	(1,095,534.0)	1,175,619.9	60.8	174.2	235.0	100.0%

Table 3. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 668 AF/year Emmert well pumping.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 668 AF pumping	5. Discharge 668 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 668 AF pumping
Lake Lowell (near field)	(6,058.90)	9,250.39	(6,063.83)	9,241.42	4.93	8.97	13.90	2.1%
canals (near field)	(307,396.4)	100,164.87	(307,529.67)	100,121.36	133.24	43.51	176.75	26.5%
drains (near field)	-	122,199.95	-	121,955	-	244.47	244.47	36.6%
Snake River (near field)	-	138,333.81	-	138,284	-	50.29	50.29	7.5%
Snake River (far field)	-	773,232.94	-	773,145	-	87.81	87.81	13.1%
Boise River (far field)	-	32,612.16	-	32,553	-	59.33	59.33	8.9%
South of Snake River (net canals & drains)	(782,017.85)		(782,053.25)		35.40		35.40	5.3%
total	(1,095,473.2)	1,175,794.1	(1,095,646.8)	1,175,299.7	173.6	494.4	668.0	100.0%

Table 4. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 42 AF of new well pumping.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 42 AF pumping	5. Discharge 42 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 42 AF pumping
Deer Flat High Line Canal	(44,268.54)	-	(44,273.31)	-	4.77	-	4.77	11.3%
New York Canal	(192.24)	41.71	(192.00)	41.66	0.24	0.05	0.29	0.7%
Mora Canal	(35,747.72)	-	(35,750.63)	-	2.91	-	2.91	6.9%
All other canals ¹	(202,158.80)	97,857.04	(202,156.64)	97,856.05	2.16	0.99	3.16	7.5%
total	(307,396.42)	100,164.87	(307,388.10)	100,162.07	8.32	2.80	11.12	26.5%

¹ depletions are from non-BOC canals

Table 5. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 235 AF of new well pumping.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 235 AF pumping	5. Discharge 235 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 235 AF pumping
Deer Flat High Line Canal	(44,268.54)		(44,295.17)		26.63	-	26.63	11.3%
New York Canal	(192.24)	41.71	(193.60)	41.44	1.35	0.28	1.63	0.7%
Mora Canal	(35,747.72)	-	(35,763.96)	-	16.24	-	16.24	6.9%
All other canals ¹	(202,158.80)	97,857.04	(202,170.92)	97,851.52	12.11	5.52	17.64	7.5%
total	(307,396.42)	100,164.87	(307,442.92)	100,149.23	46.50	15.64	62.14	26.4%

¹ depletions are from non-BOC canals

Table 6. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 668 AF of new well pumping.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 668 AF pumping	5. Discharge 668 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 668 AF pumping
Deer Flat High Line Canal	(44,268.54)		(44,344.29)		75.75	-	75.75	11.3%

All other canals ¹	(202,158.80)	97,857.04	(202,193.69)	97,841.77	34.89	15.27	50.17	7.5%
total	(307,396.42)	100,164.87	(307,529.67)	100,121.36	133.24	43.51	178.75	26.5%

¹ depletions are from non-BOC canals

Dated this 27th day of March, 2017



Robert D. Schmidt

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 30th day of March, 2017, I caused to be served a true and correct copy of the foregoing **DIRECT TESTIMONY OF ROBERT D. SCHMIDT** by the method indicated below, and addressed to each of the following:

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EXHIBIT A

Curriculum Vita

Robert D. Schmidt
RDSchmidt@uidaho.edu

Education

B.S. Mathematics 1970, University of Minnesota

M.S. Geoengineering and Hydrology 1985, University of Minnesota

Employment Experience

2015 to present - Consulting Hydrologist

- Review water resource planning documents for Public Policy Institute of California.
- Evaluate water conservation responses to climate change in Boise River Basin using hydro-economic modeling.

2009 to 2015 - Water Resource Analyst, University of Idaho, Water Resources Research Institute

- Conduct interdisciplinary hydrologic and economic modeling studies of water supply and demand in Idaho.
- Test hydrologic and economic feasibility of various USBR policy alternatives for meeting changing water demands in Pacific Northwest.

2007 to 2009 - Consulting Hydrologist

- Develop a (MODFLOW) hydrologic model for USBR to predict seepage losses from the proposed Black Rock Reservoir on the Columbia River.
- Design and implement groundwater remediation plans for USEPA at two gasoline spill sites in Payette, Idaho.

2000 to 2007 - Principle Hydrologist, Pacific Northwest Regional Office, US Bureau of Reclamation

- Conduct a broad range of conjunctive (ground-surface water) hydrologic investigations in the PN Region involving aquifer characterization, development of GIS-based water budgets, and numerical model development and application.
- Develop a series of sub-basin analytic element hydrologic modeling tools for use by general staff in assessing groundwater interactions between wells, canals and drains in the Boise Basin.

1998 to 2000 – USBR Hydrologist for IDWR Managed Aquifer Recharge Modeling Study.

- Direct hydrologic modeling investigation for a large-scale artificial aquifer recharge project in Eastern Idaho.
- Use hydrologic model results to identify advantageous recharge sites, determine infiltration rates, and predict impacts on groundwater levels and spring discharge.

1992 to 1998 - Supervisor, Hydrologic Applications Group, Twin Cities Mining Research Center, US Bureau of Mines.

- Lead a multi-disciplinary team of scientists, engineers, and technicians in modeling and pilot-scale field testing of hydrologic designs for in-situ leaching of copper ore deposits.
- Perform hydrologic testing and modeling in support of pilot and production scale leaching operations at Arizona copper mines.
- Implement a multi-well test of a novel in-situ leaching design for Chalcocite ore at an Arizona copper mine.

1975 to 1992 - Hydrologist, Twin Cities Research Center, US Bureau of Mines

- Develop analytical and numerical models of groundwater flow and transport of acidic drainage from abandoned underground coal mines and inactive open pit copper mines. Conduct aquifer tests and develop hydrologic data acquisition systems.

Select Publications

R.D. Schmidt and Taylor R.G., Evaluating a Water Conservation Response to Climate Change in the Lower Boise River Basin, Water Economics and Policy, 2016.

R.G. Taylor, Schmidt R.D, Stodick L. and Contor B., Modeling Conjunctive Water Use as a Reciprocal Externality, American Journal of Agricultural Economics, 2014.

R.D. Schmidt, Cook Z, Dyke D. et al., A Distributed Parameter Water Budget Data Base for the Lower Boise River Valley, US Bureau of Reclamation and Idaho Dept. of Water Resources, 2008

R.D. Schmidt, Modeling Drain Interactions with Shallow Groundwater in the Boise Valley using Analytic Elements, US Bureau of Reclamation, 2008.

R.D. Schmidt, Analysis of Hydrologic Impacts of New Groundwater Pumping in the Dry Lake Area of Canyon County, Idaho, US Bureau of Reclamation, 2003.

EXHIBIT B

**Conjunctive Hydrologic Modeling Analysis of Proposed New
Groundwater Pumping in the Boise Basin South of Lake Lowell**

(Appl. 63-84079 and 63-84080)

Robert D Schmidt

2/13/2017

Executive Summary

Hydrologic modeling of proposed new groundwater pumping in eastern Canyon County, south of Lake Lowell (Appl. 63-34079 and 63-34080) is conducted to assess the impact of proposed groundwater withdrawals on nearby Boise Board of Control (BOC) managed facilities, including Lake Lowell, the New York Canal, the Deer Flat Highline Canal and the Mora Canal.

The impact of proposed pumping on BOC managed facilities is estimated using a hydrologic modeling methodology known as analytic elements (Strack, 1985). Analytic elements are solutions to the governing linear differential equation for steady-state, two-dimensional groundwater flow. Source-sink analytic elements are used to represent rivers, canals, drains, and pumping wells. Analytic elements are also used to represent aquifer inhomogeneities. Unlike numerical models which require spatial approximation using a grid mesh, analytic element models have unlimited spatial resolution, and are especially well suited for conjunctive surface and groundwater problems involving a dense network of interacting surface and groundwater water features.

The South Lake Lowell analytic element model simulates unconfined flow conditions in an aquifer that is comprised of the terrace gravels of the Snake River Group, and the upper and middle sand, silt, and gravel units of the Glens Ferry Formation. The saturated thickness of this aquifer ranges from 300 to about 550 feet. The model was developed using a well-established analytic element software package known as GFLOW (Scientific Software, 2017).

All surface water hydrologic features, including canals, drains, Lake Lowell, and the Snake River in the South Lake Lowell model are represented by strings of source-sink analytic elements, for which an elevation (head) and a bed resistance to seepage loss are specified. Canal, drain, river, and reservoir water elevations are taken from USGS digital elevation maps. Bed resistances are derived through model calibration.

The representation of all surficial hydrologic features as head-specified boundary conditions instead of flow-specified boundary conditions is fundamentally important to the South Lake Lowell model's predictive capability, since model predictions of aquifer recharge or discharge rates are made only for surficial features that are head-specified. Aquifer recharge or discharge rates from flow-specified boundary conditions are fixed by the model user.

Not all surface water features in the South Lake Lowell model area are impacted by new groundwater pumping. If the elevation of the saturated surface of the aquifer is below the resistance bed of a canal,

drain or lake, then seepage is independent of aquifer head and the feature is said to be percolating. If the saturated surface is above the elevation of the resistance bed and in direct contact with the canal, then seepage is dependent on changes in aquifer head conditions. By lowering the aquifer head beneath a head dependent canal, groundwater pumping induces additional seepage. However lowering aquifer head beneath a percolating canal has no effect on seepage rate.

With GFLOW it is not necessary to know in advance which lakes, rivers, canals or drains are above the saturated surface of the aquifer and which are in contact with it. GFLOW incorporates an iterative procedure for making this determination when the model is run. In those cases where head-specified features are perched above the saturated surface GFLOW automatically determines the seepage rate, and converts the head-specified feature to a flow-specified (percolating) feature.

Two South Lake Lowell GFLOW models are developed to assess the impacts of the new Emmert well pumping on BOC surface water facilities, the base case model representing current conditions and the Emmert well model which introduces pumping from the two proposed wells (63-34079 and 63-34080) in the base case model. Three Emmert well pumping scenarios are modeled; 42 AF per year, 235 AF per year and 668 AF per year.

The impact of proposed Emmert well pumping in the South Lake Lowell area is conveyed in terms of four categories of potential surface water depletion; Increased Lake Lowell seepage, increased canal seepage, reduced groundwater discharge to drains, and reduced Snake River and Boise River base flows. Depletions are calculated by subtracting the flow of every head-specified element in the Emmert well model from the flow of every comparable head-specified element in the base case model. The modeled depletions in each of the four categories, for each of the three Emmert well pumping scenarios, are presented in tables giving both the magnitude of depletion and the depletion as a percentage of total Emmert well pumping.

In addition to Lake Lowell and the Snake River, base case model results indicate that portions of the New York Canal, the Deer Flat Highline Canal, and the Mora Canal are currently in direct contact with the underlying saturated surface. Clearly, representing canals as potentially head-dependent boundary conditions and allowing the hydrologic model to determine which are percolating and which are actually head dependent is critical for an accurate accounting of all surface water depletions that will ultimately result from proposed well pumping.

The table below summarizes the South Lake Lowell model depletion tables contained in this report. Part A of this table summarizes results for all surface water features in the model area. Part B summarizes results for BOC surface water features only. Percentage depletions are the same for all three Emmert well pumping scenarios, although the magnitude of depletion increases with increased pumping.

Part A: South Lake Lowell surface water depletions due to Emmert well pumping, all scenarios.	
Model boundary feature	South Lake Lowell surface water depletions, % of total Emmert well pumping
Lake Lowell	2.1 %
All drains	41.9%
All canals	26.4%
Snake River	20.6%
Boise River	8.9%
Total	100%
Part B: BOC surface water depletions due to Emmert well pumping, all scenarios.	
Model boundary feature	BOC depletions, % of total Emmert well pumping
BOC canals	19.0%
Lake Lowell	2.1%
Total	21.1%

Table of Contents

Executive Summary	2
List of Figures.....	6
List of Tables.....	7
Objective and Background	8
The South Lake Lowell Model Area of Interest	8
Hydrogeology of the South Lake Lowell Area	9
South Lake Lowell Area Water Budget.....	12
Lake Lowell Gains and Losses.....	12
Canal Seepage in the South Lake Lowell Area.....	13
Mora Canal Seepage.....	13
The South Lake Lowell Area AEM Groundwater Model.....	15
South Lake Lowell Model Boundaries	17
South Lake Lowell Base Case Model Calibration.....	19
Base Case Model Results: Groundwater Elevations.....	20
Base Case Model Results: Groundwater and Surface Water Interactions.....	21
The Emmert Well Pumping Model	23
Comparative Analysis of Base Case Model and Emmert Model Results.....	24
Model -Wide Surface Water Depletions	24
Model Results: Individual Drain Depletions	28
Model Results: Individual BOC Canal Depletions	29
Summary and Conclusions	32
References.....	33
Appendix A GFLOW Iterative Solver Log, Base Case Model.....	35
Appendix B GFLOW Computational Results, Base Case Model.....	35

List of Figures

Figure 1. Approximate South Lake Lowell model area of interest.....	8
Figure 2. Generalized lithologic log of the Boise River Basin (adapted from Wood and Anderson, 1981). 9	
Figure 3. Generalized watertable cross section beneath the South Lake Lowell area (from Lindholm, 1988).	11
Figure 4. Geologic Faulting in the South Lake Lowell Area, (adapted from Wood and Anderson, 1981)..	11
Figure 5. Average monthly lake level and average monthly gain or loss from Lake Lowell (USBR&IDWR, 2008).	12
Figure 6. Average monthly seepage from South Lake Lowell canals (1967- 1997).....	13
Figure 7. Average monthly seepage from the Mora Canal (1967-1997).....	14
Figure 8. Annual Mora Canal seepage and maximum potential withdrawal for all groundwater rights in the South Lake Lowell area (1957-1997).....	15
Figure 9. South Lake Lowell analytic element model near-field and far-field boundaries.	18
Figure 10. Base case model calibration with respect to observation well levels (in feet msl.).	19
Figure 11. Base case model head contours in the South Lake Lowell area and locations of proposed Emmert wells 63-34079 and 63-37080.	21
Figure 12. Locations of BOC canal in contact with the aquifer saturated surface.	23

List of Tables

Table 1 Groundwater elevations in "Deer Flat" observation wells (ISWR, 2017).....	15
Table 2. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 42 AF/year Emmert well pumping.....	26
Table 3. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 235 AF/year Emmert well pumping.....	26
Table 4. Model-wide surface water depletions from head-specified canal, drain and river boundaries due to 668 AF/year Emmert well pumping.....	27
Table 5. Modeled drain depletions for head-specified drain boundaries with 42 AF of new well pumping.....	28
Table 6. Modeled drain depletions for head-specified drain boundaries with 235 AF of new well pumping.....	28
Table 7. Modeled drain depletions for head-specified drain boundaries with 668 AF of new well pumping.....	28
Table 8. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 42 AF of new well pumping.....	30
Table 9. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 235 AF of new well pumping.....	30
Table 10. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 668 AF of new well pumping.....	31

Conjunctive Hydrologic Modeling Analysis of Proposed New Groundwater Pumping In the Boise Basin South of Lake Lowell

Objective and Background

Hydrologic modeling of new groundwater pumping south of Lake Lowell in eastern Canyon County, is focused on assessing the impact of proposed groundwater withdrawals (Appl. 63-84079 and 63-84080) on nearby Boise Board of Control (BOC) managed facilities, including Lake Lowell, the New York Canal, the Deer Flat Highline Canal and Mora Canal.

The impact of new groundwater pumping on BOC facilities is estimated using a computer-based groundwater model of the Boise basin south of Lake Lowell that was developed by the Bureau of Reclamation in 2003. Portions of that USBR Report of Investigation (USBR, 2003) are reproduced here. Reclamation hydrogeologic investigations, IDWR and USGS observation well data, and a later-published water budget for irrigated lands in the Boise basin (USBR, 2008) were used to develop and calibrate what is referred to here as the South Lake Lowell area groundwater model (the model).

The South Lake Lowell Model Area of Interest

The South Lake Lowell groundwater area of interest is centered roughly on a dry lake bed located in Canyon County about five miles south of the east end of Lake Lowell (Stevens, 1962). The area encompasses about 155 square miles and includes all of Lake Lowell, Boise Project managed canals and drains located south and east of Lake Lowell, and a portion of the Snake River (figure 1).

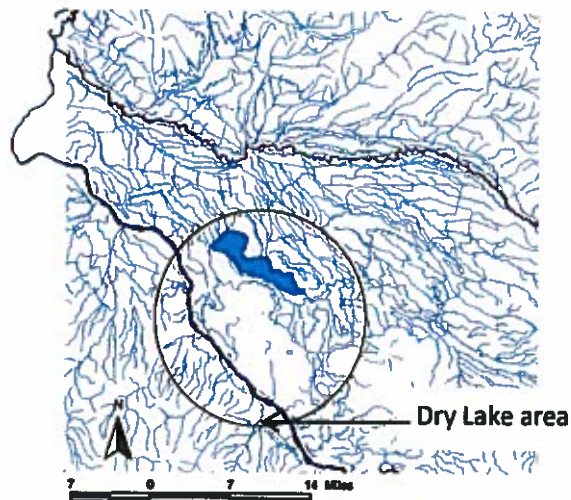


Figure 1. Approximate South Lake Lowell model area of interest.

Hydrogeology of the South Lake Lowell Area

Numerous studies of Boise Basin geology and hydrogeology have been conducted by the USGS, the University of Idaho, Boise State University and others. The principal reports are those of Stevens (1962), Wood and Anderson (1981), Anderson and Wood (1981) Whitehead (1986), Newton (1991), Squires, Wood, and Osiensky (1992), Othberg (1994), Kjelstrom (1995), Lindholm (1996), and Wood and Clemens (2001). The report by Stevens, and a draft report by Graves and Bendixsen (IDWR, 1995) are the only ones to focus exclusively on the area south of Lake Lowell however.

In summary, the Boise Basin is characterized geologically as a graben, with high angle, north-west south-east trending faults along its boundaries, and downwarping toward the center of the basin. The basin is filled with sediments derived from erosion of surrounding granitic mountains inter-fingered with basalt flows. Unconsolidated or poorly consolidated flood plain, glacial, and lake deposits extend to a depth of 2000 feet or more in the basin, and range in age from Pliocene to recent (figure 2).

Three geologic units in the Boise Basin have been identified as important cold water aquifers. They are (1) the fractured basalts, and (2) the sands and gravels of the Snake River Group, and (3) the sands, silts, and gravels in the upper and middle Idaho Group, which includes the Glens Ferry Formation (figure 2).

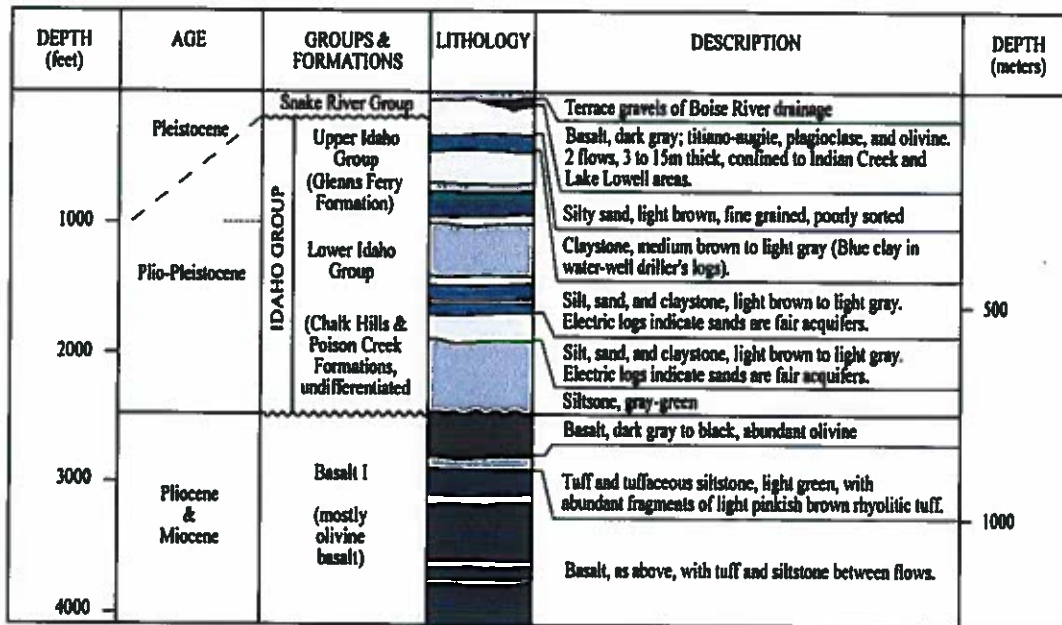


Figure 2. Generalized lithologic log of the Boise River Basin (adapted from Wood and Anderson, 1981).

The sands, silts, and gravels of the Glens Ferry Formation are frequently separated from lower units in the Idaho Group by clay layers having a "bluish" color (as reported in drilling logs). The blue clay layers,

which together can be up to 400 feet thick, are fine sediments that formed under chemically reducing conditions, at the bottom of prehistoric Lake Idaho.

The blue clay layers have been interpreted by some as a large regional confining layer overlying a much deeper geothermal aquifer (Wood and Anderson, 1981). Other hydrogeologists have interpreted these layers as a third intermediate aquifer, albeit with a much lower permeability than the upper sands, silts, and gravels (Newton, 1991).

Figure 3 is a generalized north-south cross-section showing groundwater elevation in the Boise Basin, through Lake Lowell. Lake Lowell marks the location of a groundwater divide in the basin. South of the divide the direction of groundwater flow is to the south or southwest toward the Snake River. North of the divide, groundwater flows north or northwest, toward the Boise River. (The vertical scale in this figure is greatly exaggerated.)

The groundwater divide south of Lake Lowell is not a fixed hydrologic feature, and the location of the divide fluctuates somewhat during the year in response to changes in aquifer recharge rates, groundwater pumping, and the level of Lake Lowell itself. A previous study has indicated that during winter months, when the lake level is high and canals are dry, the divide shifts slightly to the north. During summer months, when the lake level is low and canals are full, it shifts slightly to the south (USBR, 2000).

The principal sources of groundwater in the South Lake Lowell area are the terrace gravels of the Snake River Group, and the upper and middle sand, silt, and gravel units of the Glens Ferry Formation. Collectively, these two units have a saturated thickness of between 300 and 550 feet. Wells drilled in the area encounter thin stringers of blue clay at various depths, however multiple, thick layers (up to 45 feet) have been encountered only at depths below 2100 feet msl. elevation (Stevens, 1962). Depths to groundwater in the area range from 17 feet to more than 400 feet. The Snake River basalts are above the watertable throughout most of the area.

The course of the Snake River through the South Lake Lowell area is structurally controlled by faulting that is concentrated along the margins of the basin. A series of steeply dipping faults, all striking in a northwest-southeast direction, are exposed along the north rim of the Snake River Canyon (figure 4). These fault zones (together with tilting of stratigraphic units to the north-east) are believed to act as a partial barrier to groundwater flow, and are probably the reason there are almost no springs along the canyon wall on the north side of the river. A structural trough, also associated with faulting extends east

and south from Lake Lowell to include the Deer Flat area, north of the Mora Canal and is believed to be partly responsible for the groundwater divide that extends east of Lake Lowell.

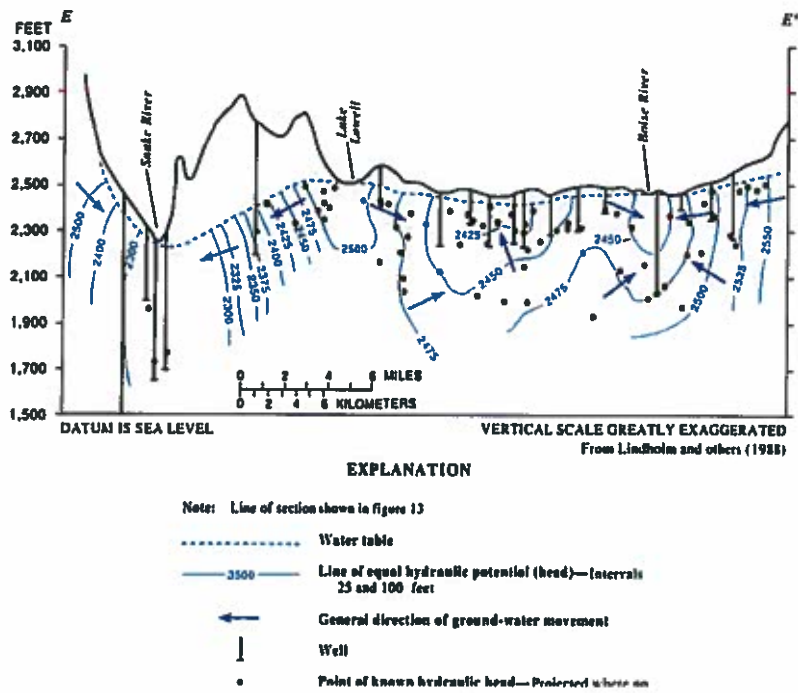


Figure 3. Generalized watertable cross section beneath the South Lake Lowell area (from Lindholm, 1988).



Figure 4. Geologic Faulting in the South Lake Lowell Area, (adapted from Wood and Anderson, 1981).

Groundwater elevations in the model area south of Lake Lowell have been monitored either by the USGS or IDWR since the early 1960's. Maps made by USGS in the early 1960's (Stevens, 1962) depict groundwater elevations ranging between 2220 feet and 2575 feet msl., and a groundwater gradient to the south or southwest toward the Snake River.

South Lake Lowell Area Water Budget

The South Lake Lowell area water budget is part of a distributed-parameter water budget developed by Reclamation for irrigated lands in the Boise River Basin (USBR & IDWR, 2008). Individual components of this water budget include canal diversions, farm deliveries, canal seepage, on-farm loss, groundwater pumping, return flow to drains, Snake River and Boise River base flows, and Lake Lowell gains and losses. The water budget provides a spatially distributed, average monthly value for each component, based on historical records of diversion and water use in the basin during the period 1967 to 1997.

Lake Lowell Gains and Losses

Water budget calculations for Lake Lowell (which take into account flows in and out of the lake, in addition to lake evaporation, and evapotranspiration by lake vegetation) indicate that from a multi-year perspective, Lake Lowell gains and losses roughly balance out. In any given year however, Lake Lowell may be either be gaining or losing. Net annual gains occur mainly in dry years when average lake level is lower. Net annual losses are more likely in wet years when the average lake level is higher. Over the past three decades, annual Lake Lowell gains have been as high as 42,000 acre-feet, and losses have been as high as 45,000 acre-feet. Month to month gains and losses from Lake Lowell depend on lake level (figure 5). During an average year, Lake Lowell gains up to 8,100 acre-feet during August, when the lake level is lowest, and loses up to 6,100 acre-feet during April, when the lake level is highest.

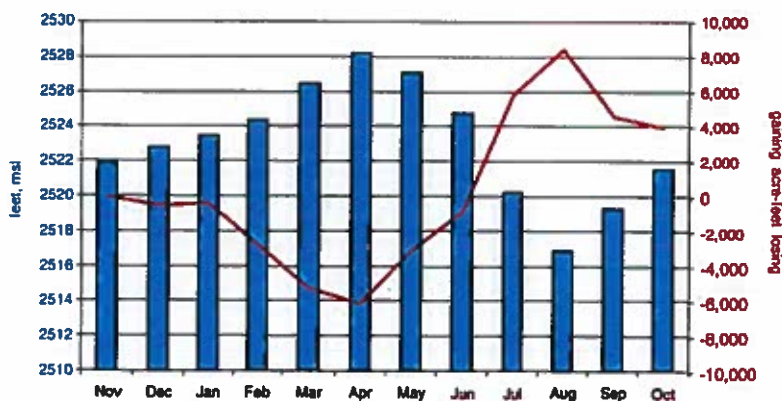


Figure 5. Average monthly lake level and average monthly gain or loss from Lake Lowell (USBR&IDWR, 2008).

Canal Seepage in the South Lake Lowell Area

Estimates of average monthly seepage from all canals in the South Lake Lowell area serving BOC divisions 3 and 4 are based on Board of Control records of diversion and farm delivery, and estimates of canal ET (Figure 6). Seepage occurs throughout the year, since some diversions are made to fill Lake Lowell during winter months. However the vast majority of canal seepage occurs during the irrigation season. Between May and September, canal seepage ranges between 30,200 and 68,200 acre-feet per month. Year-round, monthly seepage from area canals averages 22,200 acre-feet.

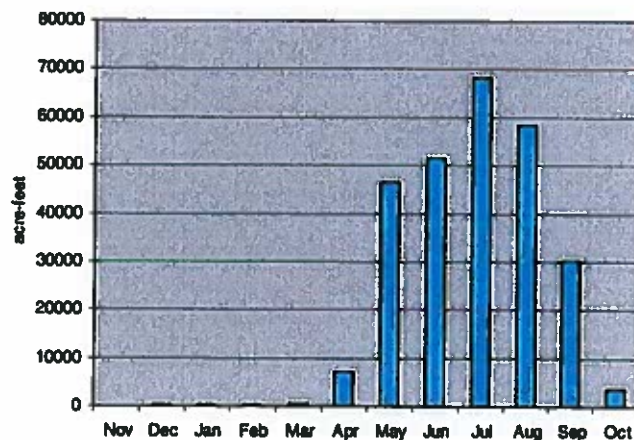


Figure 6. Average monthly seepage from South Lake Lowell canals (1967- 1997).

Mora Canal Seepage

Seepage from the Mora Canal is a major source of aquifer recharge in the South Lake Lowell area. BOC records of canal diversions (at the New York Canal and at Richards Point) and records of drain discharges indicate losses during the irrigation season range between 4,900 and 33,200 acre-feet per month (Figure 7).

On average during the period 1967 to 1997, about 118 thousand acre-feet per year, or about 37 percent of the total annual diversion to the Mora Canal, seeped from the canal somewhere along its 38 mile length.

Historical records of canal seepage and groundwater withdrawals indicate that increased Mora canal seepage is associated with increased groundwater pumping in the South Lake Lowell area. The bar chart in figure 8 shows estimated annual Mora Canal seepage loss from 1957 through 1997 (USBR, 2002). The line chart in this figure shows the maximum potential groundwater withdrawal that could occur each year in the South Lake Lowell area based on the annual volume limitation specified for all water rights

granted up to that point in time (IDWR, 2003). This is not necessarily the actual groundwater withdrawal that occurs each year, but it is a good indicator of the overall trend in groundwater withdrawal over the years.

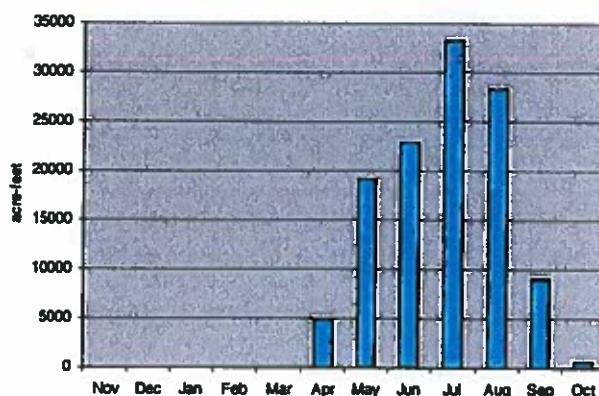


Figure 7. Average monthly seepage from the Mora Canal (1967-1997)

While there is considerable variability in year to year Mora Canal seepage rates, there are a couple obvious trends. First, canal losses are lowest during the driest years such as 1977 and 1992, when there is much less water to divert. In average water years or in wet years such as 1982, 1983, 1985 or 1997, canal losses are higher. Second, prior to 1970 canal losses generally range from 80 to 100 thousand acre-feet per year. However by the mid 1980's canal losses have increased to between 120 and 140 thousand acre-feet per year. During the same time period, maximum potential groundwater withdrawals for irrigation in the South Lake Lowell area increased from less than 40,000 acre-feet per year to almost 90,000 acre-feet per year. It is apparent in figure 8 that much of this increase in groundwater withdrawals occurred in a single year, 1977 (IDWR, 2003).

As of 2003, there were 277 wells in the South Lake Lowell area with water rights. Forty-seven of these wells were permitted in 1977, more than in any other year. Most of the wells were permitted in February and March of that year, and all are primary supply irrigation wells. Fourteen of the wells permitted in 1977 are located within a mile of the Mora Canal. Eleven more are within two miles of the canal. The remaining are three to five miles from the canal. During this one year, maximum potential groundwater withdrawals in the South Lake Lowell area increased by 18,000 acre-feet, or by 38 percent.

The impact of new groundwater pumping on Mora Canal seepage is apparent in the years following 1977. Canal losses increase significantly in 1979 and 1981, and remain generally at a higher level from then on.

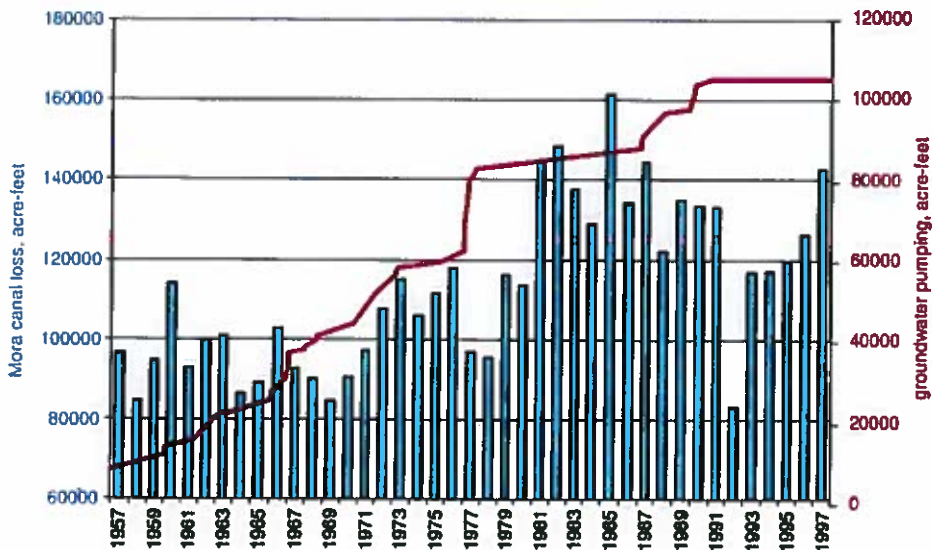


Figure 8. Annual Mora Canal seepage and maximum potential withdrawal for all groundwater rights in the South Lake Lowell area (1957-1997).

Increased seepage from the Mora Canal and its laterals has helped to sustain groundwater levels in the “Deer Flat” area just south of the Deer Flat Highline canal and north of the Mora Canal. Observation well data in the “Deer Flat” area indicates average annual groundwater levels range from 2525 to 2550 feet msl. (Table 1). Nevertheless, this is somewhat lower than what is indicated by watertable contour maps in USGS Water Supply Paper 1585 (Stevens P.R., 1962), even though these maps predate the construction of the Brooks lateral off the Mora Canal.

Table 1. Groundwater elevations in “Deer Flat” observation wells (IDWR, 2017).

Well ID	Land Surface datum feet msl.	Depth to water, feet (approx. time series average)	Groundwater elevation, feet msl. (approx. time series average)
2N3W02DCC1	2549	20	2529
2N3W12DAA1	2535	19	2514
2N2W17CBC1	2555	31	2528
2N2W28DDD1	2610	60	2550
2N3W13DAA1	2599	70	2529
2N2W30BBA-4	2590	60	2530
2N2W20CBB1	2563	35	2528
2N2W07CBC1	2550	20	2530

The South Lake Lowell Area AEM Groundwater Model

The impact of proposed pumping in the South Lake Lowell area on BOC managed facilities is estimated using a hydrologic modeling methodology known as analytic elements. The analytic element method (AEM) has its origins at the University of Delft (De Josselin De Jong, 1969), (Verruijt, 1982). But it was

primarily developed at the University of Minnesota, beginning in the 1980's (Strack, 1989). Unlike numerical models which require spatial approximation using a grid mesh, analytic element models have unlimited spatial resolution, and are especially well suited for conjunctive surface and groundwater problems involving a dense network of surface water features such as canals, drains, rivers and lakes. As such, AEM models have become a standard with government agencies, universities, and many consulting firms. In Idaho, an AEM model was used by IDEQ to delineate wellhead protection zones for 549 municipal wells in the Treasure Valley (IDEQ, 2001).

The methodology of analytic element modeling (AEM) is based on the superposition of analytic functions (elements) representing a wide variety of surface and subsurface hydrologic features that influence groundwater flow in both confined and unconfined aquifers. Each analytic element in an AEM model is a solution to the governing linear differential equation for steady-state, two-dimensional groundwater flow (the Laplace or Poisson equation). Strings of line source-sink elements are used to represent rivers, canals and drains. Point source-sink elements are used to represent wells. Doublet elements are used to represent inhomogeneities in aquifer permeability. Areal-recharge elements are used to represent aquifer infiltration such as on-farm loss. A boundary condition (either a fixed elevation head or a fixed flow rate) is required for each analytic element. Analytic elements with a fixed head are referred to as head-specified and analytic elements with a fixed flow are referred to as flow-specified.

Individual analytic element solutions to the governing linear differential equation are additive, and can be superimposed on one another in order to generate a comprehensive solution for a groundwater flow problem that involves many different surficial water features. Since the analytic element solutions are derived analytically (rather than numerically using a grid) it is possible to represent individual canal and drain features at their exact locations, with exact widths and depths, on a basin-wide scale.

The AEM software used to model the South Lake Lowell area is GFLOW (Scientific Software Group, 2017), which is a proprietary software package developed at Indiana University. GFLOW was chosen over other public domain AEM software because it incorporates a canal and river routing algorithm which runs in conjunction with the groundwater model.

South Lake Lowell Model Boundaries

The South Lake Lowell AEM model simulates unconfined flow conditions in an aquifer that is comprised of the terrace gravels of the Snake River Group, and the upper and middle sand, silt, and gravel units of the Glenns Ferry Formation. The saturated thickness of this aquifer ranges from 300 to about 550 feet.

The base of the aquifer is assumed to be the blue clay layers which underlie the upper and middle sand, silt, and gravel units of the Glenns Ferry Formation. In the South Lake Lowell area this layer is generally encountered between 2000 and 2100 feet msl. elevation (Stevens, 1962). The base elevation of the modeled aquifer is therefore set at 2000 feet msl. A small upward leakage of groundwater from the deeper confined aquifer (.001 ft/day) (Newton, 1991) is imposed uniformly over the model area.

A combination of flow-specified and head-specified analytic elements are used to represent hydrologic features. Flow-specified analytic elements are used to represent wells and on-farm loss. Specified flows for these elements, i.e. pumping rates and on-farm infiltration rates are fixed, and are obtained from the Boise Basin water budget and IDWR well data base. Pumping rates from primary supply wells are the maximum annual allowable by water right.

Near-field surficial hydrologic features including canals, drains, Lake Lowell, and a portion of the Snake River are all represented by strings of head-specified analytic elements, for which a msl. elevation head and a bed resistance are specified. Canal, drain, river, and reservoir elevations are taken from USGS digital elevation maps.

Canal bed resistance refers to properties of a constructed canal liner or a natural feature which resists canal seepage loss. In most cases in the South Lake Lowell area it takes the form of a natural feature such as a localized hardpan layer or a clay lens below the bottom of a canal and at or near the watertable surface. With the onset of irrigation, canal seepage causes head to build up beneath the canal above the resistance layer. Canal seepage becomes head-dependent when head buildup causes the saturated surface to come in contact with the canal. Groundwater pumping lowers the watertable in the vicinity of the canal so that head buildup above the resistance bed is reduced. Drillers' logs indicate shallow low permeability hard pans and clay lenses are common within alluvial interbedded silts, sands and gravels of the Glenns Ferry Formation. (See for example 2N2W23CBB1, 2N3W13DAA1, 2W28DDD1, 2N2W30BBA-4 and 2N2W07CBC1 in table 2).

Modeled bed resistances are defined as the thickness of the low permeability bed divided by its vertical hydraulic conductivity. Modeled canal bed resistances for near-field hydrologic boundaries range from 0.5 to 300.0 ft/(ft/min) and are derived through model calibration. More distant hydrologic boundaries (e.g. Boise River) are represented by far-field head-specified analytic elements for which only an elevation is specified.

Regardless of which type of boundary condition is imposed, the model will calculate the unspecified condition. Thus, for head-specified canal, drain and river elements, the model will calculate the seepage rate or base flow, and for flow-specified wells the model will calculate the head at the well bore.

The distribution of analytic elements that make up the South Lake Lowell model is shown in figure 9. The model contains 1,546 head-specified line source-sink elements representing canals and drains, Lake Lowell, and a portion of the Snake River. The latter is represented by two parallel strings of line source-sink elements representing the north bank and the south bank of the river. In addition the model contains 976 flow-specified wells, and 38 flow-specified infiltration areas representing the spatial distribution of on-farm loss. Three permeability zones are used to represent fault zones and other aquifer inhomogeneities.

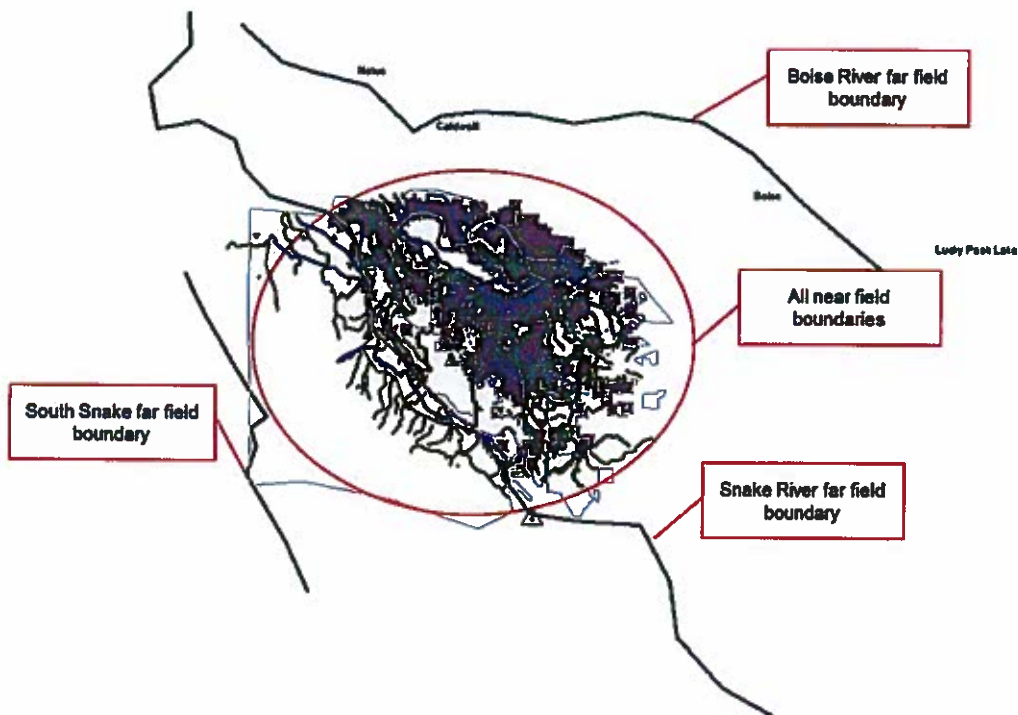


Figure 9. South Lake Lowell analytic element model near-field and far-field boundaries.

South Lake Lowell Base Case Model Calibration

Calibration targets for the South Lake Lowell base case model include groundwater elevations in observation wells, seepage from canals, groundwater returns to drains, Lake Lowell gains and losses, and Snake River base flow, prior to 2003. Calibration parameters include aquifer permeabilities and bed resistances. Calibration parameters are adjusted in order to achieve the best possible match between targeted and modeled conditions of aquifer head, Lake Lowell gains and losses, canal seepage, drain return and Snake River base flow, on an average annual basis.

The head conditions imposed on Lake Lowell, drains, and the Snake River, are therefore annual averages. However the head conditions imposed on canals are representative of conditions that exist during the irrigation season, i.e. the model assumes that canal seepage occurs at a uniform rate, year around. As a result, canal bed resistances are presumed to represent about twice their actual value. Whether canal loss or drain return occurs uniformly throughout the year, or all within a six month period during the year is not important from a steady-state modeling perspective, so long as the annual total is the same in both cases.

All of the 43 observation wells used in model calibration have an open interval in the upper aquifer, (i.e. above 2000 feet msl. elevation). Annual average groundwater elevations range from 2212 feet msl. to 2637 feet msl. The average difference between observed and simulated well head in the calibrated model is 13 feet, and the root mean square difference is 21 feet. The model deviation from observed head is about 5 percent of the total range in head (figure 10).

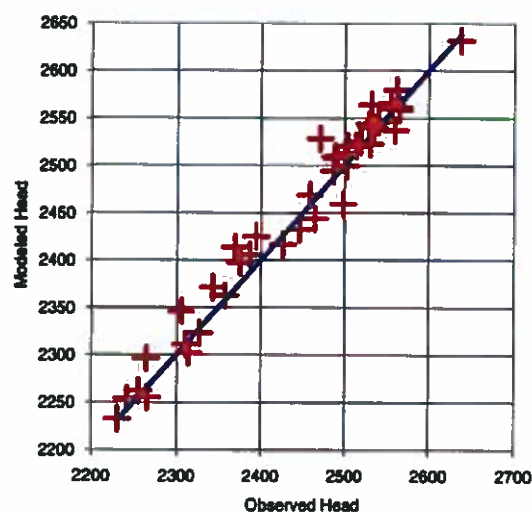


Figure 10. Base case model calibration with respect to observation well levels (in feet msl.).

Model calibration with respect to calculated flows for head-specified analytic elements includes targeted and modeled seepage from Lake Lowell, targeted and modeled groundwater return to drains, targeted and modeled seepage rates from the Mora Canal and from all other canals in the model area, and targeted and modeled base flow to the Snake River.

On average, annual Lake Lowell gains and losses are comparatively small, netting about 3,752 acre-feet annually. Lake Lowell net gain in the calibrated model is 3,816 acre-feet, which is within 2 percent of the Lake Lowell target. The water budget estimate of average monthly seepage from the Mora Canal is 118,128 acre-feet, and the calibrated model estimate of seepage is 115,272 acre-feet, which is within 2 percent of the Mora Canal target. The water budget estimate of average annual reach gain to the Snake River is 128,400 acre-feet, and the model estimate is 137,400 acre-feet, a difference of 7 percent. The water budget estimate of average annual groundwater return flow to drains in the South Lake Lowell model area is 133,488 acre-feet, and the model estimate is 129,372 acre-feet, a difference of 3 percent (all of which occurs north of the New York Canal). The water budget estimate of average annual canal seepage in the model area (north of the Snake River) is 266,604 acre-feet, and the model estimate, is 291,156 acre-feet, a difference of 9 percent.

Calibrated aquifer permeabilities range from 0.1 to 75 feet/day, which is comparable to the Treasure Valley groundwater model (Petrich, 2002) and to the earlier USGS model (Newton, 1991). One area of higher permeability is associated with a geologic structure just south of Lake Lowell. Another low permeability area follows the exposure of several faults along the north rim of the Snake River Canyon (figure 4).

Base Case Model Results: Groundwater Elevations

Groundwater elevation contours generated by the calibrated base case model range from about 2600 feet msl. beneath a portion of the Mora Canal south of Lake Lowell, to about 2300 feet msl. beneath the Snake River (figure 11). The groundwater gradient in the South Lake Lowell area is generally to the south or southwest, toward the Snake River. An area of elevated groundwater exists north and east of the Mora Canal and south of the Deer Flat Highline Canal in an area referred to on topographic maps as "Deer Flat". At its highest, groundwater elevation in the "Deer Flat" area is about 2555 feet msl. North of the Deer Flat Highline Canal, groundwater elevation gradually declines from 2545 feet msl. beneath the canal to 2530 feet msl. at the boundary of Lake Lowell. South and west of the Mora Canal groundwater elevations also decline from between 2550 and 2500 feet msl. along the canal to about

2300 feet beneath the Snake River. A steep groundwater gradient also exists along the north rim of the Snake River Canyon due to low permeability fault zones and tilted beds which limit the flow of groundwater toward the Snake River.

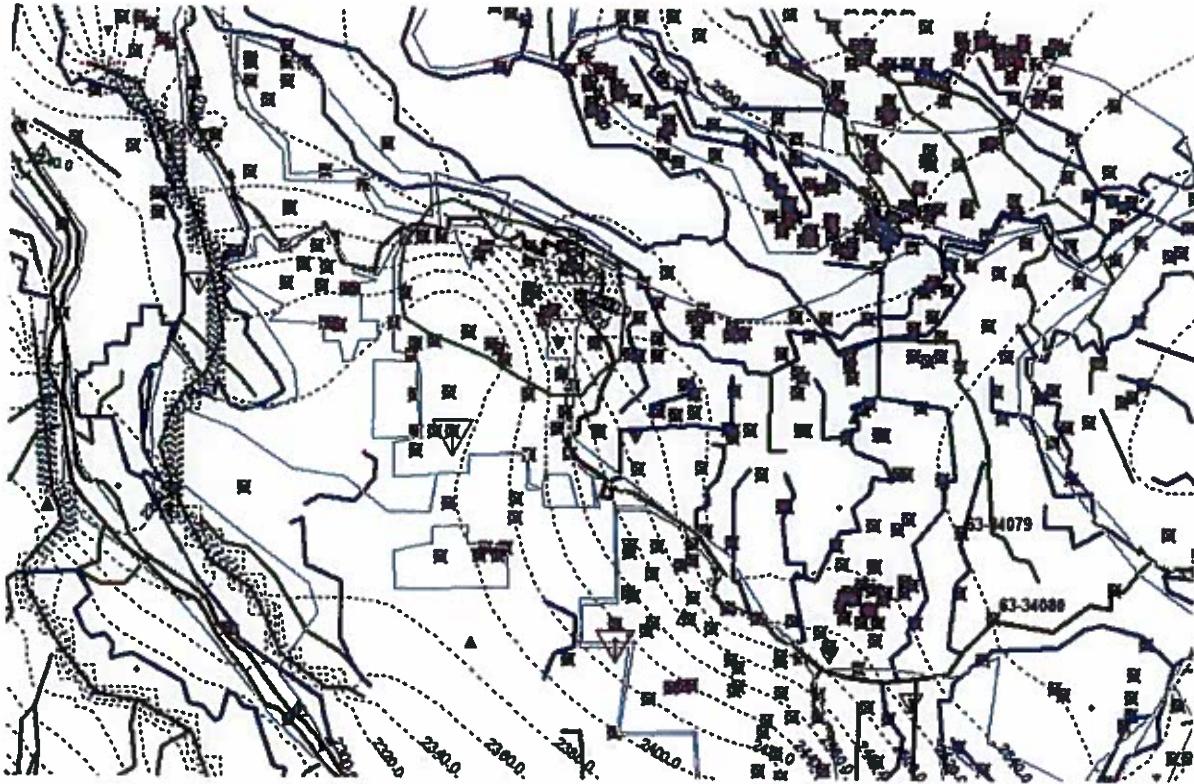


Figure 11. Base case model head contours in the South Lake Lowell area and locations of proposed Emmert wells 63-34079 and 63-37080.

Base Case Model Results: Groundwater and Surface Water Interactions

Hydrologic interactions between surface water features and groundwater in the South Lake Lowell model area depend in part on the degree of physical contact that exists between the surface water feature and the saturated surface of the underlying aquifer. In GFLOW modeling, if the saturated surface beneath a canal is less than the specified-head in the canal minus the resistance bed thickness then canal seepage is head-independent and the canal is said to be percolating. If the aquifer head is greater than the specified head in the canal minus the resistance layer thickness, then the canal seepage is head-dependent. By lowering the aquifer head, groundwater pumping induces additional seepage beneath a head-dependent canal. However lowering aquifer head beneath a percolating canal has no effect on seepage.

A large portion of Lake Lowell is known to be in direct contact with the saturated surface of the underlying aquifer, and the watertable in much of the "Deer Flat" area north and south of the Deer Flat Highline canal is also close to the surface (Table 1), so that some canals and drains may also be in direct contact with the underlying saturated surface. In modeling with GFLOW, it is not necessary to know in advance which lakes, rivers, canals or drains are above the saturated surface of the aquifer and which are in contact with it. GFLOW incorporates an iterative procedure for making this determination when the model is run. In those cases where head-specified canals are perched, GFLOW automatically determines the seepage rate based on bed resistance, and converts the head-specified canal to a flow-specified (percolating) canal. Discharge to drains occurs only if the drain is in direct contact with the underlying saturated surface. In those cases where a head-specified drain is perched, specified flow is zero.

Locations where GFLOW base case modeling indicates direct canal contact with the saturated surface of the aquifer are indicated in figure 12 by heavy colored lines. Three BOC canals have segments in direct contact with the underlying saturated surface; a portion of the Deer Flat Highline Canal just south of Lake Lowell where aquifer head beneath the canal during the irrigation season ranges from 2547 to 2554 feet msl., a portion of the Mora Canal further to the west where aquifer head beneath the canal ranges from 2645 to 2642 feet msl., and a portion of the New York Canal in the last few miles before it discharges into Lake Lowell where aquifer head ranges from 2542 to 2529 feet msl.

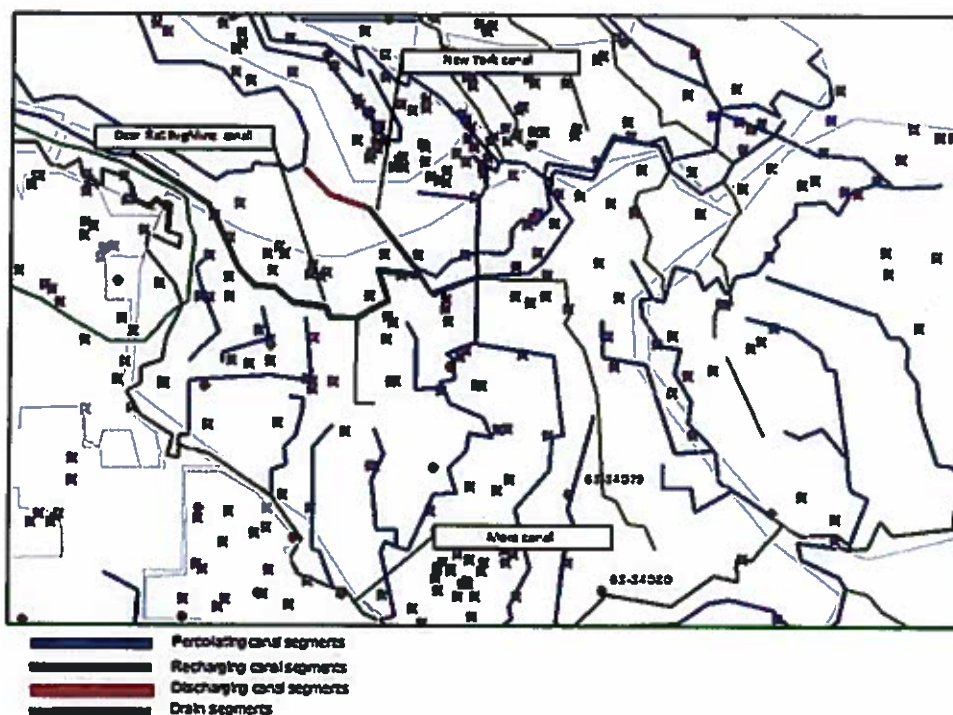


Figure 12. Locations of BOC canal in contact with the aquifer saturated surface.

The Emmert Well Pumping Model

The Emmert well model is simply the base case model incorporating the two proposed Emmert wells, applications 63-34079 in T2N-R2W-35, and 63-34080 in T1N-R2W-1 (locations shown in figure 11). The wells are assumed to fully penetrate the upper aquifer, i.e. well depth extends to 2000 feet msl. elevation. Three Emmert well pumping scenarios are developed to simulate three possible total pumping rates; 42 AF per year, 235 AF per year and 668 AF per year.

At the outset of well pumping, groundwater that is withdrawn from the aquifer comes mainly from aquifer storage. In an unconfined aquifer this is termed specific yield. However as well pumping continues and a cone of depression expands about the new wells, the proportion of well withdrawal that comes from specific yield diminishes, and the proportion of well withdrawal that comes from surface water sources increases.

Over time, the impact of the proposed well pumping is expected to be a depletion of surface water, either through reduced discharge to drains, increased seepage from canals, reduced gains or increased losses from Lake Lowell, or reduced base flow to the Snake River. The total (steady-state) surface water

depletion that results from proposed Emmert well pumping is expected to be equivalent in magnitude to total well withdrawal.

Comparative Analysis of Base Case Model and Emmert Model Results

Estimating surface water depletions in the South Lake Lowell model area involves a comparative analysis of calibrated base case model results with Emmert well model results. The impacts of proposed Emmert well pumping are summarized in terms of four categories of potential surface water depletion;

- increased Lake Lowell seepage (or reduced gains)
- increased canal seepage (or reduced gains)
- reduced groundwater discharge to drains
- reduced Snake River and Boise River base flow.

Depletions are calculated by subtracting the flow of every head-specified element in the Emmert well model from the flow of every comparable head-specified element in the base case model.

Model -Wide Surface Water Depletions

The depletions that occur in each of the four categories, for each of the three Emmert well pumping scenarios are presented in tables 2, 3 and 4. Table 2 gives model results for the 42 AF per year pumping scenario, table 3 gives results for the 235 AF per year pumping scenario, and table 4 gives results for the 668 AF per year pumping scenario.

The three tables are all formatted the same. Column 1 is the model boundary feature in question, where a distinction is made between near field and far field boundary features (see figure 10). Columns 2 and 3 are the recharge and discharge flow rates associated with that boundary feature in the base case model. Columns 4 and 5 are the recharge and discharge flow rates associated with that boundary feature given the additional pumping rates of each scenario. Columns 6 and 7 are the changes in recharge and discharge rates for each feature, and column 8 is the total depletion from each feature due to increased recharge and/or reduced discharge. Column 9 is total depletion as a percentage of new pumping. As noted in the last row of each table the depletions sum to the Emmert well pumping rate of each scenario.

Total depletions increase proportionally to pumping rate in tables 3 and 4, so that while the magnitude of pumping impacts increases, percentage wise the distribution of depletions is unchanged from Table 2.

Constant proportionality of depletions with respect to pumping rate is not a given, it occurs in this case because even the highest pumping rate being simulated (668 AF per year) is not high enough to cause head conditions beneath canals that are in direct contact with the underlying saturated surface to become percolating features, or in the case of drains to become perched.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 42 AF pumping	5. Discharge 42 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 42 AF pumping
Lake Lowell (near field)	(6,058.90)	9,250.39	(6,059.21)	9,249.83	0.31	0.56	0.87	2.1%
canals (near field)	(307,396.42)	100,164.87	(307,404.75)	100,162.07	8.32	2.80	11.12	26.5%
drains (near field)	-	122,199.95	-	122,185	-	15.37	15.37	36.6%
Snake River (near field)	-	138,333.81	-	138,331	-	3.14	3.14	7.5%
Snake River (far field)	-	773,232.94	-	773,227	-	5.50	5.50	13.1%
Boise River (far field)	-	32,612.16	-	32,608	-	3.73	3.73	8.9%
South of Snake River (drains)	(782,017.85)		(782,015.58)		2.27		2.27	5.4%
total	(1,095,473.2)	1,175,794.1	(1,095,479.5)	1,175,763.0	10.9	31.1	42.0	100.0%

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 235 AF pumping	5. Discharge 235 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 235 AF pumping
Lake Lowell (near field)	(6,058.90)	9,250.39	(6,060.63)	9,247.24	1.73	3.15	4.89	2.1%
canals (near field)	(307,396.42)	100,164.87	(307,442.92)	100,149.23	46.50	15.64	62.14	26.4%
drains (near field)	-	122,199.95	-	122,114	-	85.93	85.93	36.6%
Snake River (near field)	-	138,333.81	-	138,316	-	17.70	17.70	7.5%
Snake River (far field)	-	773,232.94	-	773,202	-	30.88	30.88	13.1%
Boise River (far field)	-	32,612.16	-	32,591	-	20.90	20.90	8.9%
South of Snake River (drains)	(782,017.85)		(782,030.42)		12.57		12.57	5.3%
total	(1,095,473.2)	1,175,794.1	(1,095,534.0)	1,175,619.9	60.8	174.2	235.0	100.0%

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 668 AF pumping	5. Discharge 668 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 668 AF pumping
Lake Lowell (near field)	(9,058.90)	9,250.39	(8,063.83)	9,241.42	4.83	8.97	13.90	2.1%
canals (near field)	(307,396.4)	100,164.87	(307,529.67)	100,121.36	133.24	43.51	176.75	26.5%
drains (near field)	-	122,198.95	-	121,955	-	244.47	244.47	36.6%
Snake River (near field)	-	138,333.81	-	138,284	-	50.29	50.29	7.5%
Snake River (far field)	-	773,232.94	-	773,145	-	87.81	87.81	13.1%
Boise River (far field)	-	32,612.16	-	32,553	-	59.33	59.33	8.9%
South of Snake River (drains)	(782,017.85)		(782,053.25)		35.40		35.40	5.3%
total	(1,095,473.2)	1,175,794.1	(1,095,646.8)	1,175,299.7	173.6	494.4	668.0	100.0%

Model Results: Individual Drain Depletions

Tables 5, 6 and 7 give a breakdown of individual drain depletions for each of the three pumping scenarios. Model results indicate that four drains, the Elijah, Wilson, Golden Gulch and Herron account for nearly all drain depletion. All four are located north of the New York Canal. Model results also indicate that on an average annual basis, there is no direct contact between drains and the underlying saturated surface south of the New York Canal. As noted in the last row of each table, individual drain depletions due to Emmert well pumping sum to the total drain depletion of each scenario.

Table 5. Modeled drain depletions for head-specified drain boundaries with 42 AF of new well pumping.				
1. Model boundary feature	2. Recharge base case, AF	3. Discharge 42 AF pumping	4. Reduced discharge, AF	5. Percent change with 42 AF pumping
Elijah Drain	23758.9	23753.3	5.6	13.4%
Wilson Drain	51574.1	51571.2	3.0	7.1%
Golden Gulch Drain	531.6	529.3	2.3	5.4%
Herron Drain	4538.6	4537.8	0.8	1.9%
all other drains north of Snake River	41798.6	41793.0	3.7	8.8%
total	122199.9	122184.6	15.4	36.6%

Table 6. Modeled drain depletions for head-specified drain boundaries with 235 AF of new well pumping.				
1. Model boundary feature	2. Recharge base case, AF	3. Discharge 235 AF pumping	4. Reduced discharge, AF	5. Percent change with 235 AF pumping
Elijah Drain	23758.9	23727.47494	31.5	13.4%
Wilson Drain	51574.1	51557.53028	16.6	7.1%
Golden Gulch Drain	531.6	518.865437	12.7	5.4%
Herron Drain	4538.6	4534.12888	4.5	1.9%
all other drains north of Snake River	41798.6	41776.01807	20.6	8.8%
total	122199.9	122114.0	85.9	36.6%

Table 7. Modeled drain depletions for head-specified drain boundaries with 668 AF of new well pumping.				
1. Model boundary feature	2. Recharge base case, AF	3. Discharge 668 AF pumping	4. Reduced discharge, AF	5. Percent change with 668 AF pumping
Elijah Drain	23758.9	23669.42604	89.5	13.4%
Wilson Drain	51574.1	51526.82483	47.2	7.1%
Golden Gulch Drain	531.6	495.353495	36.3	5.4%
Herron Drain	4538.6	4525.831474	12.8	1.9%
all other drains north of Snake River	41798.6	41737.94554	58.7	8.8%
total	122199.9	121955.5	244.5	36.6%

Model Results: Individual BOC Canal Depletions

Canal depletions occur in canal segments where the canal is in direct contact with the underlying saturated surface of the aquifer, so that lowering aquifer head due to pumping causes either an increase in canal seepage (or a decrease in canal gain). Model results indicate that the impact of Emmert well pumping on BOC canal seepage is limited to segments of three canals; the New York Canal, the Deer Flat Highline Canal and the Mora Canal, where base case model results indicate the canals are in direct contact with the underlying saturated surface (see figure 13). Tables 8, 9 and 10, show, for each of the three pumping scenarios, the magnitude of each BOC canal depletion and the percentage of new pumping that it represents. Table formatting is the same as that of the previous summary tables. As noted in the last row of each table, individual canal depletions due to Emmert well pumping sum to the total canal depletion of each scenario.

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 42 AF pumping	5. Discharge 42 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 42 AF pumping
Deer Flat High Line Canal	(44,268.54)	-	-	(44,273.31)	4.77	-	4.77	11.3%
New York Canal	(192.24)	41.71	(192.00)	41.66	0.24	0.05	0.29	0.7%
Mora Canal	(35,747.72)	-	(35,750.63)	-	2.91	-	2.91	6.9%
All other canals ¹	(202,158.80)	97,857.04	(202,156.64)	97,856.05	2.16	0.98	3.16	7.5%
total	(307,396.42)	100,164.87	(307,388.10)	100,162.07	8.32	2.80	11.12	26.5%

¹ depletions are from non-BOC canals

1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 235 AF pumping	5. Discharge 235 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 235 AF pumping
Deer Flat High Line Canal	(44,268.54)	-	(44,295.17)	-	26.63	-	26.63	11.3%
New York Canal	(192.24)	41.71	(193.60)	41.44	1.35	0.28	1.63	0.7%
Mora Canal	(35,747.72)	-	(35,763.96)	-	16.24	-	16.24	6.9%
All other canals ¹	(202,158.80)	97,857.04	(202,170.82)	97,851.52	12.11	5.52	17.64	7.5%
total	(307,396.42)	100,164.87	(307,442.92)	100,149.23	46.50	15.64	62.14	26.4%

¹ depletions are from non-BOC canals

Table 1. Modeled canal depletions of head-specified BOC and non-BOC canal boundaries with 668 AF of new well pumping.								
1. Model boundary feature	2. Recharge base case, AF	3. Discharge base case, AF	4. Recharge 668 AF pumping	5. Discharge 668 AF pumping	6. Increased recharge, AF	7. Reduced discharge, AF	8. Total change in recharge and discharge, AF	9. Percent change with 668 AF pumping
Deer Flat High Line Canal	(44,288.54)		(44,344.29)		75.75	-	75.75	11.3%
New York Canal	(192.24)	41.71	(196.21)	41.04127088	3.97	0.67	4.64	0.7%
Mora Canal	(35,747.72)	-	(35,783.91)	-	48.19	-	48.19	8.9%
All other canals ¹	(202,158.80)	97,857.04	(202,193.69)	97,841.77	34.89	15.27	50.17	7.5%
total	(307,396.42)	100,164.87	(307,529.67)	100,121.36	133.24	43.51	176.75	26.5%

¹ depletions are from non-BOC canals

Summary and Conclusions

The South Lake Lowell AEM model has been demonstrated to be a conceptually valid and well calibrated model of unconfined flow conditions in the upper (cold water) aquifer in this area of the Boise Basin.

Because it uses analytical methods instead of grid based numerical methods, the model is able to calculate the relatively small amounts of individual canal, drain, and reservoir depletion that result from pumping of individual wells.

GFLOW is a steady state model, meaning that model results are representative of an aquifer system in which inflows and outflows are presumed to be in equilibrium, and a mass water balance can be calculated that does not include change in aquifer storage. GFLOW modeled depletions should therefore be interpreted as representing aquifer conditions which develop over the course of several years of new pumping, and after aquifer storage in the vicinity of the pumping wells has been depleted.

While it is generally not possible to directly measure the surface water depletions that result from a single new well, it is possible to measure the depletions that result from the cumulative effects of many new wells that begin pumping at about the same time. The 30 to 40 percent increase in depletions from the Mora Canal that followed a 38 percent increase in groundwater pumping south of Lake Lowell in the South Lake Lowell area in 1977, is evidence for this. In this regard, the 2 to 4 year time lag between the onset of pumping and the Mora Canal seepage response can be seen as a rough indicator of the time lag that would exist between onset of proposed Emmert well pumping and increased BOC canal seepage.

Drains account for the largest percentage of depletions due to Emmert well pumping, combined Boise and Snake River depletions are second largest, and canal depletions are third. Percentagewise Lake Lowell depletions are the smallest. And, since depletions increase in proportion to pumping rate, the percentage distribution is the same for all three Emmert well pumping scenarios (42, 235 or 668 AF per year). Depletion of BOC surface facilities accounts for 21.1% of proposed Emmert well pumping, of which 2.1% is Lake Lowell depletion and 19% is BOC canal depletion.

South Lake Lowell model results show directly, what historical records of Mora Canal loss and groundwater pumping show indirectly, i.e. that portions of the Deer Flat Highline Canal, the Mora Canal and Lake Lowell are in direct contact with the underlying saturated surface of the aquifer, and therefore canal seepage is dependent on aquifer head. Ultimately, new groundwater pumping will result in increased seepage from these canals and from Lake Lowell.

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Appendix A GFLOW Iterative Solver Log, Base Case Model

Appendix B GFLOW Computational Results, Base Case Model

Appendix A

GFLOW Iterative Solver Log, Base Case Model

GFLOW Solver, latest update April 29, 2015

Time for transient solutions is set to 0.0000000E+00

No file "converge.tab" found.

No convergence criteria will be applied.

No file "relax.tab" found, relaxation factor for streamflow is set to 1.0

Solving groundwater flow problem

generating collocation point vector

Solution # 1. Number of equations: 1374

generating matrix coefficients

writing coefficient matrix to disk, size=1778

generating known vector

decomposing the matrix

Matrix condition number = 0.7519E+08

writing decomposed matrix to disk, size=1778

forward elimination and back substitution (solve)

Number of equations removed are 404

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.8982E-13 %

44 line sinks without resistance: max. error= 0.3850E-07 %
1081 line sinks with resistance: max. error= 0.7790E+02 %
18 drain elements with resistance: max. error= 0.1257E+02 %
inhomogeneity domain IN_000522_ has as max. error= 0.3707E-05 %
inhomogeneity domain IN_000753_ has as max. error= 0.5878E-06 %
open slurry wall HB_000817_ has as max. error= 0.2513E-07 %

Total flow across slurry wall = -0.1075E+07

open slurry wall HB_000818_ has as max. error= 0.7823E-08 %

Total flow across slurry wall = 0.6463E+07

Redo solution to check for percolating surface waters.

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 2. Number of equations: 1520

generating known vector

Number of equations removed are 258

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.4491E-12 %

44 line sinks without resistance: max. error= 0.2074E-08 %

913 line sinks with resistance: max. error= 0.4376E+06 %

332 drain elements with resistance: max. error= 0.6305E+06 %

inhomogeneity domain IN_000522_ has as max. error= 0.7472E-07 %

inhomogeneity domain IN_000753_ has as max. error= 0.3836E-07 %

open slurry wall HB_000817_ has as max. error= 0.1753E-08 %

Total flow across slurry wall = 0.1996E+07

open slurry wall HB_000818_ has as max. error= 0.6575E+01 %

Total flow across slurry wall = 0.9723E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Found overinfiltration	-24.61	at LS_000223_0201
Found overinfiltration	-30.78	at LS_000224_0051
Found overinfiltration	-23.44	at LS_000224_0101
Found overinfiltration	-166.8	at LS_000474_0038
Found overinfiltration	-582.2	at LS_000474_0051
Found overinfiltration	-784.3	at LS_000474_0101
Found overinfiltration	-804.1	at LS_000474_0151
Found overinfiltration	-827.1	at LS_000474_0201
Found overinfiltration	-895.2	at LS_000473_0026
Found overinfiltration	-680.5	at LS_000473_0051
Found overinfiltration	-270.7	at LS_000473_0076
Found overinfiltration	-24.28	at LS_000364_0101
Found overinfiltration	-22.26	at LS_000364_0201
Found overinfiltration	-19.33	at LS_000364_0301
Found overinfiltration	-18.14	at LS_000364_0401
Found overinfiltration	-16.48	at LS_000364_0501
Found overinfiltration	-13.51	at LS_000364_0601
Found overinfiltration	-49.84	at LS_000362_0101
Found overinfiltration	-43.85	at LS_000362_0201
Found overinfiltration	-11.62	at LS_000360_0101
Found overinfiltration	-13.33	at LS_000360_0201

Found overinfiltration	-13.80	at LS_000360_0301
Found overinfiltration	-15.05	at LS_000360_0401
Found overinfiltration	-17.29	at LS_000360_0501
Found overinfiltration	-17.33	at LS_000475_0101
Found overinfiltration	-14.61	at LS_000475_0201
Found overinfiltration	-10.06	at LS_000370_0101
Found overinfiltration	-7.561	at LS_000370_0201
Found overinfiltration	-4.244	at LS_000370_0301
Found overinfiltration	-1.715	at LS_000370_0401
Found overinfiltration	-43.76	at LS_000476_0101
Found overinfiltration	-146.7	at LS_000476_0201
Found overinfiltration	-234.3	at LS_000476_0301
Found overinfiltration	-161.4	at LS_000373_0101
Found overinfiltration	-147.1	at LS_000373_0201
Found overinfiltration	-435.0	at LS_000369_0101
Found overinfiltration	-343.0	at LS_000369_0201
Found overinfiltration	-235.6	at LS_000369_0301
Found overinfiltration	-597.7	at LS_000367_0101
Found overinfiltration	-765.4	at LS_000367_0201
Found overinfiltration	-454.7	at LS_000367_0301
Found overinfiltration	-658.6	at LS_000367_0401
Found overinfiltration	-32.34	at LS_000542_1001
Found overinfiltration	-30.56	at LS_000542_1051
Found overinfiltration	-28.26	at LS_000542_1101
Found overinfiltration	-2692.	at LS_000798_0101
Found overinfiltration	-2070.	at LS_000798_0201
Found overinfiltration	-2405.	at LS_000798_0301

Found overinfiltration	-31.31	at LS_000755_0101
Found overinfiltration	-67.82	at LS_000755_0201
Found overinfiltration	-76.58	at LS_000755_0301
Found overinfiltration	-55.54	at LS_000755_0401
Found overinfiltration	-35.58	at LS_000756_0101
Found overinfiltration	-40.20	at LS_000756_0201
Found overinfiltration	-37.29	at LS_000756_0251
Found overinfiltration	-28.85	at LS_000756_0301
Found overinfiltration	-22.44	at LS_000756_0351
Found overinfiltration	-18.16	at LS_000756_0401
Found overinfiltration	-5.853	at LS_000756_0501
Found overinfiltration	-256.6	at LS_000765_0101
Found overinfiltration	-365.2	at LS_000765_0201
Found overinfiltration	-336.2	at LS_000766_0101
Found overinfiltration	-240.4	at LS_000766_0201
Found overinfiltration	-151.8	at LS_000766_0301
Found overinfiltration	-109.4	at LS_000766_0351
Found overinfiltration	-7.211	at LS_000766_0401

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 3. Number of equations: 849

generating known vector

Number of equations removed are 929

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.1796E-12 %

*** WARNING: well WL_002831 pumped dry!

*** WARNING: well WL_003010 pumped dry!

*** WARNING: well WL_003011 pumped dry!

*** WARNING: well WL_003247 pumped dry!

*** WARNING: well WL_003249 pumped dry!

*** WARNING: well WL_003252 pumped dry!

*** WARNING: well WL_003325 pumped dry!

*** WARNING: well WL_003337 pumped dry!

44 line sinks without resistance: max. error= 0.2872E-07 %

416 line sinks with resistance: max. error= 0.7132E+05 %

158 drain elements with resistance: max. error= 0.1811E+04 %

inhomogeneity domain IN_000522_ has as max. error= 0.7029E-05 %

inhomogeneity domain IN_000753_ has as max. error= 0.2984E-06 %

open slurry wall HB_000817_ has as max. error= 0.5731E+05

Total flow across slurry wall = -0.9071E+06

open slurry wall HB_000818_ has as max. error= 0.2444E+06

Total flow across slurry wall = -0.3852E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Found overinfiltration -73.67 at LS_000223_0201

Found overinfiltration -75.39 at LS_000224_0051

Found overinfiltration	-74.39	at LS_000224_0101
Found overinfiltration	-3.830	at LS_000474_0038
Found overinfiltration	-11.21	at LS_000474_0051
Found overinfiltration	-12.99	at LS_000474_0101
Found overinfiltration	-13.82	at LS_000474_0151
Found overinfiltration	-16.34	at LS_000474_0201
Found overinfiltration	-26.21	at LS_000473_0026
Found overinfiltration	-40.52	at LS_000473_0051
Found overinfiltration	-48.07	at LS_000473_0076
Found overinfiltration	-17.29	at LS_000370_0501
Found overinfiltration	-16.62	at LS_000370_0601
Found overinfiltration	-17.29	at LS_000370_0701
Found overinfiltration	-340.5	at LS_000374_0101
Found overinfiltration	-401.4	at LS_000374_0201
Found underinfiltration	28.26	at LS_000797_0026
Found underinfiltration	28.26	at LS_000797_0051
Found underinfiltration	28.26	at LS_000797_0201
Found underinfiltration	28.26	at LS_000797_0301
Found underinfiltration	2405.	at LS_000267_0201
Found underinfiltration	2405.	at LS_000267_0251
Found underinfiltration	2405.	at LS_000267_0301
Found underinfiltration	2405.	at LS_000267_0351
Found underinfiltration	2405.	at LS_000267_0401
Found underinfiltration	2405.	at LS_000267_0501
Found underinfiltration	2405.	at LS_000267_0601
Found underinfiltration	2405.	at LS_000247_0101
Found underinfiltration	2405.	at LS_000247_0151

Found underinfiltration	2405.	at LS_000247_0201
Found overinfiltration	-30.76	at LS_000755_0101
Found overinfiltration	-36.41	at LS_000755_0201
Found overinfiltration	-38.88	at LS_000755_0301
Found overinfiltration	-38.76	at LS_000755_0401
Found overinfiltration	-38.37	at LS_000756_0101
Found overinfiltration	-38.13	at LS_000756_0201
Found overinfiltration	-37.18	at LS_000756_0251
Found overinfiltration	-35.77	at LS_000756_0301
Found overinfiltration	-34.37	at LS_000756_0351
Found overinfiltration	-32.93	at LS_000756_0401
Found overinfiltration	-30.81	at LS_000756_0501
Found overinfiltration	-1.427	at LS_000765_0101
Found overinfiltration	-6.245	at LS_000765_0201
Found overinfiltration	-11.03	at LS_000766_0101
Found overinfiltration	-19.26	at LS_000766_0201
Found overinfiltration	-25.74	at LS_000766_0301
Found overinfiltration	-26.77	at LS_000766_0351
Found overinfiltration	-26.77	at LS_000766_0401

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 4. Number of equations: 903

generating known vector

Number of equations removed are 875

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.3593E-12 %

44 line sinks without resistance: max. error= 0.1928E-08 %

476 line sinks with resistance: max. error= 0.3125E+04 %

152 drain elements with resistance: max. error= 0.1481E+04 %

inhomogeneity domain IN_000522_ has as max. error= 0.3461E-06 %

inhomogeneity domain IN_000753_ has as max. error= 0.2205E-07 %

open slurry wall HB_000817_ has as max. error= 0.1411E-08 %

Total flow across slurry wall = 0.1400E+07

open slurry wall HB_000818_ has as max. error= 0.8046E+00 %

Total flow across slurry wall = 0.8899E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Found overinfiltration -27.43 at LS_000474_0026

Found overinfiltration -19.94 at LS_000766_0501

Found overinfiltration -10.52 at LS_000766_0551

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 5. Number of equations: 930

generating known vector

Number of equations removed are 848

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.8982E-13 %

44 line sinks without resistance: max. error= 0.5760E-08 %

481 line sinks with resistance: max. error= 0.1498E+04 %

174 drain elements with resistance: max. error= 0.1130E+04 %

inhomogeneity domain IN_000522_ has as max. error= 0.7653E-06 %

inhomogeneity domain IN_000753_ has as max. error= 0.7047E-07 %

open slurry wall HB_000817_ has as max. error= 0.2780E-08 %

Total flow across slurry wall = 0.1393E+07

open slurry wall HB_000818_ has as max. error= 0.2926E+01 %

Total flow across slurry wall = 0.7688E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Found overinfiltration -28.41 at LS_000474_0026

Found underinfiltration 27.43 at LS_000364_0101

Found underinfiltration 27.43 at LS_000364_0201

Found underinfiltration 27.43 at LS_000364_0301

Found overinfiltration -34.92 at LS_000766_0501

Found overinfiltration -31.56 at LS_000766_0551

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 6. Number of equations: 851

generating known vector

Number of equations removed are 927

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.4491E-12 %

44 line sinks without resistance: max. error= 0.1007E-09 %

433 line sinks with resistance: max. error= 0.3891E+03 %

143 drain elements with resistance: max. error= 0.6655E+02 %

inhomogeneity domain IN_000522_ has as max. error= 0.1203E-06 %

inhomogeneity domain IN_000753_ has as max. error= 0.1280E-07 %

open slurry wall HB_000817_ has as max. error= 0.4076E-09 %

Total flow across slurry wall = 0.1392E+07

open slurry wall HB_000818_ has as max. error= 0.3142E+01 %

Total flow across slurry wall = 0.7498E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 7. Number of equations: 879

generating known vector

Number of equations removed are 899

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.2695E-12 %

44 line sinks without resistance: max. error= 0.7094E-10 %

452 line sinks with resistance: max. error= 0.6512E+02 %

152 drain elements with resistance: max. error= 0.7661E+01 %

inhomogeneity domain IN_000522_ has as max. error= 0.8384E-08 %

inhomogeneity domain IN_000753_ has as max. error= 0.6563E-09 %

open slurry wall HB_000817_ has as max. error= 0.3591E-10 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3059E+01 %

Total flow across slurry wall = 0.7360E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 8. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.2695E-12 %

44 line sinks without resistance: max. error= 0.9770E-11 %

459 line sinks with resistance: max. error= 0.1651E+01 %

155 drain elements with resistance: max. error= 0.1050E+01 %

inhomogeneity domain IN_000522_ has as max. error= 0.2181E-08 %

inhomogeneity domain IN_000753_ has as max. error= 0.2278E-09 %

open slurry wall HB_000817_ has as max. error= 0.8511E-11 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3063E+01 %

Total flow across slurry wall = 0.7359E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 9. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.2695E-12 %

44 line sinks without resistance: max. error= 0.5457E-12 %

459 line sinks with resistance: max. error= 0.2382E+00 %

155 drain elements with resistance: max. error= 0.2432E+00 %

inhomogeneity domain IN_000522_ has as max. error= 0.1215E-09 %

inhomogeneity domain IN_000753_ has as max. error= 0.9875E-11 %

open slurry wall HB_000817_ has as max. error= 0.7748E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 10. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.0000E+00 %

44 line sinks without resistance: max. error= 0.0000E+00 %

459 line sinks with resistance: max. error= 0.3508E-01 %

155 drain elements with resistance: max. error= 0.5404E-01 %

inhomogeneity domain IN_000522_ has as max. error= 0.6800E-12 %

inhomogeneity domain IN_000753_ has as max. error= 0.1016E-12 %

open slurry wall HB_000817_ has as max. error= 0.1022E-11 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 11. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.7186E-12 %

44 line sinks without resistance: max. error= 0.0000E+00 %

459 line sinks with resistance: max. error= 0.5269E-02 %

155 drain elements with resistance: max. error= 0.1312E-01 %

inhomogeneity domain IN_000522_ has as max. error= 0.4459E-13 %

inhomogeneity domain IN_000753_ has as max. error= 0.5080E-13 %

open slurry wall HB_000817_ has as max. error= 0.7186E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 12. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.8982E-13 %

44 line sinks without resistance: max. error= 0.0000E+00 %
 459 line sinks with resistance: max. error= 0.7848E-03 %
 155 drain elements with resistance: max. error= 0.3120E-02 %
 inhomogeneity domain IN_000522_ has as max. error= 0.6688E-13 %
 inhomogeneity domain IN_000753_ has as max. error= 0.1016E-12 %
 open slurry wall HB_000817_ has as max. error= 0.7126E-12 %
 Total flow across slurry wall = 0.1388E+07
 open slurry wall HB_000818_ has as max. error= 0.3064E+01 %
 Total flow across slurry wall = 0.7358E+06
 Solving stream flow problem
 Relaxation factor in use: 0.1000000D+01
 Resolve groundwater flow.
 Solving groundwater flow problem
 generating collocation point vector
 loading coefficient matrix from disk, size=1778
Solution # 13. Number of equations: 889
 generating known vector
 Number of equations removed are 889
 loading decomposed matrix from disk, size=1778
 loading coefficient matrix from disk, size=1778
 substituting the solution vector
 loading coefficient matrix from disk, size=1778
 Maximum errors in boundary conditions:
 checking boundary conditions
 error in head at the reference point: 0.4491E-12 %
 44 line sinks without resistance: max. error= 0.0000E+00 %
 459 line sinks with resistance: max. error= 0.1203E-03 %

155 drain elements with resistance: max. error= 0.7578E-03 %

inhomogeneity domain IN_000522_ has as max. error= 0.6688E-13 %

inhomogeneity domain IN_000753_ has as max. error= 0.5080E-13 %

open slurry wall HB_000817_ has as max. error= 0.8226E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 14. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.1796E-12 %

44 line sinks without resistance: max. error= 0.0000E+00 %

459 line sinks with resistance: max. error= 0.1792E-04 %

155 drain elements with resistance: max. error= 0.1833E-03 %

inhomogeneity domain IN_000522_ has as max. error= 0.6688E-13 %

inhomogeneity domain IN_000753_ has as max. error= 0.7620E-13 %

open slurry wall HB_000817_ has as max. error= 0.7669E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 15. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.8084E-12 %

44 line sinks without resistance: max. error= 0.0000E+00 %

459 line sinks with resistance: max. error= 0.2824E-05 %

155 drain elements with resistance: max. error= 0.4459E-04 %

inhomogeneity domain IN_000522_ has as max. error= 0.4459E-13 %

inhomogeneity domain IN_000753_ has as max. error= 0.5080E-13 %

open slurry wall HB_000817_ has as max. error= 0.8696E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

Solving stream flow problem

Relaxation factor in use: 0.1000000D+01

Resolve groundwater flow.

Solving groundwater flow problem

generating collocation point vector

loading coefficient matrix from disk, size=1778

Solution # 16. Number of equations: 889

generating known vector

Number of equations removed are 889

loading decomposed matrix from disk, size=1778

loading coefficient matrix from disk, size=1778

substituting the solution vector

loading coefficient matrix from disk, size=1778

Maximum errors in boundary conditions:

checking boundary conditions

error in head at the reference point: 0.4491E-12 %

44 line sinks without resistance: max. error= 0.0000E+00 %

459 line sinks with resistance: max. error= 0.4123E-06 %

155 drain elements with resistance: max. error= 0.1084E-04 %

inhomogeneity domain IN_000522_ has as max. error= 0.6688E-13 %

inhomogeneity domain IN_000753_ has as max. error= 0.7620E-13 %

open slurry wall HB_000817_ has as max. error= 0.6814E-12 %

Total flow across slurry wall = 0.1388E+07

open slurry wall HB_000818_ has as max. error= 0.3064E+01 %

Total flow across slurry wall = 0.7358E+06

TOTAL SOLUTION TIME = 16172 E-2 seconds

Ending with stream flow calculations without correcting for negative flows.

You may click on line-sink vertices of gray stream sections to verify that residual negative stream flows are not too large.

Relaxation factor in use: 0.1000000D+01

File BASE1.SOL already exists; REPLACE? (Yes/No/Quit) >

File BASE1.SOL has been reopened and assigned to LU: 2

Total number of bytes written: 657012

Time for transient solutions is set to 0.0000000E+00

File BASE1.XTR already exists; REPLACE? (Yes/No/Quit) >

File BASE1.GRI already exists; REPLACE? (Yes/No/Quit) >

File BASE1.GRI has been reopened and assigned to LU: 2

Total number of bytes written: 32616

File BASE1.GRD already exists; REPLACE? (Yes/No/Quit) >

File BASE1.GRD has been reopened and assigned to LU: 3

File BASE1.PTH already exists; REPLACE? (Yes/No/Quit) >

File BASE1.PTH has been reopened and assigned to LU: 10

Appendix B

GFLOW Computational Results, Base Case Model

Label	X1	Y1	X2	Y2	Specified Head	Calculated Head	Discharge	Total Discharge	Percent Error
180, Drain(NULL)	544864.0019	4808753.9988	544633.9998	4808209.015	3067	2518.727	0	0	0
180, Drain(NULL)	544633.9998	4808209.015	542975.8269	4808515.004	2838.55	2524.049	0	0	0
180, Drain(NULL)	542975.8269	4808515.004	542387.1362	4808803.009	2808.5	2542.932	0	0	0
180, Drain(NULL)	542387.1362	4808803.009	542125.8616	4808750.005	2754.5	2551.59	0	0	0
548, Drain(NULL)	545789.2528	4810552.988	546109.8719	4811213.002	2872.09	2540.042	0	0	0
548, Drain(NULL)	546109.8719	4811213.002	546474.9309	4811309.989	2902.03	2541.262	0	0	0
548, Drain(NULL)	546474.9309	4811309.989	546857.8206	4811779.991	2840.01	2541.606	0	0	0
551, Drain(NULL)	544120.3204	4810176.011	543360.6978	4810589.991	3011.86	2549.749	0	0	0
551, Drain(NULL)	543360.6978	4810589.991	543114.6938	4810892.993	2880.52	2556.887	0	0	0
551, Drain(NULL)	543114.6938	4810892.993	542666.6987	4811030	2780.67	2561.182	0	0	0
553, Drain(NULL)	543899.6147	4809768.006	542156.3721	4809884.013	2822.6	2550.607	0	0	0
662, Drain(NULL)	545773.4337	4809496.003	546110.3901	4809257.009	3038.3	2525.289	0	0	0
662, Drain(NULL)	546110.3901	4809257.009	546865.2578	4809179.011	2973.94	2521.855	0	0	0
662, Drain(NULL)	546865.2578	4809179.011	547416.6105	4808781.003	2894.92	2518.245	0	0	0
663, Drain(NULL)	545480.1246	4808919.992	545781.389	4808325.997	3054.58	2516.88	0	0	0
663, Drain(NULL)	545781.389	4808325.997	545674.993	4807629.987	2960.51	2507.125	0	0	0
663, Drain(NULL)	545674.993	4807629.987	545749.8728	4807354.996	2891.47	2501.033	0	0	0
1178, Drain(NULL)	548617.2482	4802148	547486.8669	4801771.999	3049.5	2453.464	0	0	0
1178, Drain(NULL)	547486.8669	4801771.999	546798.312	4800968	3003	2444.846	0	0	0
1178, Drain(NULL)	546798.312	4800968	546820.2388	4800800.001	2977.6	2438.538	0	0	0
1178, Drain(NULL)	546820.2388	4800800.001	545610.64	4800509.998	2948.41	2434.312	0	0	0
1178, Drain(NULL)	545610.64	4800509.999	545411.3618	4799924.999	2909.95	2427.171	0	0	0
1178, Drain(NULL)	545411.3618	4799924.999	544854.0654	4799686.999	2884.66	2420.911	0	0	0
1178, Drain(NULL)	544854.0654	4799686.999	544127.6356	4799686.999	2857.14	2417.81	0	0	0
1178, Drain(NULL)	544127.6356	4799686.999	543799.8232	4799322.001	2832	2414.148	0	0	0
1178, Drain(NULL)	543799.8232	4799322.001	543109.5122	4799635	2806.21	2412.695	0	0	0
1178, Drain(NULL)	543109.5122	4799635	541533.94	4800865.999	2749.25	2421.117	0	0	0

1180,Drain(NULL)	542720.7398	4798886.001	542413.8871	4798815	2755.57	2401.867	0	0	0
1180,Drain(NULL)	542413.8671	4788815	541853.3704	4799089.999	2725.75	2402.276	0	0	0
1180,Drain(NULL)	541853.3704	4799089.999	541543.7546	4789402.999	2691.55	2405.888	0	0	0
1180,Drain(NULL)	541543.7546	4799402.999	541522.449	4799947	2659.63	2411.986	0	0	0
1180,Drain(NULL)	541522.449	4799947	540807.3882	4800126.999	2618.67	2416.673	0	0	0
1181,Drain(NULL)	543124.0511	4805370.992	542796.635	4805328.015	2635.87	2492.683	0	0	0
1181,Drain(NULL)	542796.635	4805328.015	542205.1401	4804912.999	2618.98	2492.093	0	0	0
1181,Drain(NULL)	542205.1401	4804912.999	542014.4267	4804955.001	2804.26	2490.979	0	0	0
1181,Drain(NULL)	542014.4267	4804955.001	541803.8099	4805272.999	2796.01	2494.941	0	0	0
1181,Drain(NULL)	541803.8099	4805272.999	540981.2462	4805598.007	2774.71	2503.275	0	0	0
1181,Drain(NULL)	540981.2462	4805598.007	540520.0533	4806558.005	2743.43	2521.85	0	0	0
1182,Drain(NULL)	532883.9903	4805031.993	533453.9358	4804334.001	2881.76	2390.575	0	0	0
1182,Drain(NULL)	533453.9358	4804334.001	533986.7567	4804457.994	2782.5	2400.644	0	0	0
1182,Drain(NULL)	533986.7567	4804457.994	534356.5706	4804165.996	2712.71	2410.227	0	0	0
1183,Drain(NULL)	520679.78	4812807.99	520684.0625	4813009.006	2682.07	2386.785	0	0	0
1183,Drain(NULL)	520684.0625	4813009.006	521193.938	4812497.003	2682.04	2386.442	0	0	0
1183,Drain(NULL)	521193.938	4812497.003	521697.3426	4812393.005	2682	2385.565	0	0	0
1183,Drain(NULL)	521697.3426	4812393.005	522281.2815	4811793.006	2681.96	2384.1	0	0	0
1183,Drain(NULL)	522281.2815	4811793.006	523006.9372	4810614.009	2681.88	2378.367	0	0	0
1183,Drain(NULL)	523006.9372	4810614.009	523755.4437	4810150.012	2681.8	2373.716	0	0	0
1183,Drain(NULL)	523755.4437	4810150.012	524416.0062	4809445.985	2681.74	2365.282	0	0	0
1912,Drain(NULL)	516326.5685	4827188.855	516105.4361	4826587.998	2411.95	2348.511	0	0	0
1912,Drain(NULL)	516105.4361	4826587.998	515907.563	4826450.015	2361.13	2339.221	0	0	0
1913,Drain(NULL)	515907.563	4826450.015	515830.6589	4826417.615	2344.21	2334.029	0	0	0
1914,Drain(NULL)	515827.6414	4826415.877	515747.8448	4826345.987	2337.92	2330.886	0	0	0
1916,Drain(NULL)	515747.8448	4826345.987	515551.1238	4826243.513	2327.91	2325.475	0	0	0
1920,Drain(NULL)	515551.1238	4826243.513	515141.3751	4826093.003	2315.46	2314.112	0	0	0
1920,Drain(NULL)	515141.3751	4826093.003	515134.9072	4825563.992	2302.15	2302.434	2.638186	0	1.56E-10
1920,Drain(NULL)	515134.9072	4825563.992	514711.0005	4825453.99	2288.82	2290.097	12.77221	0	6.98E-11
1920,Drain(NULL)	514711.0005	4825453.99	513586.001	4826330.015	2262.9	2270.324	74.24487	0	4.01E-11
1920,Drain(NULL)	513586.001	4826330.015	513247.3448	4826449.497	2238.33	2255.196	168.6649	0	6.32E-11

1920, Drain(NULL)	513247.3448	4828449.497	513232.1993	4826317.061	2231.8	2251.099	192.9861	0	8.15E-11
1921, DrainUpper	528469.45	4825112.004	528901.3821	4825771.012	2443.18	2528.472	85.29187	0	3.60E-12
Embankment Drain									
1921, DrainUpper	528901.3821	4825771.012	528816.0076	4827539.004	2438.36	2528.292	87.93197	0	7.09E-11
Embankment Drain									
1922, DrainUpper	528469.45	4825112.004	528421.3221	4825067.991	2442.79	2528.193	213.5063	0	1.19E-11
Embankment Drain									
1923, DrainUpper	528424.2482	4824967.005	528421.3221	4825067.991	2444.21	2528.336	210.3157	0	1.73E-12
Embankment Drain									
1925, DrainWilson Drain	531172.5078	4824718.995	531103.8059	4824767.003	2455.99	2487.653	79.1574	0	8.94E-12
1928, DrainWilson Drain	531243.9225	4824681.992	531172.5078	4824718.995	2460.6	2484.89	60.72466	0	6.27E-12
1927, Drain(NULL)	517384.7183	4824726.005	516811.4383	4824679.005	2402.39	2386.611	0	0	0
1928, DrainElijah Drain	533678.4515	4824467.992	533660.194	4824556.994	2460.6	2474.683	35.20699	0	1.41E-13
1930, DrainElijah Drain	533693.9963	4824419.986	533678.4515	4824467.992	2465.52	2474.199	21.69758	0	1.33E-12
1931, Drain(NULL)	516811.4383	4824678.005	516620.9987	4824378.99	2345.13	2335.997	0	0	0
1932, Drain(NULL)	516820.9987	4824378.99	516554.5589	4824332.508	2325.28	2324.92	0	0	0
1933, Drain(NULL)	516551.5932	4824330.497	516461.156	4824277.004	2316.82	2317.467	647.0751	0	5.34E-11
1934, DrainLower									
Embankment Waste									
1935, DrainLower	520451.3751	4824215.008	520736.8508	4824534.438	2530.1	2492.688	0	0	0
Embankment Waste									
1936, Drain(NULL)	520316.4371	4824018.991	520451.3751	4824215.008	2569.87	2486.734	0	0	0
1936, Drain(NULL)	516461.156	4824277.004	516123.4071	4824252.986	2295.66	2308.907	132.471	0	2.00E-10
1938, DrainUpper	516123.4071	4824252.986	515731.3612	4823870.279	2255.08	2288.154	330.9363	0	3.70E-10
Embankment Drain									
1938, DrainUpper	528246.5498	4822895.986	528146.423	4823866.012	2482.65	2530.341	47.69076	0	3.53E-11
Embankment Drain									
1939, DrainElijah Drain	528146.423	4823866.012	528424.2482	4824987.005	2459.85	2530.101	70.25085	0	3.48E-11
1939, DrainElijah Drain	535761.6986	4822455.001	534622.9304	4823271.012	2483.17	2483.29	11.99327	0	6.95E-12
1939, DrainElijah Drain	534522.9304	4823271.012	534210.3275	4823788.011	2477.61	2476.936	0	0	0
1939, DrainElijah Drain	534210.3275	4823798.011	534012.1161	4823812.001	2475.45	2475.506	5.562814	0	3.64E-10
1939, DrainElijah Drain	534012.1161	4823812.001	533930.2488	4824415.993	2473.31	2474.122	81.224	0	3.27E-12
1939, DrainElijah Drain	533930.2468	4824415.993	533683.9963	4824418.996	2471.07	2473.258	218.781	0	9.09E-14
1940, DrainWilson Drain	534227.7621	4821929.008	534161.7424	4822398.004	2483.27	2484.898	182.7889	0	9.78E-13
1940, DrainWilson Drain	534161.7424	4822398.004	533214.5764	4822833.014	2478.15	2480.709	155.8727	0	1.31E-12
1940, DrainWilson Drain	533214.5764	4822833.014	533055.1965	4823192.008	2475.25	2477.268	201.8278	0	2.87E-12
1940, DrainWilson Drain	533055.1965	4823192.008	532777.9504	4823276.996	2473.4	2475.583	216.2538	0	8.28E-12
1940, DrainWilson Drain	532777.9504	4823276.996	532521.004	4823835.014	2470.94	2473.276	233.5987	0	9.60E-12

1940, DrainWilson Drain	532521.004	4823835.014	532173.0138	4823850.985	2468.32	2470.919	259.8946	0	1.75E-12
1940, DrainWilson Drain	532173.0138	4823850.985	531243.9225	4824681.982	2463.99	2470.148	615.7661	0	1.51E-12
1941, DrainWilson Drain	534268.7577	4821867.987	534227.7621	4821829.008	2487.35	2488.823	3.682369	0	5.66E-12
1942, DrainWilson Drain	534268.7577	4821867.987	534314.5691	4821826.991	2489.61	2489.564	0	0	0
1943, DrainWilson Drain	534680.1767	4821377.015	534625.2518	4821681.998	2489.88	2492.411	25.31331	0	1.07E-11
1943, DrainWilson Drain	534625.2518	4821681.998	534314.5691	4821826.991	2489.36	2490.601	12.41258	0	1.40E-11
1946, DrainAaron Drain	537558.8603	4819785.014	537153.9945	4820945.998	2529.75	2525.307	0	0	0
1946, DrainAaron Drain	537153.9945	4820945.998	536704.2821	4821464.005	2514.82	2512.921	0	0	0
1946, DrainAaron Drain	536704.2621	4821464.005	536049.4298	4821839.001	2503.59	2502.842	0	0	0
1946, DrainAaron Drain	536049.4298	4821839.001	535761.6998	4822455.001	2492.4	2492.896	49.58839	0	2.31E-11
1947, DrainElijah Drain	539975.9853	4819480.001	539290.2462	4819951.008	2544.73	2546.356	162.6229	0	4.61E-12
1947, DrainElijah Drain	538280.2462	4819951.008	538975.7536	4819868.011	2538.54	2539.821	128.0956	0	5.59E-12
1947, DrainElijah Drain	538975.7536	4819868.011	538963.6835	4820216.002	2534.93	2536.863	195.2919	0	6.11E-13
1947, DrainElijah Drain	538963.6835	4820216.002	538103.7513	4820994.004	2526.87	2528.726	185.649	0	1.38E-13
1947, DrainElijah Drain	538103.7513	4820994.004	538008.867	4821848.988	2517.12	2518.496	137.6405	0	1.33E-11
1947, DrainElijah Drain	538008.867	4821648.988	537544.1994	4822081.012	2510.19	2511.167	99.70301	0	3.61E-12
1947, DrainElijah Drain	537544.1994	4822081.012	536388.117	4822455.001	2500.18	2500.588	40.76473	0	3.00E-11
1947, DrainElijah Drain	536388.117	4822455.001	535761.6966	4822455.001	2490.33	2490.829	49.90679	0	1.56E-11
1948, DrainElijah Drain	540044.931	4819416.999	539975.9853	4819480.001	2549.18	2553.337	10.39182	0	3.59E-13
1949, DrainWilson Drain	536471.1815	4819404.99	536188.1747	4819597.014	2519.41	2521.412	200.1721	0	5.01E-12
1949, DrainWilson Drain	536188.1747	4819597.014	536181.1948	4819962.987	2515.51	2517.167	165.6903	0	8.08E-12
1949, DrainWilson Drain	536181.1948	4819962.987	535733.1998	4820630.987	2509.08	2510.707	162.7131	0	5.94E-13
1949, DrainWilson Drain	535733.1998	4820630.987	534903.9304	4821345.011	2498.63	2499.832	120.2017	0	1.14E-11
1949, DrainWilson Drain	534903.9304	4821345.011	534680.1767	4821377.015	2491.37	2493.002	163.1645	0	1.35E-11
1950, DrainElijah Drain	540088.2431	4819393.986	540044.931	4819416.999	2549.18	2554.396	13.04007	0	1.62E-12
1951, DrainHerron Drain	535923.6998	4819179.011	535430.9906	4820139.009	2518.67	2517.177	0	0	0
1951, DrainHerron Drain	535430.9906	4820139.009	534707.8362	4821013.998	2503.17	2503.895	72.54109	0	2.37E-11
1951, DrainHerron Drain	534707.6392	4821013.998	534680.1767	4821377.015	2492.68	2494.538	185.8129	0	4.11E-12
1952, DrainElijah Drain	540381.6131	4819164.015	540088.2431	4819393.986	2554.1	2557.113	30.1327	0	1.77E-13
1953, Drain(NULL)	539157.323	4819137.985	539207.8759	4819226.987	2558.14	2549.393	0	0	0
1954, Drain(NULL)	539157.9326	4819026.001	539157.323	4819137.985	2559.02	2550.125	0	0	0

1955, Drain(NULL)	539122.7586	4818960.012	539157.9328	4818028.001	2558.02	2550.844	0	0	0
1956, DrainGolden Gulch Drain	540409.8242	4818512.993	540185.5022	4818803.01	2563.95	2562.405	0	0	0
1957, DrainGolden Gulch Drain	540409.6242	4818512.993	540535.2628	4818233.003	2564.32	2565.305	9.84861	0	1.58E-11
1957, DrainGolden Gulch Drain	540535.2628	4818233.003	540412.2455	4818076.488	2562.22	2566.63	44.08651	0	6.67E-12
1958, DrainGarland Drain	534231.1758	4817049.485	534232.7608	4817123.013	2550.69	2542.386	0	0	0
1959, DrainGarland Drain	534231.1758	4817049.485	534256.1999	4817019.991	2550.82	2542.781	0	0	0
1960, DrainGarland Drain	534284.3634	4816962.993	534256.1999	4817019.991	2548.18	2543.102	0	0	0
1961, DrainGolden Gulch Drain	540328.4255	4816702.999	540229.3655	4817197.994	2584.57	2571.87	0	0	0
1961, DrainGolden Gulch Drain	540229.3655	4817197.994	540002.1981	4817398.998	2577.63	2569.5	0	0	0
1961, DrainGolden Gulch Drain	540002.1981	4817398.998	540412.2455	4818076.488	2568.21	2567.687	0	0	0
1962, DrainGarland Drain	535426.6014	4816933.976	534547.924	4816589.003	2551.36	2546.083	0	0	0
1962, DrainGarland Drain	534547.924	4816589.003	534284.3634	4816962.993	2549.72	2544.711	0	0	0
1963, Drain(NULL)	539067.1328	4816495.003	539041.8647	4816970.003	2595.35	2565.675	0	0	0
1963, Drain(NULL)	539041.8647	4816970.003	538681.8654	4817306.015	2589.17	2562.508	0	0	0
1963, Drain(NULL)	538681.8654	4817306.015	538806.5591	4817745.994	2583.1	2559.528	0	0	0
1963, Drain(NULL)	538806.5591	4817745.994	538483.3771	4818386.988	2575.62	2555.104	0	0	0
1963, Drain(NULL)	538483.3771	4818386.988	538555.7392	4818585.982	2569.73	2550.997	0	0	0
1963, Drain(NULL)	538555.7392	4818585.982	538981.8191	4818704.986	2565.57	2551.372	0	0	0
1963, Drain(NULL)	538981.8191	4818704.986	539122.7586	4818960.012	2560.88	2551.703	0	0	0
1964, DrainGolden Gulch Drain	540052.4291	4816245.006	540129.1778	4816419.892	2594.27	2572.258	0	0	0
1964, DrainGolden Gulch Drain	540129.1778	4816419.892	540383.0152	4816446.897	2592.32	2571.689	0	0	0
1965, DrainGarland Drain	540383.0152	4816446.897	540328.4255	4816702.999	2590.06	2573.024	0	0	0
1965, DrainGarland Drain	537223.245	4816230.498	537139.7603	4818898.985	2572.04	2555.79	0	0	0
1966, DrainGarland Drain	537139.7603	4816898.985	535431.6306	4816935.073	2560.64	2549.201	0	0	0
1966, Drain(NULL)	520860.3405	4816645.544	520548.9804	4816968.205	2354.07	2263.221	0	0	0
1966, Drain(NULL)	520548.9804	4816968.205	520138.4308	4817291.659	2350.77	2262.331	0	0	0
1967, Drain(NULL)	520558.5946	4816141.496	519990.7187	4816852.991	2355.78	2259.378	0	0	0
1967, Drain(NULL)	519990.7187	4816852.991	520114.1109	4817188.238	2348.91	2260.108	0	0	0
1968, DrainGolden Gulch	540046.2417	4815816	540052.4291	4818245.006	2603.32	2573.589	0	0	0

Drain

1969, Drain(NULL)	520865.6562	4815683.991	520628.2505	4815988.883	2457.89	2398.845	0	0	0
1970, Drain(NULL)	521819.6254	4815672.013	521439.046	4816119.154	2460.88	2402.845	0	0	0
1970, Drain(NULL)	521438.046	4816119.154	520991.7306	4816503.903	2438.7	2405.343	0	0	0
1971, Drain(NULL)	520887.3305	4815646.958	520865.6562	4815683.991	2504.92	2398.616	0	0	0
1972, Drain(NULL)	520909.8309	4815600.598	520890.1256	4815642.996	2514.16	2398.472	0	0	0
1973, Drain(NULL)	520851.3446	4815582.01	520913.1258	4815603.006	2521.65	2398.388	0	0	0
1974, DrainEast Valley	518882.3744	4816146.007	518883.0298	4815845.983	2267.11	2248.333	0	0	0
Mound West	518883.0298	4815845.993	518421.4681	4815521.99	2266.52	2242.251	0	0	0
1974, DrainEast Valley	518421.4681	4815521.99	518389.4371	4815181.986	2265.91	2237.557	0	0	0
Mound West	518389.4371	4815181.986	518186.0314	4815178.989	2262.77	2235.086	0	0	0
1975, DrainEast Valley	537791.5142	4814874.006	537514.8777	4815578.988	2594.51	2563.709	0	0	0
Mound West	537514.8777	4815578.988	537138.8764	4816073.008	2582.66	2559.973	0	0	0
1977, DrainGarland Drain	537138.8764	4816073.008	537223.245	4816230.488	2576.61	2557.867	0	0	0
1977, DrainGarland Drain	518186.0314	4815178.989	518258.4062	4814604.988	2253.68	2232.249	0	0	0
Mound West	518258.4062	4814604.989	517885.4895	4814864.597	2242.67	2229.865	0	0	0
1978, DrainEast Valley	533415.7444	4814536.998	533080.0733	4814541.997	2567.07	2548.58	0	0	0
Mound West	533080.0733	4814541.997	533071.3814	4816135.004	2557.23	2547.288	0	0	0
1979, DrainCoulee Drain	541024.0096	4813927.002	540292.0019	4815436.006	2641.05	2579.112	0	0	0
1979, DrainCoulee Drain	538924.3643	4811768.988	538731.6363	4812200.005	2644.49	2568.618	0	0	0
1981, DrainGolden Gulch Drain	538731.6363	4812200.005	538393.4332	4812259.015	2639.1	2567.653	0	0	0
1984, DrainGarland Drain	538393.4332	4812259.015	538180.317	4812890.002	2633.85	2566.563	0	0	0
1984, DrainGarland Drain	538180.317	4812890.002	537900.3887	4812800.004	2628.48	2565.648	0	0	0
1984, DrainGarland Drain	537900.3887	4812800.004	537791.5142	4814674.006	2614.08	2565.88	0	0	0
1985, Drain(NULL)	534228.0869	4809881.026	534041.3159	4809549.007	2669.94	2494.348	0	0	0
1985, Drain(NULL)	534041.3159	4809549.007	534066.7362	4809085.991	2668.5	2479.792	0	0	0
1985, Drain(NULL)	534066.7362	4809085.991	534442.4327	4808610.985	2666.72	2471.373	0	0	0
1985, Drain(NULL)	534442.4327	4808610.985	534536.6159	4808085.995	2664.88	2467.875	0	0	0
1986, Drain(NULL)	536301.3165	4809688.995	536269.1906	4808662.253	2669.02	2526.626	0	0	0

1986, Drain(NULL)	536269.1908	4808662.253	536237.0848	4807657.51	2687.87	2509.892	0	0
1987, Drain(NULL)	535028.4412	4807359.995	535047.2474	4808085.991	2680.73	2480.653	0	0
1988, Drain(NULL)	536221.8246	4807224.511	536237.0848	4807657.51	2687.29	2487.444	0	0
1988, Drain(NULL)	535077.3616	4807181.992	535028.4412	4807359.995	2680.73	2483.906	0	0
1990, Drain(NULL)	535084.372	4807133.01	535077.3616	4807181.992	2680.73	2483.056	0	0
1991, Drain(NULL)	535118.5708	4807075.007	535084.372	4807133.01	2680.73	2482.911	0	0
1992, Drain(NULL)	537681.5728	4806830.008	536923.3218	4808831.014	2682.21	2510.512	0	0
1993, Drain(NULL)	535118.5708	4807075.007	535225.8602	4808491.985	2650.89	2480.771	0	0
1994, Drain(NULL)	536221.8246	4806831.014	536247.0011	4806488.998	2654.01	2483.762	0	0
1995, Drain(NULL)	536221.8246	4807224.511	536247.0011	4806488.998	2657.45	2488.885	0	0
1996, Drain(NULL)	536247.0011	4806488.998	535225.8602	4808491.985	2644.33	2472.357	0	0
1997, Drain(NULL)	539515.7373	4806542.003	537834.491	4806487.992	2680.08	2525.549	0	0
1997, Drain(NULL)	537834.491	4806487.992	537825.0117	4806830.009	2687.82	2516.758	0	0
1997, Drain(NULL)	537825.0117	4806830.009	537681.5728	4806830.009	2684.88	2518.434	0	0
1998, Drain(NULL)	535225.8602	4806481.985	535028.2642	4806188.008	2639.85	2454.404	0	0
1998, Drain(NULL)	535028.2642	4806188.008	535064.1333	4805370.992	2635.97	2446.424	0	0
1998, Drain(NULL)	535064.1333	4805370.992	535454.8259	4804639.502	2630.56	2444.338	0	0
1998, Drain(NULL)	539173.9955	4804371.004	538499.9913	4804555.987	2672.52	2485.495	0	0
1998, Drain(NULL)	538499.9913	4804555.987	538127.3733	4804409.013	2680.1	2482.935	0	0
1998, Drain(NULL)	538127.3733	4804409.013	538120.7591	4804221.012	2653.46	2478.552	0	0
1998, Drain(NULL)	538120.7591	4804221.012	537486.135	4804138.99	2644.11	2473.592	0	0
1998, Drain(NULL)	537486.135	4804138.99	536612.121	4803218.988	2622.56	2457.695	0	0
2000, Drain(NULL)	535454.8259	4804638.502	536612.121	4803218.988	2618.04	2448.238	0	0
2001, Drain(NULL)	536612.121	4803218.988	536879.3697	4802616.999	2577.73	2441.701	0	0
2001, Drain(NULL)	536879.3697	4802616.999	536475.3878	4802169.001	2519.32	2431.723	0	0
2001, Drain(NULL)	536475.3878	4802169.001	535928.2413	4801884.001	2462.88	2419.652	0	0
2002, DrainJensen Wasteway	540608.3843	4800641.999	540514.9836	4800549.001	2594.87	2424.358	0	0
2003, DrainJensen Wasteway	540514.9836	4800549.001	540471.9863	4800503.001	2581.81	2423.418	0	0
2005, Drain(NULL)	536266.1121	4800912.999	538037.9898	4800807.999	2398.27	2394.471	0	0
2005, Drain(NULL)	536037.9998	4800807.999	536011.8784	4800474.999	2390.63	2386.418	0	0

2005, Drain(NULL)	536011.8784	4800474.999	535106.0128	4800300.001	2374.23	2374.743	51.34403	0	5.30E-12
2006, Drain(NULL)	535106.0128	4800300.001	534943.8897	4800208.999	2360.54	2364.671	10.32802	0	9.27E-12
2007, Drain(NULL)	534897.743	4800276.001	534943.8897	4800209.999	2360.54	2362.999	6.147684	0	3.08E-12
2008, Drain(NULL)	534943.8897	4800208.999	534878.1138	4800157.001	2358.9	2361.831	7.326773	0	1.14E-11
2008, Drain(NULL)	532821.1759	4799875	532817.1172	4799874	2322.65	2322.327	0	0	0
2010, Drain(NULL)	532817.1172	4799874	532580.7448	4799886	2316.44	2318.512	20.71862	0	8.78E-12
2010, Drain(NULL)	532580.7448	4799886	532152.8668	4800610.001	2296.38	2312.755	163.7496	0	2.02E-11
2010, Drain(NULL)	532152.8668	4800610.001	531703.1342	4800627.999	2272.36	2305.502	331.4234	0	4.24E-11
2010, Drain(NULL)	531703.1342	4800627.999	531568.3399	4800507.1	2260.59	2301.391	408.0083	0	9.03E-11
2011, Drain(NULL)	534402.7478	4800224.999	533633.3716	4799885	2348.25	2344.228	0	0	0
2011, Drain(NULL)	533633.3716	4799885	532921.1759	4799875	2332.02	2329.108	0	0	0
2012, Drain(NULL)	534878.1138	4800157.001	534266.746	4798529	2351.39	2350.852	0	0	0
2012, Drain(NULL)	534266.746	4798529	533688.2635	4799423.999	2338.92	2335.825	0	0	0
2013, Drain(NULL)	533688.2635	4799423.999	532918.4937	4799428.001	2329.97	2325.204	0	0	0
2013, Drain(NULL)	532918.4937	4799428.001	532767.6177	4799820.001	2324.74	2318.934	0	0	0
2013, Drain(NULL)	532767.6177	4799820.001	532817.1172	47999874	2322.16	2318.715	0	0	0
2014, Drain(NULL)	535232.6267	4797934	534686.7604	4798373	2412.04	2323.629	0	0	0
2014, Drain(NULL)	534686.7604	4798373	534353.614	4798445	2403.75	2323.331	0	0	0
2014, Drain(NULL)	534353.614	4798445	534156.4988	4798266	2398.92	2319.649	0	0	0
2014, Drain(NULL)	534156.4988	4798266	533777.6334	4798335.001	2393.73	2315.635	0	0	0
2014, Drain(NULL)	533777.6334	4798335.001	533283.2478	4798154.001	2386.48	2310.792	0	0	0
2015, Drain(Jensen Drain)	540471.9863	4800503.001	539848.8837	4799199.999	2559.76	2413.448	0	0	0
2015, Drain(Jensen Drain)	539848.8837	4799199.999	539448.2546	4799073.001	2531.32	2401.002	0	0	0
2015, Drain(Jensen Drain)	539448.2546	4799073.001	538948.9922	4798375	2511.82	2392.13	0	0	0
2015, Drain(Jensen Drain)	538948.9922	4798375	538383.2529	4798242	2489.86	2381.484	0	0	0
2015, Drain(Jensen Drain)	538383.2529	4798242	538039.0118	4798499.002	2474.45	2378.558	0	0	0
2015, Drain(Jensen Drain)	538039.0118	4798499.002	537642.7413	4798505	2461.85	2376.954	0	0	0
2015, Drain(Jensen Drain)	537642.7413	4798505	537482.2641	4798090	2449.02	2370.077	0	0	0
2015, Drain(Jensen Drain)	537482.2641	4798090	537291.888	4798068.999	2439.31	2363.971	0	0	0
2015, Drain(Jensen Drain)	537291.888	4798068.999	537198.861	4797395.001	2426.01	2355.845	0	0	0
2015, Drain(Jensen Drain)	537198.861	4797395.001	536547.7473	4797578.999	2405.3	2346.26	0	0	0

453, CanalDeer Flat Low	515127.3451	4827801.986	515514.4076	4827352.965	2458.54	2326.811	-0.5	0	0
Line Cana	515514.4076	4827352.985	516332.4512	4827187.936	2452.24	2340.244	-0.5	0	0
453, CanalDeer Flat Low	515127.3451	4827801.986	514914.4057	4827586.002	2451.88	2319.636	-0.5	0	0
Line Cana	514914.4057	4827586.002	515085.874	4827009.994	2423.49	2316.031	-0.5	0	0
458, CanalLizar Lateral	515085.874	4827009.994	515436.9368	4826784.015	2391.31	2319.75	-0.5	0	0
459, CanalLizar Lateral	515436.9368	4826784.015	515551.9376	4826486.987	2368.28	2324.203	-0.5	0	0
459, CanalLizar Lateral	515551.9376	4826486.987	515811.8485	4826418.925	2349.9	2328.226	-0.5	0	0
459, CanalLizar Lateral	515768.2816	4825999.49	515839.3	4826394.755	2343.16	2329.416	-4	0	0
467, CanalLizar Lateral	515768.2816	4825999.49	515878.1556	4825541.01	2344.08	2324.499	-2	0	0
473, CanalLizar Lateral	515878.1556	4825541.01	516179.0636	4825519.003	2342.87	2328.26	-2	0	0
473, CanalLizar Lateral	516438.9056	4825150.5	516433.0931	4825485.998	2346.72	2339.617	-0.3551647	0	1.91E-10
477, CanalLizar Lateral	516433.0931	4825465.999	516179.0636	4825519.003	2343.74	2337.633	-0.3053727	0	1.78E-10
477, CanalLizar Lateral	527489.7618	4827614.991	528418.2436	4825893.999	2447.6	2527.848	32.09828	0	8.63E-12
480, CanalPhyllis Canal	528418.2436	4825893.999	528278.1938	4825723.006	2443.71	2529.901	34.47627	0	4.28E-11
480, CanalPhyllis Canal	528278.1938	4825723.006	528421.3221	4825067.991	2442.12	2529.621	35.00026	0	7.52E-11
486, CanalPhyllis Canal	531396.1396	4825710.997	531404.674	4825515.986	2463.89	2493.601	11.9646	0	9.58E-12
486, CanalPhyllis Canal	531404.674	4825515.986	530889.3766	4825484.988	2462.99	2496.58	13.43598	0	1.10E-11
486, CanalPhyllis Canal	530899.3766	4825484.988	530750.2989	4825338.989	2462.29	2501.49	15.68005	0	1.40E-11
486, CanalPhyllis Canal	530750.2989	4825338.989	531172.5078	4824718.995	2461.34	2495.444	13.64149	0	1.14E-11
490, CanalPhyllis Canal	531172.5078	4824718.995	530882.6735	4824785.987	2459.72	2491.149	12.57169	0	9.74E-12
490, CanalPhyllis Canal	530882.6735	4824795.987	530312.8194	4825436.006	2456.33	2503.28	18.7802	0	1.80E-11
490, CanalPhyllis Canal	530312.8194	4825436.006	529987.1361	4825490.992	2452.88	2513.462	24.23294	0	2.89E-11
490, CanalPhyllis Canal	529987.1361	4825490.992	529798.1342	4825057.993	2450.55	2516.363	26.32527	0	3.26E-11
490, CanalPhyllis Canal	529798.1342	4825057.993	529417.4989	4824835.007	2447.98	2516.995	28.40584	0	2.89E-11
490, CanalPhyllis Canal	529417.4989	4824835.007	528421.3221	4825067.991	2443.88	2527.113	33.30123	0	2.19E-11
498, CanalSchottie Lateral	518086.8403	4826990.243	517957.8124	4826278.992	2586.36	2406.995	-1	0	0
498, CanalSchottie Lateral	517957.8124	4826278.992	517724.0613	4826271.006	2579.48	2398.64	-1	0	0
498, CanalSchottie Lateral	517724.0613	4826271.006	517630.9053	4825943.011	2575.35	2393.001	-1	0	0
498, CanalSchottie Lateral	517630.9053	4825943.011	517949.3755	4824397.004	2561.55	2391.659	-1	0	0
499, CanalLizar Lateral	516438.9056	4825150.5	516548.0906	4824339.58	2335.41	2331.134	-0.2138038	0	2.06E-10

535, Canal Edwards Lateral	530863.1261	4823081	531179.884	4822884.988	2500.29	2501.328	0.1038067	0	1.89E-11
535, Canal Edwards Lateral	531178.884	4822864.988	531452.5581	4822203.999	2498.65	2501.04	0.2390482	0	1.82E-11
535, Canal Edwards Lateral	531452.5581	4822203.999	531792.1358	4821879.996	2497.12	2503.425	0.6305458	0	7.55E-12
535, Canal Edwards Lateral	531792.1358	4821879.996	534268.7577	4821867.987	2493.32	2495.577	0.2256665	0	1.17E-11
540, Canal Deer Flat Low	518815.2178	4822142.002	519026.1242	4821825.498	2442.56	2284.373	-1	0	0
Line Cana	519026.1242	4821825.498	519345.1888	4821694.495	2442.11	2282.092	-1	0	0
540, Canal Deer Flat Low	519345.1888	4821694.495	519648.6995	4820851.449	2441.33	2278.979	-1	0	0
547, Canal Langdon Lateral	539886.3131	4820804.012	539587.6396	4821387.988	2547.49	2541.78	-0.5710094	0	5.83E-13
547, Canal Langdon Lateral	539587.6396	4821387.988	538630.2628	4821826.991	2536.27	2530.844	-0.5425954	0	2.31E-12
547, Canal Langdon Lateral	538630.2628	4821826.991	538211.3762	4822248.987	2528.51	2518.422	-0.8087878	0	1.10E-13
547, Canal Langdon Lateral	538211.3762	4822248.987	537929.3752	4822259.99	2521.31	2512.217	-0.9093424	0	1.47E-12
547, Canal Langdon Lateral	537929.3752	4822259.99	537521.7357	4822982.001	2514.72	2505.81	-0.880985	0	6.23E-14
548, Canal South Nampa	538868.3131	4820804.012	538837.4354	4821056	2548.53	2538.501	-1.605898	0	1.22E-12
548, Canal South Nampa	538837.4354	4821056	537558.0678	4822335.002	2531.2	2517.927	-2	0	0
548, Canal South Nampa	537558.0678	4822335.002	536877.6933	4822754.986	2517.86	2501.46	-2	0	0
548, Canal South Nampa	536877.6933	4822754.986	536705.7556	4822629.987	2512.4	2496.122	-2	0	0
548, Canal South Nampa	536705.7556	4822629.987	535635.1761	4822838.013	2505.63	2489.563	-2	0	0
550, Canal Ridenbaugh	542108.9945	4821317	541851.8769	4821101.994	2565.96	2554.85	-1	0	0
550, Canal Ridenbaugh	541851.8769	4821101.994	542278.3835	4820771.987	2558.34	2557.278	-0.1063548	0	1.47E-11
550, Canal Ridenbaugh	542278.3835	4820771.987	542326.4505	4820406.989	2550.42	2560.3	0.9880084	0	5.23E-12
551, Canal Ridenbaugh	542326.4505	4820406.989	542323.1282	4820366.989	2543.28	2561.809	7.411474	0	4.24E-12
552, Canal Norris Lateral	518776.3437	4820353.009	518385.7688	4820860.491	2277.98	2283.825	-0.2	0	0
552, Canal Norris Lateral	518385.7688	4820660.491	517995.187	4820868.004	2275.94	2263.998	-0.2	0	0
552, Canal Norris Lateral	517995.187	4820968.004	517452.2803	4821242.507	2273.67	2261.818	-0.2	0	0
552, Canal Norris Lateral	517452.2803	4821242.507	517180.8284	4821379.758	2271.79	2284.576	-0.1442897	0	3.05962E-09
552, Canal Norris Lateral	517180.8284	4821379.758	516909.3736	4821517.01	2270.54	2264.902	-0.1147639	0	2.36347E-09
553, Canal Ridenbaugh	542321.8175	4820350.997	542323.1282	4820366.999	2542.03	2562.01	7.991939	0	4.98E-12

556, Canal Ridenbaugh Canal	542296.8239	4820276.982	542321.8175	4820350.997	2553.51	2582.316	3.522469	0	2.14E-12
557, Canal South Nampa Canal	540147.4962	4820209.997	539886.3131	4820804.012	2555.74	2547.783	-3.182954	0	1.58E-12
558, Canal Ridenbaugh Canal	540147.4962	4820209.987	540099.6122	4820123.007	2559.02	2550.077	-3.577171	0	6.21E-13
559, Canal Ridenbaugh Canal	542296.8239	4820276.982	542098.5703	4820219.994	2562.09	2562.535	0.04447165	0	3.32E-11
559, Canal Ridenbaugh Canal	542096.5703	4820219.984	541324.8167	4820530.007	2561.04	2560.353	-0.0686745	0	1.78E-11
559, Canal Ridenbaugh Canal	541324.8167	4820530.007	541135.9931	4820300.004	2559.91	2557.763	-0.2146888	0	7.99E-12
559, Canal Ridenbaugh Canal	541135.9931	4820300.004	541300.067	4820056.987	2559.31	2559.14	0.01699645	0	4.10E-11
560, Canal Ridenbaugh Canal	541300.067	4820056.987	540841.5563	4820261.996	2559.02	2558.243	-0.3109461	0	2.30E-11
560, Canal Ridenbaugh Canal	540841.5563	4820261.996	540147.4962	4820209.987	2559.02	2553.331	-2.275826	0	1.42E-12
565, Canal Fogarty Lateral	541132.2441	4819727.988	540098.6122	4820123.007	2565.51	2556.187	-0.932268	0	7.03E-13
566, Canal New York Canal	541216.247	4819701.011	541369.7391	4819958.007	2565.59	2561.847	-1.487044	0	1.04E-13
567, Canal Fogarty Lateral	541132.2441	4819727.986	541216.247	4819701.011	2570.44	2561.75	-3.475802	0	8.94E-13
568, Canal Fogarty Lateral	541310.4911	4819653.005	541216.247	4819701.011	2570.51	2562.584	-3.170486	0	6.40E-12
570, Canal Thacker Lateral	533267.9469	4820891.987	533673.0663	4819817.994	2573.02	2510.091	-0.33333333	0	0
570, Canal Thacker Lateral	533873.0663	4819817.994	533884.4354	4819571.99	2570.83	2516.674	-0.33333333	0	0
570, Canal Thacker Lateral	533884.4354	4819571.99	533633.1278	4819571.014	2570.23	2518.234	-0.33333333	0	0
570, Canal Thacker Lateral	533633.1278	4819571.014	532456.7522	4821079.012	2567.19	2512.58	-0.33333333	0	0
570, Canal Thacker Lateral	532456.7522	4821079.012	531233.7422	4821315.994	2562.74	2510.34	-0.33333333	0	0
570, Canal Thacker Lateral	531233.7422	4821315.994	530892.2442	4822024.99	2559.88	2510.693	-0.33333333	0	0
570, Canal Thacker Lateral	530892.2442	4822024.99	530562.7554	4821878.003	2558.27	2510.616	-0.33333333	0	0
570, Canal Thacker Lateral	530562.7554	4821878.003	529881.258	4822863.012	2558.02	2510.987	-0.33333333	0	0
574, Canal Ridenbaugh Canal	540098.6122	4820123.007	540044.931	4819416.999	2554.1	2551.813	-0.9149186	0	1.39E-11
577, Canal Ridenbaugh Canal	539207.6759	4819226.987	540044.931	4819416.999	2553.22	2551.312	-0.7631905	0	2.84E-12
578, Canal New York Canal	541216.247	4819701.011	540381.6131	4819164.015	2563.95	2560.93	-1.208091	0	4.80E-12
579, Canal North Robinson Lateral	535840.0626	4819134.998	535923.6988	4819179.011	2534.42	2524.557	-3.945251	0	3.67E-12
580, Canal North Robinson Lateral	535840.0626	4819134.998	534695.6301	4820381.996	2539.33	2514.955	-1	0	0
580, Canal North Robinson Lateral	534695.6301	4820381.996	534061.008	4820802.01	2534.57	2504.699	-1	0	0
580, Canal North Robinson Lateral	534061.008	4820802.01	534023.6985	4820625.994	2532.74	2504.187	-1	0	0

586, CanalNew York Canal	536967.7374	4819473.996	538080.495	4819603.994	2558.06	2541.345	-0.5	0	0
586, CanalNew York Canal	538080.495	4819603.994	537655.299	4818833.002	2557.15	2540.029	-0.5	0	0
586, CanalNew York Canal	537655.299	4818833.002	536907.6856	4818683.997	2558.31	2538.483	-0.5	0	0
586, CanalNew York Canal	536907.6856	4818683.997	536832.3695	4818835.989	2555.83	2535.214	-0.5	0	0
587, CanalNew York Canal	540207.6638	4818798.335	540381.6131	4819164.015	2560.66	2560.136	-0.2084043	0	6.63E-11
588, CanalRidenbaugh Canal	536725.4457	4818661.013	536751.2622	4818792.006	2549.18	2535.178	-4	0	0
590, CanalRidenbaugh High Line Ca	544483.7386	4818750.005	544384.0029	4818731.991	2801.61	2577.751	-10	0	0
591, CanalRidenbaugh High Line Ca	544321.3055	4818711.417	544381.6864	4818728.669	2810.18	2577.845	-10	0	0
592, CanalFogarty Lateral	543542.0538	4818685.994	542923.6146	4819252.986	2807.76	2574.724	-1	0	0
592, CanalFogarty Lateral	542923.6146	4819252.986	542034.0558	4819322.998	2593.16	2570.537	-1	0	0
592, CanalFogarty Lateral	542034.0558	4819322.999	541310.4911	4819653.005	2578.88	2565.919	-1	0	0
593, CanalRidenbaugh High Line Ca	543542.0538	4818685.994	544301.3716	4818720.988	2614.78	2577.574	-10	0	0
594, CanalDeer Flat Low Line Cana	519628.601	4820801.187	520001.0301	4820160.01	2426.51	2268.881	-0.5	0	0
594, CanalDeer Flat Low Line Cana	520001.0301	4820160.01	519747.5005	4819972.009	2406.19	2264.864	-0.5	0	0
594, CanalDeer Flat Low Line Cana	519747.5005	4819972.009	520102.0621	4819304.009	2385.56	2264.089	-0.5	0	0
594, CanalDeer Flat Low Line Cana	520102.0621	4819304.009	520026.3437	4819085.986	2366.6	2265.001	-0.5	0	0
594, CanalDeer Flat Low Line Cana	520026.3437	4819085.986	520200.1864	4818583.003	2352.11	2265.162	-0.5	0	0
595, CanalNew York Canal	540195.5022	4818803.01	539764.9418	4818583.986	2581.66	2559.899	-0.1760787	0	7.25E-13
595, CanalNew York Canal	539764.9418	4818583.986	539157.9326	4819028.001	2580.02	2554.914	-0.5108024	0	2.28E-12
597, CanalNorth Robinson Lateral	535840.0626	4819134.998	535792.7577	4818975.008	2542.45	2525.586	-1	0	0
597, CanalNorth Robinson Lateral	535792.7577	4818975.008	535337.1122	4819259.509	2541.78	2523.31	-1	0	0
597, CanalNorth Robinson Lateral	535337.1122	4819259.509	535555.989	4819053.007	2540.93	2522.407	-1	0	0
597, CanalNorth Robinson Lateral	535555.989	4819053.007	535606.2506	4818701.999	2540.29	2526.661	-1	0	0
597, CanalNorth Robinson Lateral	535606.2506	4818701.999	535442.3901	4818442.005	2539.64	2530.814	-0.8826117	0	1.03E-11
598, CanalDeer Flat Low Line Cana	520200.5613	4818433.013	520200.1864	4818583.003	2345.15	2265.631	-0.5	0	0
599, CanalNorth Robinson Lateral	534245.3186	4818575.995	535442.3901	4818442.005	2539.86	2529.847	-1	0	0
600, CanalDeer Flat Low Line Cana	520200.5613	4818433.013	520196.129	4818298.627	2345.77	2265.699	-0.5	0	0

601, CanalDeer Flat Low Line Cana	520201.1558	4818225.505	520200.8752	4818277.992	2343.73	2285.963	-0.5	0	0
602, CanalDeer Flat Low Line Cana	520204.6547	4818083.504	520202.451	4818220.141	2345.54	2286.499	-100	0	0
603, CanalDeer Flat Low Line Cana	520204.6547	4818083.504	520208.4088	4817871.998	2345.42	2286.157	-100	0	0
604, CanalNew York Canal	533674.2758	4817782.087	533264.5636	4818288.995	2539.53	2534.204	-1.597714	0	8.80E-12
604, CanalNew York Canal	533264.5636	4818288.995	532539.5054	4818539.998	2532.87	2531.456	-0.4243334	0	2.08E-11
604, CanalNew York Canal	532539.5054	4818539.998	532044.6711	4819017.497	2528.13	2529.938	1.142465	0	1.57E-11
606, CanalDeer Flat Low Line Cana	520204.9882	4817439.822	520208.6108	4817860.294	2347.29	2283.818	-0.5	0	0
607, CanalRobinson Hill Pipeline	535438.2028	4817430.495	535442.3901	4818442.005	2542.62	2538.044	-1.830242	0	1.55E-11
608, CanalRidenbaugh Canal	538751.2822	4818792.006	538845.3845	4818285.002	2548.84	2538.736	-10	0	0
608, CanalRidenbaugh Canal	538845.3845	4818285.002	538562.4986	4817983.006	2548.24	2541.874	-6.368408	0	9.10E-12
608, CanalRidenbaugh Canal	538562.4986	4817983.006	536308.0526	4818052.988	2547.8	2541.277	-6.522917	0	9.00E-12
608, CanalRidenbaugh Canal	536308.0526	4818052.988	536105.8787	4817862.001	2547.44	2540.903	-6.536844	0	4.78E-12
608, CanalRidenbaugh Canal	536105.8787	4817862.001	536105.0558	4817529.007	2547.04	2542.672	-4.167942	0	1.38E-11
608, CanalRidenbaugh Canal	536105.0558	4817529.007	535960.9463	4817414.006	2546.71	2544.42	-2.280088	0	1.58E-11
608, CanalRidenbaugh Canal	535960.9463	4817414.006	535436.2026	4817430.495	2546.24	2543.625	-2.614532	0	1.70E-11
609, CanalDeer Flat Low Line Cana	520202.7802	4817435.006	520131.9996	4817297.999	2349.79	2262.267	-0.5	0	0
611, CanalDeer Flat Low Line Cana	520131.9996	4817297.999	520081.3753	4817208.01	2347.97	2261.406	-0.5	0	0
612, CanalDeer Flat Low Line Cana	520081.3753	4817206.01	519982.5322	4817173	2342.52	2260.701	-0.5	0	0
613, CanalNew York Canal	534232.7608	4817123.013	533890.8874	4817751.998	2545.77	2539.325	-0.3222529	0	1.62E-11
614, CanalNew York Canal	534286.4361	4817028.013	534232.7608	4817123.013	2549.05	2542.53	-2.607809	0	1.65E-11
615, CanalDeer Flat High Line Can	534286.4361	4817028.013	534256.1999	4817019.991	2549.18	2542.888	-2.512941	0	1.95E-11
616, CanalNew York Canal	536832.3695	4818835.989	536841.2392	4818600.013	2555.62	2537.125	-1.5	0	0
616, CanalNew York Canal	536841.2392	4818600.013	537283.0519	4818062.986	2555.15	2542.419	-1.5	0	0
616, CanalNew York Canal	537263.0519	4818062.986	536688.2601	4817253.01	2554.31	2547.589	-1.008207	0	8.32E-12
616, CanalNew York Canal	536688.2601	4817253.01	536450.577	4817040.991	2553.64	2548.928	-0.7087515	0	1.58E-11
616, CanalNew York Canal	536450.577	4817040.991	535445.5905	4816971.375	2552.97	2547.437	-0.8299971	0	1.54E-11
617, CanalRobinson Hill Pipeline	535442.7863	4816980.306	535436.2028	4817430.495	2549.18	2544.449	-1.892556	0	1.18E-11

633, CanalBenton Lateral	543147.6731	4816266.495	541092.4372	4816959	2842.11	2581.709	-0.5	0	0
634, CanalBenton Lateral	543147.6731	4816268.495	543222.8063	4816265.489	2855.24	2583.937	-4	0	0
635, CanalBarth Lateral	538631.5125	4816237.508	538627.4891	4816547.002	2820.36	2564.588	-1	0	0
635, CanalBarth Lateral	538627.4891	4816547.002	538860.9984	4816563.004	2807.07	2564.608	-1	0	0
636, CanalDeer Flat High	534256.1999	4817019.991	533465.7621	4817103.994	2548.18	2541.744	-2.230838	0	1.52E-11
636, CanalDeer Flat High	533465.7621	4817103.994	533866.9301	4816507.988	2548.18	2543.282	-1.775377	0	2.11E-11
637, CanalDeer Flat High	533866.9301	4816507.988	533085.6785	4816208.491	2548.18	2545.459	-1.116258	0	2.14E-11
638, CanalDeer Flat High	532608.5121	4816205.992	532545.6318	4816205.504	2552.46	2546.454	-60.0576	0	2.06E-11
638, CanalDeer Flat High	532545.6318	4816205.504	532463.4882	4816414.993	2552.36	2546.224	-92.04112	0	2.26E-11
638, CanalDeer Flat High	532463.4882	4816414.993	531817.9523	4816480.007	2551.99	2545.185	-102.0722	0	1.62E-11
638, CanalDeer Flat High	531817.9523	4816480.007	531476.1191	4816773.011	2551.53	2543.923	-114.112	0	1.90E-11
638, CanalDeer Flat High	531476.1191	4816773.011	531069.4854	4816814.007	2551.16	2543.243	-118.7483	0	2.55E-11
638, CanalDeer Flat High	531069.4854	4816814.007	530727.317	4817129.993	2550.79	2543.017	-116.6007	0	1.98E-11
638, CanalDeer Flat High	530727.317	4817129.993	530437.8179	4817744.5	2550.31	2544.736	-83.61321	0	1.60E-11
638, CanalDeer Flat High	530437.8179	4817744.5	530148.3189	4818359.008	2549.73	2547.159	-38.55905	0	1.47E-11
638, CanalDeer Flat High	530148.3189	4818359.008	529421.4928	4818802.004	2549.08	2550.663	23.75122	0	1.23E-12
638, CanalDeer Flat High	529421.4928	4818802.004	528894.6972	4819245	2548.36	2550.702	35.12817	0	9.37E-12
638, CanalDeer Flat High	528894.6972	4819245	528222.0134	4819311.995	2547.79	2543.653	-62.06099	0	2.01E-11
638, CanalDeer Flat High	528222.0134	4819311.995	527565.4437	4819647.489	2547.28	2537.721	-143.3859	0	2.69E-11
638, CanalDeer Flat High	527565.4437	4819647.489	526908.874	4819983.012	2546.65	2531.928	-150	0	0
638, CanalDeer Flat High	526908.874	4819983.012	526344.5063	4820106.487	2546.09	2527.355	-150	0	0
638, CanalDeer Flat High	526344.5063	4820106.487	525780.1386	4820229.992	2545.6	2520.843	-150	0	0
638, CanalDeer Flat High	525780.1386	4820229.992	525018.5654	4820109.992	2545.03	2510.13	-150	0	0
638, CanalDeer Flat High	525018.5654	4820109.992	524402.6255	4820451.002	2544.4	2503.5	-150	0	0
638, CanalDeer Flat High	524402.6255	4820451.002	523982.3368	4820750.987	2543.89	2504.568	-150	0	0
638, CanalDeer Flat High	523982.3368	4820750.987	523874.4376	4821079.012	2543.52	2507.84	-150	0	0

638, CanalDeer Flat High Line Can	523874.4376	4821079.012	523234.4368	4821752.011	2542.98	2512.081	-150	0
638, CanalDeer Flat High Line Can	523234.4368	4821752.011	523249.939	4822336.007	2542.34	2515.988	-150	0
638, CanalDeer Flat High Line Can	523249.939	4822336.007	522963.9685	4822735.997	2541.88	2517.641	-150	0
638, CanalDeer Flat High Line Can	522963.9685	4822735.997	522579.3119	4823037.992	2541.46	2516.075	-150	0
638, CanalDeer Flat High Line Can	522579.3119	4823037.992	522194.6574	4823339.988	2541.05	2513.728	-150	0
638, CanalDeer Flat High Line Can	522194.6574	4823339.988	521561.8286	4823432.007	2540.57	2511.048	-150	0
638, CanalDeer Flat High Line Can	521561.8286	4823432.007	520828.9898	4823523.996	2540.03	2504.067	-150	0
638, CanalDeer Flat High Line Can	520828.9898	4823523.996	520515.0835	4824162.003	2538.43	2485.546	-150	0
640, CanalCanal	530022.8022	4816799.834	529934.5017	4817140.996	2581.49	2540.374	-10	0
640, CanalCanal	529934.5017	4817140.996	530053.4346	4817246	2575.86	2543.63	-10	0
641, CanalDeer Flat High Line Can	533085.6765	4816208.491	533077.264	4816177.005	2549.18	2546.536	-26.43783	0 1.59E-11
642, CanalStewart Lateral	521279.66	4819959.97	521620.3136	4819280.515	2814.2	2488.812	-0.5	0
642, CanalStewart Lateral	521620.3136	4819280.515	521525.5299	4818658.504	2600.37	2452.847	-0.5	0
642, CanalStewart Lateral	521525.5299	4818658.504	521182.124	4818740.008	2590.77	2446.675	-0.5	0
642, CanalStewart Lateral	521182.124	4818740.008	521078.5925	4818605.012	2585.56	2447.487	-0.5	0
642, CanalStewart Lateral	521078.5925	4818605.012	521063.0325	4818114.497	2578.97	2440.961	-0.5	0
642, CanalStewart Lateral	521063.0325	4818114.497	521246.5312	4817985.893	2571.85	2434.333	-0.5	0
642, CanalStewart Lateral	521246.5312	4817985.893	521107.5638	4817812.501	2567.4	2431.324	-0.5	0
642, CanalStewart Lateral	521107.5638	4817812.501	521279.2485	4817488.011	2561.53	2426.604	-0.5	0
642, CanalStewart Lateral	521279.2485	4817488.011	521653.1863	4817358.014	2553.92	2422.006	-0.5	0
642, CanalStewart Lateral	521653.1863	4817358.014	521604.0312	4816994.509	2546.32	2417.697	-0.5	0
642, CanalStewart Lateral	521604.0312	4816994.509	522254.1238	4816163.99	2532.15	2408.534	-0.5	0
643, CanalConroy Lateral	519992.5322	4817173	519746.1868	4817180.011	2335.67	2259.546	-0.2	0
643, CanalConroy Lateral	519746.1868	4817180.011	519740.2188	4817552.994	2329.57	2259.469	-0.2	0
643, CanalConroy Lateral	519740.2188	4817552.994	519300.7825	4817555.006	2321.58	2258.595	-0.2	0
643, CanalConroy Lateral	519300.7825	4817555.006	519299.1884	4817155.992	2313.34	2256.346	-0.2	0
643, CanalConroy Lateral	519299.1884	4817155.992	519019.8118	4817148.007	2308.67	2254.611	-0.2	0
643, CanalConroy Lateral	519019.8118	4817148.007	519015.188	4816948.515	2301.86	2263.233	-0.2	0
643, CanalConroy Lateral	519015.188	4816948.515	519010.5611	4816748.993	2298.03	2252.289	-0.2	0

643, CanalConroy Lateral	519010.5611	4816748.993	518770.5159	4816738.508	2283.7	2250.947	-0.2	0	0
643, CanalConroy Lateral	518770.5159	4816738.508	518530.4676	4816727.992	2288.98	2249.328	-0.2	0	0
643, CanalConroy Lateral	518530.4676	4816727.992	518561.9382	4816320.993	2282.6	2247.404	-0.2	0	0
643, CanalConroy Lateral	518561.9382	4816320.993	518213.9054	4816304.991	2275.16	2244.866	-0.2	0	0
643, CanalConroy Lateral	518213.9054	4816304.991	518208.8122	4816163.015	2270.34	2242.88	-0.2	0	0
644, CanalDeer Flat High Line Can	532830.5186	4816204.955	533059.9818	4816174.079	2550.82	2546.985	-115.6414	0	1.87E-11
646, CanalRobinson Hill Pipeline	535425.9818	4815787.014	535433.0022	4816930.014	2586.45	2549.578	-0.33333333	0	0
649, CanalRobinson Hill Pipeline	535431.9354	4815686.491	535425.9818	4815787.014	2638.24	2552.1	-0.5	0	0
650, CanalStewart Lateral	520885.9803	4815645.16	520427.5001	4815733.003	2509	2397.589	-2	0	0
650, CanalStewart Lateral	520427.5001	4815733.003	520364.4675	4815595.996	2508.86	2396.007	-2	0	0
652, CanalCanal	529811.6368	4815368.989	530375.8826	4815891.987	2591.97	2519.315	-100	0	0
652, CanalCanal	530375.8826	4815891.987	530038.4573	4816777.157	2587.72	2532.06	-100	0	0
653, CanalStewart Lateral	522254.1238	4816163.89	522441.5301	4815781.009	2520.66	2403.484	-2	0	0
653, CanalStewart Lateral	522441.5301	4815781.009	522031.0925	4815505.013	2518.54	2401.184	-2	0	0
653, CanalStewart Lateral	522031.0925	4815505.013	521528.1548	4815354.015	2518.18	2399.629	-2	0	0
653, CanalStewart Lateral	521528.1548	4815354.015	521279.3785	4815474.99	2514.34	2398.91	-2	0	0
653, CanalStewart Lateral	521279.3785	4815474.99	521010.6252	4818016.985	2512.31	2400.339	-2	0	0
653, CanalStewart Lateral	521010.6252	4818016.985	520890.1258	4815842.896	2510.01	2400.013	-2	0	0
654, CanalCanal	530447.3888	4815328.004	530448.5047	4815509.006	2577.49	2522.41	-1	0	0
654, CanalCanal	530446.5047	4815509.006	531374.7426	4815772.993	2568.82	2531.491	-1	0	0
654, CanalCanal	531374.7426	4815772.993	531357.7348	4816098.001	2561.19	2538.295	-1	0	0
656, CanalConroy Lateral	518208.8122	4816163.015	517957.9678	4816078.006	2268.08	2241.044	-0.33333333	0	0
656, CanalConroy Lateral	517957.9678	4816078.006	517897.5321	4815829.015	2286.38	2238.199	-0.33333333	0	0
656, CanalConroy Lateral	517897.5321	4815829.015	517821.1084	4815512.511	2264.52	2235.307	-0.33333333	0	0
656, CanalConroy Lateral	517821.1084	4815512.511	517944.6877	4815198.007	2262.46	2232.634	-0.33333333	0	0
656, CanalConroy Lateral	517944.6877	4815198.007	518065.358	4815187.503	2281.03	2232.083	-0.33333333	0	0
656, CanalConroy Lateral	518065.358	4815187.503	518186.0314	4815178.999	2260.24	2233.371	-0.33333333	0	0
662, CanalMutch Lateral	519552.907	4816152.012	519408.3739	4814922.997	2325.84	2247.874	-0.33333333	0	0
663, CanalWest Madden Lateral	534780.3086	4814846.005	534708.4505	4814957.988	2647.6	2551.541	-0.33333333	0	0
663, CanalWest Madden Lateral	534706.4505	4814957.988	535008.0079	4814999.99	2647.23	2551.846	-0.33333333	0	0

663, CanalWest Madden Lateral	535006.0079	4814999.99	534970.7426	4815418.998	2646.6	2551.927	-0.33333333	0
663, CanalWest Madden Lateral	534970.7426	4815418.998	534838.3679	4815480.995	2646.1	2551.22	-0.33333333	0
665, CanalCanal	534838.3679	4815480.995	535366.373	4815698.012	2645.48	2551.447	-0.33333333	0
665, CanalCanal	534760.3086	4814846.005	534232.2426	4814807.996	2635.9	2550.967	-0.33333333	0
665, CanalCanal	534232.2426	4814807.996	534224.5617	4815775.005	2602.5	2549.7	-0.33333333	0
670, CanalCanal	534224.5617	4815775.005	534055.3672	4816074.013	2573.26	2547.958	-0.33333333	0
670, CanalCanal	519346.2191	4813878.905	519054.7815	4814024.995	2290.23	2234.834	-0.33333333	0
670, CanalCanal	519054.7815	4814024.995	518694.0324	4815177.993	2278.92	2236.081	-0.33333333	0
671, CanalCanal	518694.0324	4815177.993	518389.4371	4815181.986	2267.85	2237.519	-0.33333333	0
671, CanalDeer Flat Low	519992.5322	4817173	518880.4847	4816744.512	2335.71	2259.065	-0.33333333	0
671, CanalDeer Flat Low	518880.4847	4816744.512	519768.4372	4816315.994	2330.96	2256.339	-0.33333333	0
671, CanalDeer Flat Low	519768.4372	4816315.994	519489.1886	4816250.005	2327.04	2253.669	-0.33333333	0
671, CanalDeer Flat Low	519489.1886	4816250.005	519307.2504	4815834.014	2323.06	2250.561	-0.33333333	0
671, CanalDeer Flat Low	519307.2504	4815834.014	519340.501	4815171.501	2317.07	2246.402	-0.33333333	0
671, CanalDeer Flat Low	518340.501	4815171.501	519373.7486	4814508.987	2309.95	2241.737	-0.33333333	0
671, CanalDeer Flat Low	519373.7486	4814508.987	518558.9847	4814173.006	2304.33	2239.057	-0.33333333	0
671, CanalDeer Flat Low	518558.9847	4814173.006	519744.2178	4813838.995	2300.21	2238.819	-0.33333333	0
671, CanalDeer Flat Low	519744.2178	4813838.995	519405.2802	4814021.003	2296.08	2238.151	-0.33333333	0
671, CanalDeer Flat Low	519405.2802	4814021.003	519363.9615	4813899.357	2293.32	2236.717	-0.33333333	0
672, CanalBrooks Lateral	528620.3748	4813703.492	529606.3845	4813908.013	2653.15	2483.202	-20	0
672, CanalBrooks Lateral	529606.3845	4813908.013	529811.9416	4813834.013	2648.9	2487.303	-20	0
672, CanalBrooks Lateral	529811.9416	4813834.013	529815.6906	4814862.987	2636.16	2495.826	-20	0
672, CanalBrooks Lateral	529815.6906	4814862.987	531393.6402	4815072.014	2609.23	2521.441	-20	0
672, CanalBrooks Lateral	531393.6402	4815072.014	532209.4374	4814974.996	2584.44	2540.918	-20	0
672, CanalBrooks Lateral	532209.4374	4814974.996	532216.265	4816115.008	2564.22	2544.075	-20	0
673, CanalBarth Lateral	540093.059	4813640.003	539546.8878	4814164.99	2674.47	2575.391	-1	0
673, CanalBarth Lateral	539546.8878	4814164.99	539608.1222	4814592.015	2665.14	2574.494	-1	0
673, CanalBarth Lateral	539608.1222	4814592.015	539287.7469	4815125.994	2656.67	2573.489	-1	0

673, CanalBarth Lateral	539287.7469	4815125.994	539381.8082	4815583.988	2848.32	2571.92	-1	0	0
673, CanalBarth Lateral	539381.8082	4815583.986	539038.7558	4815646.013	2641.92	2570.265	-1	0	0
673, CanalBarth Lateral	539038.7558	4815646.013	538631.5125	4816237.508	2633.55	2587.349	-1	0	0
675, CanalMartin Lateral	540093.059	4813840.003	539298.2625	4813610.01	2672.82	2574.654	-1	0	0
675, CanalMartin Lateral	539298.2625	4813610.01	538725.6347	4815291.013	2648.28	2571.621	-1	0	0
675, CanalMartin Lateral	538725.6347	4815291.013	537889.2635	4815428.986	2623.24	2566.355	-1	0	0
675, CanalMartin Lateral	537889.2635	4815428.986	537877.803	4816135.004	2608.41	2562.799	-1	0	0
676, CanalVan Duzer Lateral	542686.3253	4813508.999	542442.945	4815207.01	2655.31	2582.225	-1	0	0
676, CanalVan Duzer Lateral	542442.945	4815207.01	542265.1247	4815225.999	2638.46	2583.463	-1	0	0
676, CanalVan Duzer Lateral	542265.1247	4815225.999	542161.3708	4815550.001	2633.85	2583.302	-1	0	0
676, CanalVan Duzer Lateral	542161.3708	4815550.001	541579.5076	4815843.01	2624.59	2582.32	-1	0	0
676, CanalVan Duzer Lateral	541579.5076	4815843.01	540671.1122	4816178.011	2610.01	2578.738	-1	0	0
677, CanalCanal	542696.3253	4813508.989	542181.3657	4814085.011	2670.57	2580.495	-1	0	0
677, CanalCanal	542181.3657	4814085.011	541735.6282	4813893.992	2670.57	2581.124	-1	0	0
677, CanalCanal	541735.6282	4813893.992	541480.3003	4814023.99	2670.57	2580.725	-1	0	0
678, CanalCanal (pipeline)	524216.9109	4814446.991	524484.251	4814274.992	2629.37	2382.058	-0.01	0	0
679, CanalCanal (pipeline)	524484.251	4814274.992	524452.5518	4813918.986	2894.04	2391.495	-0.01	0	0
679, CanalCanal (pipeline)	524452.5518	4813918.986	524225.0795	4813619.002	2855.64	2391.017	-0.01	0	0
679, CanalCanal (pipeline)	524225.0795	4813619.002	523987.0917	4813417.011	2819.62	2390.393	-0.01	0	0
679, CanalCanal (pipeline)	523987.0917	4813417.011	523234.8758	4813526.007	2763.52	2390.168	-0.01	0	0
679, CanalCanal (pipeline)	523234.8758	4813526.007	522823.1263	4813339.988	2704.76	2390.005	-0.01	0	0
681, CanalLenard Lateral	545645.1129	4813146.013	545342.3246	4813532.012	2738.23	2563.972	-4	0	0
681, CanalLenard Lateral	545342.3246	4813532.012	545261.1258	4814280.997	2722.51	2570.578	-4	0	0
681, CanalLenard Lateral	545261.1258	4814280.997	544885.3684	4815378.003	2698.34	2578.098	-4	0	0
682, CanalVan Duzer Lateral	542715.0095	4813138.515	542696.3253	4813508.999	2673.85	2578.124	-4	0	0
683, CanalMora Canal	545645.1129	4813146.013	545178.4948	4812974.99	2743.59	2561.901	-12	0	0
684, CanalBenton Lateral	545178.4948	4812974.99	544711.0533	4813355.015	2736.45	2566.868	-0.5	0	0
684, CanalBenton Lateral	544711.0533	4813355.015	544428.8085	4813393.998	2727.16	2571.179	-0.5	0	0
684, CanalBenton Lateral	544428.8085	4813393.998	544058.7508	4814428.002	2712.68	2576.528	-0.5	0	0

684, Canal/Benton Lateral	544058.7508	4814428.002	544032.3246	4814947.991	2695.74	2581.031	-0.5	0
684, Canal/Benton Lateral	544032.3246	4814947.991	543809.3634	4815244.013	2686.41	2582.628	-0.5	0
684, Canal/Benton Lateral	543809.3634	4815244.013	543837.1917	4815625.013	2678.54	2583.486	-0.5	0
684, Canal/Benton Lateral	543837.1917	4815625.013	543891.1315	4815829.981	2671.91	2583.882	-0.5	0
684, Canal/Benton Lateral	543891.1315	4815829.981	543477.6801	4815825.989	2667.04	2584.077	-0.5	0
684, Canal/Benton Lateral	543477.6801	4815825.989	543222.8063	4816265.489	2659.49	2584.137	-0.5	0
685, Canal/Barth Lateral	540399.6268	4812920.431	540157.067	4813061.004	2680.41	2575.653	-1	0
685, Canal/Barth Lateral	540157.067	4813061.004	540093.059	4813640.003	2680.41	2575.901	-1	0
687, Canal/Canal	531443.8103	4812760.99	531451.2474	4813271.987	2653.51	2534.853	-200	0
687, Canal/Canal	531451.2474	4813271.987	531737.8814	4813356.986	2642.08	2538.898	-200	0
687, Canal/Canal	531737.8814	4813356.986	531702.8596	4813727.998	2632.6	2543.069	-200	0
687, Canal/Canal	531702.8596	4813727.998	531915.3054	4813907.007	2623.41	2544.815	-200	0
687, Canal/Canal	531915.3054	4813907.007	532039.8772	4814389.983	2612.45	2546.873	-200	0
687, Canal/Canal	532039.8772	4814389.983	532048.6859	4814633.986	2601.96	2546.552	-200	0
687, Canal/Canal	532048.6859	4814633.986	531814.8738	4814670.989	2585.17	2544.682	-200	0
687, Canal/Canal	531814.8738	4814670.989	538692.7651	4812493.985	2677.86	2574.482	-1	0
687, Canal/Canal	538692.7651	4812493.985	539628.9893	4812931.007	2673.93	2573.358	-1	0
687, Canal/Canal	539628.9893	4812931.007	539068.1385	4812942.986	2670.8	2572.526	-1	0
687, Canal/Canal	539068.1385	4812942.986	539060.7623	4813382.995	2667.88	2571.592	-1	0
687, Canal/Canal	541437.0136	4812226.005	540938.0865	4812578.445	2687.79	2575.071	-0.1	0
687, Canal/Canal	540938.0865	4812578.445	540421.481	4812898.807	2682.87	2575.817	-0.1	0
687, Canal/Canal	542737.3209	4811856.008	543089.6392	4812739.989	2693.11	2571.365	-1	0
687, Canal/Canal	543089.6392	4812739.989	542753.201	4812905.008	2683.36	2574.801	-1	0
687, Canal/Canal	542753.201	4812905.008	542715.0095	4813138.515	2678.87	2576.429	-1	0
687, Canal/Canal	533868.4392	4811819.005	533867.8847	4812128.987	2650.87	2541.456	-10	0
687, Canal/Canal	533867.8847	4812128.987	533481.7641	4812123.988	2642.34	2542.543	-10	0
687, Canal/Canal	533481.7641	4812123.988	533380.2352	4813068.003	2626.02	2544.777	-10	0
687, Canal/Canal	533380.2352	4813068.003	533613.8034	4813578.008	2607.53	2545.394	-10	0
687, Canal/Canal	533613.8034	4813578.008	533423.4863	4814033.987	2584.6	2548.315	-10	0
687, Canal/Canal	533869.4392	4811819.005	534108.0554	4811741.007	2654.49	2539.104	-1	0

Lateral

719, Canal Walkvogel Canal	542666.6967	4811030	542536.4272	4810391.993	2738.83	2561.462	-1	0	0
719, Canal Walkvogel Canal	542536.4272	4810391.993	541943.2559	4809658.963	2732.82	2561.056	-1	0	0
723, Canal East Madden	535872.0668	4809665.014	535717.4416	4810087.985	2670.06	2527.414	-1.333333	0	0
723, Canal East Madden	535717.4416	4810087.985	536162.7544	4810438.993	2668.9	2532.874	-1.333333	0	0
723, Canal East Madden	536162.7544	4810438.993	536103.1355	4810667.014	2667.98	2537.857	-1.333333	0	0
723, Canal East Madden	536103.1355	4810667.014	536492.9442	4811401.003	2666.77	2543.264	-1.333333	0	0
723, Canal East Madden	536492.9442	4811401.003	536205.1216	4812524.008	2664.5	2549.936	-1.333333	0	0
723, Canal East Madden	536205.1216	4812524.008	536848.8897	4813282.015	2662.04	2556.19	-1.333333	0	0
723, Canal East Madden	536848.8897	4813282.015	536903.9975	4813912.006	2660.19	2560.246	-1.333333	0	0
723, Canal East Madden	536903.9975	4813912.006	537117.1746	4813839.011	2658.22	2561.393	-1.333333	0	0
723, Canal East Madden	537117.1746	4813839.011	536831.4905	4815457.007	2657.23	2561.314	-1.333333	0	0
723, Canal East Madden	536831.4905	4815457.007	535431.9354	4815686.491	2653.76	2555.256	-1.333333	0	0
724, Canal Canal	528183.5755	4811297.005	528860.4474	4810955.995	2761.32	2423.643	-1	0	0
724, Canal Canal	528829.876	4810955.995	528829.876	4810311.007	2760.89	2421.79	-1	0	0
724, Canal Canal	528390.9945	4810311.007	528390.9945	4810166.989	2760.55	2412.473	-1	0	0
724, Canal Canal	524416.0062	4809445.985	524150.0073	4809630.999	2760.23	2403.318	-1	0	0
727, Canal Canal	524150.0073	4809701.865	523995.1689	4809701.865	2681.21	2359.428	-0.01	0	0
727, Canal Canal	523995.1689	4809909.007	523728.2743	4809908.007	2680.35	2365.483	-0.01	0	0
727, Canal Canal	523728.2743	4810488.986	523730.9682	4810489.986	2679.12	2370.882	-0.01	0	0
727, Canal Canal	523730.9682	4811267.013	523719.2639	4811267.013	2677.18	2376.759	-0.01	0	0
727, Canal Canal	523719.2639	4811701.993	523326.1573	4811877.009	2675.53	2380.867	-0.01	0	0
727, Canal Canal	523326.1573	4811877.009	522933.0628	4812051.995	2674.35	2382.597	-0.01	0	0
727, Canal Canal	522933.0628	4812051.995	522863.2514	4813057.012	2673.17	2383.438	-0.01	0	0
727, Canal Canal	522863.2514	4813057.012	522624.9374	4812928.996	2671.21	2386.263	-0.01	0	0
728, Canal Walkvogel Canal	541626.8954	4808909.994	541823.9011	4808942.382	2729.63	2561.673	-10	0	0
728, Canal Deer Flat Low Line Cana	523541.532	4808266.988	523412.7967	4808737.508	2315	2300.249	-0.333333	0	0

729, CanalDeer Flat Low	523412.7967	4808737.508	523284.0613	4808207.997	2313.43	2300.449	-0.33333333	0	0
Line Cana									
729, CanalDeer Flat Low	523284.0613	4808207.997	522385.0629	4808841.006	2310.89	2290.584	-0.33333333	0	0
Line Cana									
729, CanalDeer Flat Low	522385.0629	4808841.006	521486.0614	4810474.014	2307.36	2276.6	-0.33333333	0	0
Line Cana									
729, CanalDeer Flat Low	521486.0614	4810474.014	521487.4076	4810703.011	2305.23	2269.876	-0.33333333	0	0
Line Cana									
729, CanalDeer Flat Low	521487.4076	4810703.011	520485.0616	4811883.013	2302.4	2261.851	-0.33333333	0	0
Line Cana									
729, CanalDeer Flat Low	520485.0616	4811883.013	519366.6894	4813870.706	2286.29	2244.063	-0.33333333	0	0
Line Cana									
731, CanalSouth Power	537095.3205	4808407.013	537512.7441	4807970.987	2698.89	2530.137	-20	0	0
Lateral									
732, CanalNorth Power	541932.1917	4809553.447	541224.2632	4810614.009	2725.6	2567.342	-100	0	0
Lateral									
732, CanalNorth Power	541224.2632	4810614.009	540361.923	4810816	2717.87	2572.155	-100	0	0
Lateral									
732, CanalNorth Power	540361.923	4810816	539953.3691	4810740.988	2712.46	2572.593	-100	0	0
Lateral									
732, CanalNorth Power	539953.3691	4810740.988	539376.3827	4810354.015	2707.83	2570.858	-100	0	0
Lateral									
732, CanalNorth Power	539376.3827	4810354.015	537972.1386	4810275.986	2899.08	2564.586	-100	0	0
Lateral									
732, CanalNorth Power	537972.1386	4810275.986	537132.2622	4809818.014	2888.78	2552.829	-100	0	0
Lateral									
732, CanalNorth Power	537132.2622	4809818.014	537037.9876	4809194.007	2882.52	2543.099	-100	0	0
Lateral									
732, CanalNorth Power	537037.9876	4809194.007	536904.2365	4808200.011	2879.74	2538.83	-100	0	0
Lateral									
732, CanalNorth Power	536904.2365	4808200.011	536933.0754	4807828.503	2673.03	2528.592	-100	0	0
Lateral									
733, CanalSouth Power	537738.3629	4807723.987	537512.7441	4807970.987	2697.48	2530.905	-20	0	0
Lateral									
734, CanalNorth Power	536962.1229	4807674	536933.0754	4807828.503	2667.29	2518.067	-4	0	0
Lateral									
735, CanalHat Butte Lateral	535550.3807	4808515.988	535655.2624	4808888.993	2688.81	2515.32	-100	0	0
735, CanalHat Butte Lateral	535655.2624	4808888.993	536005.63	4808431.001	2685.56	2510.29	-100	0	0
736, CanalHat Butte Lateral	536025.0153	4808436.823	535910.1971	4807772.42	2683.13	2502.432	-0.5	0	0
736, CanalHat Butte Lateral	535910.1971	4807772.42	535639.5347	4807493.528	2661.74	2489.482	-0.5	0	0
736, CanalHat Butte Lateral	535639.5347	4807493.528	535553.3982	4807323.602	2660.98	2481.313	-0.5	0	0
737, CanalHat Butte Lateral	535084.372	4807133.01	535537	4807319.487	2660.73	2470.774	-0.5	0	0
738, CanalFume Lateral	536221.8246	4807224.511	536170.0086	4807108.982	2668.77	2482.479	-0.5	0	0
738, CanalFume Lateral	536170.0086	4807108.982	535537	4807311.268	2663.49	2484.9	-0.5	0	0
739, CanalFume Lateral	536221.8246	4807224.511	536577.6177	4807179.492	2666.14	2497.64	-0.5	0	0

739, Canal Flume Lateral	536577.6177	4807179.492	536923.139	4806873.991	2863.52	2502.571	-0.5	0
740, Canal Flume Lateral	536923.139	4806873.991	536923.3218	4806831.014	2861.22	2503.525	-4	0
741, Canal South Power Lateral	5411614.011	4808903.99	541158.3654	4808893.992	2728.27	2567.429	-168.6667	0
741, Canal South Power Lateral	541158.3654	4808893.992	540904.4975	4808885.997	2725.92	2568.051	-166.6667	0
741, Canal South Power Lateral	540904.4975	4808685.997	540222.6904	4807331.008	2720.39	2566.495	-166.6667	0
741, Canal South Power Lateral	540222.6904	4807331.008	539572.491	4806841.987	2713.41	2548.78	-168.6667	0
741, Canal South Power Lateral	539572.491	4806841.987	538975.7536	4806810.989	2709.19	2537.988	-166.6667	0
741, Canal South Power Lateral	538975.7536	4806810.989	538211.681	4807206.01	2704.82	2534.934	-166.6667	0
742, Canal Flume Lateral	538211.681	4807206.01	537739.3629	4807723.987	2700.15	2532.974	-168.6667	0
743, Canal Walkvogel Canal	538905.8873	4806772.005	538923.3218	4806831.014	2689.4	2502.591	-4	0
743, Canal Walkvogel Canal	5411614.011	4808903.99	541651.2575	4808320.999	2729.3	2566.298	-400	0
743, Canal Walkvogel Canal	541651.2575	4808320.999	540903.8879	4808026.013	2728.53	2567.604	-400	0
743, Canal Walkvogel Canal	540903.8879	4808026.013	540596.0094	4807365.999	2727.67	2565.483	-400	0
743, Canal Walkvogel Canal	540596.0094	4807365.999	540520.1142	4806558.005	2728.8	2551.28	-400	0
744, Canal Flume Lateral	537415.1168	4806288.989	536905.8873	4806772.005	2679.41	2503.274	-4	0
745, Canal Walkvogel Canal	540520.1142	4806558.005	540242.2586	4806518.015	2725.97	2537.212	-4	0
745, Canal Walkvogel Canal	540242.2586	4806518.015	540267.0083	4806157.01	2725.11	2530.819	-4	0
745, Canal Walkvogel Canal	540267.0083	4806157.01	539768.1117	4805863	2723.84	2521.774	-4	0
746, Canal Butte Lateral	539768.1117	4805863	538189.0038	4805717.001	2701.74	2512.844	-0.5	0
747, Canal Flume Lateral	538189.0038	4805717.001	537961.9888	4805913.993	2680.41	2505.135	-4	0
747, Canal Flume Lateral	537961.9888	4805913.993	537787.125	4805837.001	2680.41	2503.768	-4	0
747, Canal Flume Lateral	537787.125	4805837.001	537415.1168	4806288.989	2680.41	2503.19	-4	0
749, Canal Butte Lateral	538189.0038	4805717.001	537897.2493	4805176.987	2678.52	2498.099	-0.5	0
749, Canal Butte Lateral	537897.2493	4805176.987	537361.0146	4805224.993	2674.98	2489.266	-0.5	0
749, Canal Butte Lateral	537361.0146	4805224.993	536945.3894	4805057.993	2671.95	2482.413	-0.5	0
750, Canal North McElroy Lateral	536571.735	4805239.013	536945.3894	4805057.993	2672.21	2477.36	-0.5	0
751, Canal North McElroy Lateral	535506.2457	4804835.001	535455.6184	4805291.988	2674.21	2450.847	-0.5	0
751, Canal North McElroy Lateral	535455.6184	4805291.988	535832.2598	4805644.001	2674.1	2459.61	-0.5	0

751, CanalNorth McElroy Lateral	535832.2588	4805644.001	536571.735	4805239.013	2673.95	2471.896	-0.5	0	0
752, CanalHut Butte Lateral	535084.372	4807133.01	534952.3631	4806815.012	2660.12	2458.627	-0.5	0	0
752, CanalHut Butte Lateral	534952.3631	4808815.012	535045.9367	4806403.99	2656.77	2453.666	-0.5	0	0
752, CanalHut Butte Lateral	535045.9367	4806403.99	534482.8797	4806244	2656.99	2443.619	-0.5	0	0
752, CanalHut Butte Lateral	534482.8797	4806244	534610.6214	4805625.012	2654.84	2433.275	-0.5	0	0
752, CanalHut Butte Lateral	534610.6214	4805625.012	534542.8643	4804826.985	2652.31	2428.029	-0.5	0	0
753, CanalSouth McElroy Lateral	536945.3894	4805057.983	537169.7526	4804395.988	2668.94	2475.11	-4	0	0
753, CanalSouth McElroy Lateral	537169.7526	4804395.988	537126.0138	4804038.01	2666.48	2467.972	-4	0	0
753, CanalSouth McElroy Lateral	537126.0138	4804038.01	536700.2387	4803840.012	2664.55	2460.935	-4	0	0
753, CanalSouth McElroy Lateral	536700.2387	4803840.012	536198.7513	4804050.985	2662.19	2455.214	-4	0	0
754, CanalHut Butte Lateral	534542.8643	4804826.985	534696.7578	4803252.988	2648.14	2418.408	-0.5	0	0
755, CanalCanal (pipeline)	528582.6222	4808501.988	528886.5127	4808492.997	2680.09	2388.673	-0.01	0	0
755, CanalCanal (pipeline)	528886.5127	4808492.997	529147.9958	4806054.994	2610.77	2372.973	-0.01	0	0
755, CanalCanal (pipeline)	529147.9958	4806054.994	529478.2466	4806043.99	2543.23	2356.616	-0.01	0	0
755, CanalCanal (pipeline)	529478.2466	4806043.99	529478.5877	4805349.991	2518.29	2363.131	-0.01	0	0
755, CanalCanal (pipeline)	529478.5877	4805349.991	529480.8983	4804655.982	2484.49	2342.243	-0.01	0	0
755, CanalCanal (pipeline)	529480.8983	4804655.982	529482.2394	4803961.993	2450.69	2330.903	-0.01	0	0
755, CanalCanal (pipeline)	529482.2394	4803961.993	529483.5501	4803267.994	2416.9	2318.658	-0.01	0	0
756, CanalNicholson Ditch	529210.6017	4803007.237	528916.5002	4803448.009	2311.16	2304.867	-7.551857	0	3.40E-11
756, CanalNicholson Ditch	528916.5002	4803448.009	528453.8138	4803543.015	2300.46	2304.622	4.894362	0	4.75E-11
756, CanalNicholson Ditch	528453.8138	4803543.015	528057.4823	4803917.492	2289.6	2302.672	15.66697	0	4.75E-11
756, CanalNicholson Ditch	528057.4823	4803917.492	527661.1204	4804292	2277.96	2302.956	29.99466	0	1.58E-11
756, CanalNicholson Ditch	527661.1204	4804292	527293.5318	4804434.006	2267.94	2301.201	39.91288	0	6.33E-11
756, CanalNicholson Ditch	527293.5318	4804434.006	526925.9428	4804576.013	2259.52	2297.752	45.8781	0	1.97E-10
756, CanalNicholson Ditch	526925.9428	4804576.013	526644.6124	4805110.997	2248.87	2298.412	58.45064	0	6.00E-10
756, CanalNicholson Ditch	526644.6124	4805110.997	526347.2495	4805134.985	2239.23	2298.154	71.90861	0	8.71E-10
756, CanalWaldvogel Canal	539768.1117	4805863	539896.0058	4805715.995	2722.96	2516.145	-0.5	0	0
756, CanalWaldvogel Canal	539896.0058	4805715.995	539731.9319	4805501.995	2722.71	2511.823	-0.5	0	0
756, CanalWaldvogel Canal	539731.9319	4805501.995	540028.8681	4805073.995	2722.3	2504.418	-0.5	0	0
756, CanalWaldvogel Canal	540028.8681	4805073.995	539880.7404	4804690.008	2721.8	2495.48	-0.5	0	0

758, CanalWaldvogel Canal	539860.7404	4804680.008	539847.8218	4804539.985	2721.48	2488.978	-0.5	0
758, CanalWaldvogel Canal	539847.8218	4804539.985	539730.1336	4804404.989	2721.26	2487.151	-0.5	0
758, CanalWaldvogel Canal	539730.1336	4804404.989	539737.9974	4803866.011	2720.84	2480.487	-0.5	0
758, CanalWaldvogel Canal	539737.9974	4803866.011	539555.5137	4803792.006	2720.45	2474.54	-0.5	0
758, CanalWaldvogel Canal	539555.5137	4803792.006	539432.8622	4803455.994	2720.16	2470.687	-0.5	0
758, CanalWaldvogel Canal	539432.8622	4803455.994	538876.2364	4803521.008	2719.68	2468.019	-0.5	0
758, CanalWaldvogel Canal	538876.2364	4803521.008	538526.9868	4803276.01	2718.16	2465.199	-0.5	0
758, CanalWaldvogel Canal	538526.9868	4803276.01	538582.2568	4802907.995	2718.74	2459.072	-0.5	0
759, CanalCanal	534698.7578	4803252.998	535413.0074	4803254.003	2840.99	2425.362	-200	0
759, CanalCanal	535413.0074	4803254.003	535862.0082	4802880.989	2633	2434.151	-200	0
759, CanalCanal	535862.0082	4802880.989	536250.5673	4802880.014	2627.03	2436.564	-200	0
760, CanalGulch Lateral	538582.2568	4802907.995	538446.1331	4802703.992	2708.32	2453.721	-4	0
761, CanalGulch Lateral	538446.1331	4802703.992	538182.9983	4802984.009	2684.45	2453.442	-0.5	0
761, CanalGulch Lateral	538182.9983	4802984.009	537781.2424	4803078.987	2682.88	2454.684	-0.5	0
761, CanalGulch Lateral	537781.2424	4803078.987	537626.7393	4802980.894	2674.31	2452.342	-0.5	0
761, CanalGulch Lateral	537626.7393	4802980.894	537632.3878	4802532.899	2664.56	2447.68	-0.5	0
762, CanalCanal (pipeline)	533610.2373	4802643.001	533219.2398	4803089.991	2653.05	2379.301	-0.01	0
762, CanalCanal (pipeline)	533219.2398	4803089.991	532566.6326	4803088.99	2560.99	2371.073	-0.01	0
762, CanalCanal (pipeline)	532566.6326	4803088.99	532382.7467	4802768	2486.74	2360.609	-0.01	0
762, CanalCanal (pipeline)	532382.7467	4802768	532423.1327	4802324.001	2427.78	2353.968	-0.01	0
762, CanalCanal (pipeline)	532423.1327	4802324.001	531852.5471	4802407.449	2352.29	2345.978	0.00831235	4.89E-11
763, CanalWaldvogel Canal	538582.2568	4802907.995	538715.8811	4803094.014	2717.7	2457.871	-0.5	0
763, CanalWaldvogel Canal	538715.8811	4803094.014	538035.3725	4802707.009	2715.01	2456.948	-0.5	0
763, CanalWaldvogel Canal	538035.3725	4802707.009	538385.1305	4802860.994	2711.77	2455.646	-0.5	0
763, CanalWaldvogel Canal	538385.1305	4802860.994	539372.3898	4801910	2706.87	2449.489	-0.5	0
764, CanalHat Butte Lateral	534698.7578	4803252.998	534854.8881	4802631.001	2615.24	2412.531	-20	0
764, CanalHat Butte Lateral	534854.8881	4802631.001	535245.7636	4802704.998	2566.4	2413.638	-20	0
764, CanalHat Butte Lateral	535245.7636	4802704.998	535859.5089	4802400.999	2515.53	2421.164	-20	0
764, CanalHat Butte Lateral	535859.5089	4802400.999	535928.2413	4801884.001	2458.85	2418.001	-20	0
765, CanalNicholson Ditch	531132.3962	4801937.67	530837.045	4801982.68	2316.33	2316.033	-0.3568973	1.08E-10

765, Canal Nicholson Ditch	530837.045	4801982.68	529707.4866	4802478.001	2313.86	2303.767	-12	0	0
765, Canal Nicholson Ditch	529707.4866	4802478.001	528245.0441	4802863.895	2310.79	2299.781	-12	0	0
766, Canal Waldvogel Canal	539372.3998	4801910	539971.3828	4802007	2702.92	2443.528	-0.5	0	0
766, Canal Waldvogel Canal	539971.3828	4802007	541169.9478	4800883	2701.28	2436.671	-0.5	0	0
767, Canal Midway Lateral	539372.3898	4801910	539175.2452	4801721	2692.17	2440.816	-0.5	0	0
767, Canal Midway Lateral	539175.2452	4801721	539172.8678	4801209.999	2659.97	2435.245	-0.5	0	0
767, Canal Midway Lateral	539172.8678	4801209.999	538980.8717	4801031.999	2628.54	2429.629	-0.5	0	0
767, Canal Midway Lateral	538980.8717	4801031.999	538803.2368	4800990.001	2610.19	2427.085	-0.5	0	0
767, Canal Midway Lateral	538803.2368	4800990.001	538787.3872	4801102	2597.65	2427.079	-0.5	0	0
767, Canal Midway Lateral	538787.3872	4801102	538285.3206	4800921	2571.09	2424.977	-0.5	0	0
768, Canal Waldvogel Canal	541169.9478	4800983	540608.3843	4800641.999	2653.81	2426.742	-4	0	0
769, Canal Waldvogel Canal	540608.3843	4800641.999	540558.4276	4800504	2598.76	2424.035	-4	0	0
770, Canal Whizzer Lateral	540558.4276	4800504	540515.0548	4800504	2581.45	2423.101	-4	0	0
771, Canal Whizzer Lateral	540471.9883	4800503.001	540515.0548	4800504	2577.34	2423.103	-4	0	0
772, Canal Hat Butte Lateral	535928.2413	4801894.001	535471.8642	4801732	2426.79	2408.087	-10	0	0
772, Canal Hat Butte Lateral	535471.8642	4801732	535303.7366	4801329.999	2412.38	2397.051	-10	0	0
772, Canal Hat Butte Lateral	535303.7366	4801329.999	535004.6973	4801200.999	2400.41	2387.281	-10	0	0
772, Canal Hat Butte Lateral	535004.6973	4801200.999	534590.8703	4800678.002	2384.8	2374.727	-10	0	0
772, Canal Hat Butte Lateral	534590.8703	4800678.002	534402.7478	4800224.999	2366.61	2360.253	-8.356543	0	1.49E-11
773, Canal Canal	535106.0128	4800300.001	534402.7478	4800224.999	2360.54	2360.955	0.1659636	0	2.18E-11
774, Canal Waldvogel Canal	540807.3882	4800126.999	540558.4276	4800504	2592.56	2420.415	-4	0	0
775, Canal Gulch Lateral	538446.1331	4802703.992	538815.4898	4802037.001	2677.48	2447.015	-0.5	0	0
775, Canal Gulch Lateral	538815.4898	4802037.001	538565.889	4801690.002	2642.17	2439.296	-0.5	0	0
775, Canal Gulch Lateral	538565.889	4801690.002	538539.7372	4801328.999	2618.75	2432.942	-0.5	0	0
775, Canal Gulch Lateral	538539.7372	4801328.999	538074.8867	4801337	2594.22	2428.494	-0.5	0	0
775, Canal Gulch Lateral	538074.8867	4801337	537921.3894	4801077	2571.46	2424.07	-0.5	0	0
775, Canal Gulch Lateral	537921.3894	4801077	537879.6318	4800802	2554.25	2418.828	-0.5	0	0
775, Canal Gulch Lateral	537879.6318	4800802	538082.1105	4800455.001	2534.08	2414.371	-0.5	0	0
775, Canal Gulch Lateral	538082.1105	4800455.001	537992.4993	4800091.999	2511.06	2408.98	-0.5	0	0
776, Canal Nicholson Ditch	532921.1759	4799875	532505.4897	4800186.999	2323.19	2320.191	-3.599073	0	1.67E-11
776, Canal Nicholson Ditch	532505.4897	4800186.999	532181.3654	4800885.999	2319.83	2317.384	-2.935054	0	1.68E-11

776, CanalNicholson Ditch	532181.3654	4800985.999	531940.6953	4800852.999	2317.08	2317.758	0.8372019	0	5.91E-11
776, CanalNicholson Ditch	531940.6953	4800852.999	531882.992	4801020.999	2315.6	2313.404	-2.634689	0	3.61E-11
776, CanalNicholson Ditch	531862.992	4801020.999	531150.1355	4801936	2312.28	2317.042	5.738629	0	8.66E-11
777, CanalCanal	534878.1138	4800157.001	534495.3155	4800012.501	2356.42	2356.833	0.1853003	0	2.15E-11
777, CanalCanal	534495.3155	4800012.501	534112.4867	4799867.999	2351.45	2348.49	-1.184039	0	7.43E-12
777, CanalCanal	534112.4867	4799867.999	533915.4335	4799671.5	2347.28	2341.145	-2.454013	0	1.15E-11
777, CanalCanal	533915.4335	4799671.5	533718.3803	4799474.999	2343.91	2334.998	-3.584658	0	1.05E-11
778, CanalCanal	533718.3803	4799474.999	533698.2635	4799423.999	2338.09	2331.482	-2.643392	0	9.36E-12
779, CanalCanal	533698.2635	4799423.999	533662.9982	4799377.999	2333.31	2330.346	-1.185621	0	1.25E-11
780, CanalCanal	532938.4888	4798888.001	533662.9982	4798377.999	2344.13	2322.059	-4	0	0
781, CanalCanal	532838.4888	4798888.001	532525.0883	4798617.999	2308.04	2311.448	1.36322	0	1.44E-11
782, CanalWhizzer Lateral	540471.9863	4800503.001	540083.4882	4800489.001	2575.97	2422.952	-0.5	0	0
782, CanalWhizzer Lateral	540083.4882	4800489.001	540032.6781	4799983	2562.54	2418.948	-0.5	0	0
782, CanalWhizzer Lateral	540032.6781	4799983	539376.8704	4799119.001	2538.69	2407.749	-0.5	0	0
782, CanalWhizzer Lateral	539376.8704	4799119.001	538888.0017	4798862	2514.18	2396.161	-0.5	0	0
782, CanalWhizzer Lateral	538888.0017	4798862	538721.7638	4798581.999	2501.04	2389.578	-0.5	0	0
782, CanalWhizzer Lateral	538721.7638	4798581.999	538096.2532	4798718	2486.58	2385.2	-0.5	0	0
785, CanalWalters Butte Lateral	536351.1208	4798246.999	535886.758	4799149	2450.33	2355.707	-4	0	0
785, CanalWalters Butte Lateral	535886.758	4799149	536373.1274	4800352.999	2443.29	2374.119	-4	0	0
785, CanalWalters Butte Lateral	536373.1274	4800352.999	536628.4888	4800581.999	2438.29	2382.751	-4	0	0
785, CanalWalters Butte Lateral	536628.4888	4800581.999	537308.9243	4800154.002	2434.8	2388.181	-4	0	0
785, CanalWalters Butte Lateral	537308.9243	4800154.002	537338.368	4799870.001	2431.49	2398.545	-4	0	0
785, CanalWalters Butte Lateral	537338.368	4799870.001	537073.6187	4799503.001	2429.24	2389.298	-4	0	0
785, CanalWalters Butte Lateral	537073.6187	4799503.001	537282.9858	4799288.001	2426.95	2383.886	-4	0	0
785, CanalWalters Butte Lateral	537282.9858	4799288.001	537242.1122	4798350	2423.18	2375.146	-4	0	0
785, CanalWalters Butte Lateral	537242.1122	4798350	536961.6352	4797591.999	2417.86	2358.127	-4	0	0
785, CanalWalters Butte Lateral	536961.6352	4797591.999	536876.4948	4797709.999	2414.46	2348.451	-4	0	0
789, CanalWaldvogel Canal	540807.3982	4800126.999	540820.363	4799981	2585.1	2416.763	-0.5	0	0

788, CanalWaldvogel Canal	540620.363	4789981	540721.4956	4799672	2595.06	2413.508	-0.5	0	0
788, CanalWaldvogel Canal	540721.4956	4799672	540537.8231	4798404.002	2595.02	2409.271	-0.5	0	0
788, CanalWaldvogel Canal	540537.8231	4798404.002	540501.0033	4798835.001	2594.96	2402.846	-0.5	0	0
788, CanalWaldvogel Canal	540501.0033	4798835.001	540648.3741	4798474.999	2594.9	2395.565	-0.5	0	0
788, CanalWaldvogel Canal	540648.3741	4798474.999	540192.3628	4798593.999	2594.85	2393.36	-0.5	0	0
788, CanalWaldvogel Canal	540192.3628	4798593.999	540249.2385	4798411.999	2594.81	2392.437	-0.5	0	0
788, CanalWaldvogel Canal	540249.2385	4798411.999	539915.0558	4798194	2594.77	2388.719	-0.5	0	0
788, CanalWaldvogel Canal	539915.0558	4798194	540154.0494	4797657.001	2594.71	2382.141	-0.5	0	0
788, CanalWaldvogel Canal	540154.0494	4797657.001	540568.8706	4797366.999	2594.64	2376.054	-0.5	0	0
788, CanalWaldvogel Canal	540568.8706	4797366.999	540750.3602	4798896	2594.57	2370.471	-0.5	0	0
788, CanalWaldvogel Canal	540750.3602	4798896	541090.6389	4789908	2594.52	2367.224	-0.5	0	0
810, Canal(NULL)	546087.8215	4801343.999	544777.8654	4802346.001	2634.94	2446.702	-0.33333333	0	0
810, Canal(NULL)	544777.8654	4802346.001	544610.8046	4802238.001	2692.95	2451.106	-0.33333333	0	0
810, Canal(NULL)	544610.8046	4802238.001	543776.8108	4802370.001	2699.25	2450.948	-0.33333333	0	0
810, Canal(NULL)	543776.8108	4802370.001	543300.1341	4802255	2636.93	2460.71	-0.33333333	0	0
810, Canal(NULL)	543300.1341	4802255	543223.1111	4801995	2621.63	2448.017	-0.33333333	0	0
810, Canal(NULL)	543223.1111	4801995	542545.2359	4801561.001	2797.18	2442.81	-0.33333333	0	0
810, Canal(NULL)	542545.2359	4801561.001	542481.0146	4801310.001	2773.01	2437.386	-0.33333333	0	0
810, Canal(NULL)	542481.0146	4801310.001	541861.8743	4801200.999	2752.84	2434.136	-0.33333333	0	0
810, Canal(NULL)	541861.8743	4801200.999	541751.5062	4801009.999	2733.55	2431.253	-0.33333333	0	0
810, Canal(NULL)	541751.5062	4801009.999	541331.6747	4801096.001	2718.8	2430.067	-0.33333333	0	0
810, Canal(NULL)	541331.6747	4801096.001	541169.9478	4800983	2704.58	2429.657	-0.33333333	0	0
1, Lake Lowell	520639.6013	4824599.178	520887.3488	4824457.629	2523	2497.065	-59.85063	0	1.45E-10
1, Lake Lowell	520887.3488	4824457.629	521347.4597	4824351.437	2522.98	2502.285	-47.80366	0	1.39556E-10
1, Lake Lowell	521347.4597	4824351.437	521559.8199	4823873.632	2522.97	2506.064	-39.01428	0	1.44E-10
1, Lake Lowell	521559.8199	4823873.632	522108.4203	4823608.182	2522.95	2510.052	-28.76349	0	1.52E-10
1, Lake Lowell	522108.4203	4823608.182	522303.0808	4823608.182	2522.94	2512.951	-23.0528	0	1.51E-10
1, Lake Lowell	522303.0808	4823608.182	523099.4196	4823307.344	2522.92	2515.611	-16.86602	0	1.43E-10
1, Lake Lowell	523099.4196	4823307.344	523532.9915	4823201.152	2522.9	2518.383	-10.42354	0	1.30E-10
1, Lake Lowell	523532.9915	4823201.152	523966.5482	4823094.99	2522.89	2520.033	-6.593902	0	1.23E-10

1, Lake Lowell	523666.5482	4823094.99	524373.5781	4822723.347	2522.87	2521.335	-3.542807	0	1.23E-10
1, Lake Lowell	524373.5781	4822723.347	524780.608	4822351.735	2522.86	2521.926	-2.155502	0	1.40E-10
1, Lake Lowell	524780.608	4822351.735	524851.3826	4822088.576	2522.84	2521.481	-3.136413	0	1.28E-10
1, Lake Lowell	524851.3826	4822088.576	524869.0814	4821555.384	2522.83	2519.301	-8.143476	0	1.31E-10
1, Lake Lowell	524869.0814	4821555.384	525594.6374	4821077.58	2522.81	2518.028	-11.03482	0	1.45E-10
1, Lake Lowell	525594.6374	4821077.58	526037.0546	4820971.387	2522.78	2520.384	-5.553081	0	1.24E-10
1, Lake Lowell	526037.0546	4820971.387	526337.8922	4820776.742	2522.78	2522.61	-0.3913823	0	2.15E-10
1, Lake Lowell	526337.8922	4820776.742	526709.5348	4820281.229	2522.76	2524.885	4.904595	0	8.81E-11
1, Lake Lowell	526709.5348	4820281.229	527134.2431	4820369.712	2522.74	2527.854	11.80119	0	8.05E-11
1, Lake Lowell	527134.2431	4820369.712	527541.273	4820352.003	2522.73	2529.489	15.58852	0	6.45E-11
1, Lake Lowell	527541.273	4820352.003	528182.3284	4819977.678	2522.71	2532.1	21.86987	0	4.52E-11
1, Lake Lowell	528182.3284	4819977.678	528709.2362	4819661.845	2522.69	2536.377	31.58552	0	2.74E-11
1, Lake Lowell	528709.2362	4819661.845	529457.4287	4819328.942	2522.67	2540.986	42.26747	0	1.59E-11
1, Lake Lowell	529457.4287	4819328.942	530284.2292	4818812.398	2522.64	2542.487	45.80061	0	1.08E-11
1, Lake Lowell	530284.2292	4818812.398	530514.2922	4818953.977	2522.62	2539.395	38.71127	0	1.03E-11
1, Lake Lowell	530514.2922	4818953.977	531009.7751	4818989.395	2522.61	2535.716	30.24473	0	1.05E-11
1, Lake Lowell	531009.7751	4818989.395	531045.1929	4819130.944	2522.6	2533.24	24.55358	0	1.08E-11
1, Lake Lowell	531045.1929	4819130.944	531576.0935	4819095.557	2522.59	2531.246	19.97614	0	1.21E-11
1, Lake Lowell	531576.0935	4819095.557	531717.6426	4818989.395	2522.58	2530.146	17.45907	0	1.21E-11
1, Lake Lowell	531717.6426	4818989.395	532018.4802	4819113.266	2522.57	2529.14	15.16258	0	9.06E-12
1, Lake Lowell	532018.4802	4819113.266	532071.5764	4819661.845	2522.56	2525.753	7.368928	0	1.23E-11
1, Lake Lowell	532071.5764	4819661.845	531876.9311	4820121.971	2522.54	2521.895	-1.48943	0	3.78E-11
1, Lake Lowell	531876.9311	4820121.971	531505.2885	4820564.357	2522.53	2519.368	-7.301907	0	1.58E-11
1, Lake Lowell	531505.2885	4820564.357	530832.8082	4820422.808	2522.51	2520.709	-4.158639	0	1.34E-11
1, Lake Lowell	530832.8082	4820422.808	530408.0899	4820900.613	2522.49	2522.147	-0.792039	0	5.59E-12
1, Lake Lowell	530408.0899	4820900.613	530001.07	4821059.871	2522.47	2521.652	-1.88754	0	3.07E-11
1, Lake Lowell	530001.07	4821059.871	529116.2661	4821059.871	2522.45	2524.124	3.862537	0	2.71E-11
1, Lake Lowell	529116.2661	4821059.871	528726.945	4822015.48	2522.42	2523.943	3.514151	0	2.33E-11
1, Lake Lowell	528726.945	4822015.48	528620.7527	4822493.315	2522.4	2523.43	2.37773	0	1.37E-11
1, Lake Lowell	528620.7527	4822493.315	528390.6897	4822723.347	2522.38	2524.636	5.205463	0	2.78E-11
1, Lake Lowell	528390.6897	4822723.347	527983.6902	4822847.218	2522.37	2527.554	11.96214	0	2.77E-11

1, Lake Lowell	527983.6902	4822847.218	527576.6603	4822971.119	2522.36	2530.579	18.96671	0	3.23E-11
1, Lake Lowell	527576.6603	4822971.119	527364.3062	4822900.314	2522.35	2532.078	22.44389	0	3.79E-11
1, Lake Lowell	527364.3062	4822900.314	527275.8227	4822581.768	2522.34	2531.137	20.30072	0	4.33E-11
1, Lake Lowell	527275.8227	4822581.768	527081.147	4822705.669	2522.33	2530.757	19.44689	0	4.68E-11
1, Lake Lowell	527081.147	4822705.669	526532.5679	4822599.477	2522.32	2531.724	21.70194	0	5.49E-11
1, Lake Lowell	526532.5679	4822599.477	525983.9584	4822493.315	2522.3	2530.75	19.50071	0	7.07E-11
1, Lake Lowell	525983.9584	4822493.315	525587.4136	4822601.244	2522.29	2528.063	15.62985	0	7.72E-11
1, Lake Lowell	525587.4136	4822601.244	525179.3778	4822815.123	2522.27	2527.782	12.72039	0	8.57E-11
1, Lake Lowell	525179.3778	4822815.123	524975.2533	4823254.248	2522.26	2527.243	11.49934	0	9.18E-11
1, Lake Lowell	524975.2533	4823254.248	525187.6074	4823838.245	2522.24	2528.813	15.16745	0	7.21E-11
1, Lake Lowell	525187.6074	4823838.245	525346.8959	4824510.725	2522.22	2529.975	17.89719	0	5.71E-11
1, Lake Lowell	525346.8959	4824510.725	525417.6705	4825360.142	2522.2	2528.313	16.41557	0	3.82E-11
1, Lake Lowell	525417.6705	4825360.142	524708.803	4825891.042	2522.17	2527.403	12.07507	0	3.335E-11
1, Lake Lowell	524708.803	4825891.042	523789.5813	4826156.493	2522.14	2523.089	2.142943	0	3.21E-11
1, Lake Lowell	523789.5813	4826156.493	523240.9992	4826262.685	2522.12	2517.988	-9.538467	0	3.41E-11
1, Lake Lowell	523240.9992	4826262.685	523064.0293	4826244.976	2522.11	2515.786	-14.59448	0	3.59E-11
1, Lake Lowell	523064.0293	4826244.976	522904.7591	4826475.009	2522.1	2514.84	-17.21493	0	3.72E-11
1, Lake Lowell	522904.7591	4826475.009	522816.2787	4826191.88	2522.08	2514.386	-17.77825	0	3.82E-11
1, Lake Lowell	522816.2787	4826191.88	522267.6905	4825855.655	2522.08	2514.259	-18.04783	0	5.32E-11
1, Lake Lowell	522267.6905	4825855.655	521931.4504	4825891.042	2522.06	2513.18	-20.49137	0	6.74E-11
1, Lake Lowell	521931.4504	4825891.042	521595.2164	4825563.657	2522.05	2511.757	-23.75362	0	7.61E-11
1, Lake Lowell	521595.2164	4825563.657	521258.9793	4825236.271	2522.03	2508.663	-30.84735	0	9.58E-11
1, Lake Lowell	521258.9793	4825236.271	520931.5936	4824935.433	2522.02	2504.263	-40.97866	0	1.13E-10
1, Lake Lowell	520931.5936	4824935.433	520604.211	4824634.585	2522.01	2498.323	-54.88297	0	1.34E-10
1000, far field canal	527514.8469	4824534.621	527033.7201	4825249.042	2500	2518.708	556.9333	0	1.29E-11
1000, far field canal	527033.7201	4825249.042	526581.7626	4826575.806	2500	2516.125	537.4868	0	7.74E-12
1000, far field canal	526581.7626	4826575.806	526363.0382	4827421.413	2500	2513.586	452.883	0	5.70E-12
1000, far field canal	526363.0382	4827421.413	525575.7398	4828325.358	2500	2508.122	304.054	0	4.62E-12
1000, far field canal	525575.7398	4828325.358	523811.5878	4828398.286	2500	2504.298	143.283	0	6.55E-12
1000, far field canal	523811.5878	4828398.286	523826.1878	4827598.388	2500	2505.679	189.3158	0	2.30E-12

1000, far field canal	523826.1878	4827598.368	522995.1414	4826738.161	2500	2509.217	307.2234	0	1.18E-11
1000, far field canal	522985.1414	4826738.161	522572.329	4827202.719	2500	2508.135	271.1507	0	1.90E-11
1000, far field canal	522572.329	4827202.719	522324.4686	4828412.836	2500	2503.81	126.9686	0	9.99E-12
1001, far field canal	521682.9591	4825848.816	521522.5888	4826182.128	2500	2511.915	1.191488	0	8.16E-11
1001, far field canal	521522.5888	4826182.128	521551.7488	4826707.022	2500	2511.582	1.158173	0	7.11E-11
1001, far field canal	521551.7488	4826707.022	521449.6898	4827829.862	2500	2506.407	0.640888	0	5.01E-11
1001, far field canal	521449.6898	4827829.862	520881.0791	4828442.005	2500	2489.038	-1	0	0
1002, far field canal	521580.8999	4825788.477	521245.5711	4828255.034	2500	2510.828	1.082623	0	8.53E-11
1002, far field canal	521245.5711	4828255.034	521216.4109	4826794.5	2500	2508.815	0.8815045	0	7.43E-11
1002, far field canal	521216.4109	4826794.5	520851.9189	4827217.288	2500	2503.586	0.3585906	0	7.29E-11
1002, far field canal	520851.9189	4827217.288	520079.1899	4828383.868	2500	2482.218	-1	0	0
1003, far field canal	520953.9812	4825103.226	520399.9492	4826327.943	2500	2501.467	0.1467042	0	1.17E-10
1003, far field canal	520399.9492	4826327.943	520035.4511	4826825.716	2500	2490.779	-0.9221131	0	9.64E-11
1003, far field canal	520035.4511	4828825.716	519554.3213	4827333.935	2500	2475.371	-1	0	0
1003, far field canal	519554.3213	4827333.935	518825.3403	4827875.448	2500	2447.938	-1	0	0
1003, far field canal	518825.3403	4827875.448	518621.2187	4828296.219	2500	2426.476	-1	0	0
1004, far field canal	520434.869	4824228.572	520035.4511	4824724.178	2538.74	2484.028	-1	0	0
1004, far field canal	520035.4511	4824724.178	519306.4701	4826182.126	2537.8	2474.678	-1	0	0
1004, far field canal	519306.4701	4826182.126	518839.9188	4827231.888	2536.65	2454.12	-1	0	0
1004, far field canal	518839.9188	4827231.888	517484.0008	4827840.107	2535.59	2413.818	-1	0	0
Boise River far field	574631.8672	4819906.081	569970.2255	4823685.753	2681.31	2681.31	-533.0381	0	0
Boise River far field	569970.2255	4823685.753	564804.658	4828095.386	2841.46	2641.46	-156.0075	0	0
Boise River far field	564804.658	4828095.386	559281.108	4833134.98	2598.96	2596.96	-64.18667	0	0
Boise River far field	559281.108	4833134.98	553969.5362	4836284.753	2554.44	2554.44	-9.308249	0	0
Boise River far field	553969.5362	4836284.753	547292.0682	4837418.639	2514.16	2514.16	25.36865	0	0
Boise River far field	547292.0682	4837418.639	539858.6678	4836158.748	2469.58	2469.58	69.57675	0	0
Boise River far field	539858.6678	4836158.748	534819.0741	4837166.661	2430.09	2430.09	106.927	0	0
Boise River far field	534819.0741	4837166.661	528401.5284	4837418.639	2397.18	2397.18	128.961	0	0
Boise River far field	529401.5284	4837418.639	525243.8735	4836914.683	2367.24	2367.24	146.3489	0	0
Boise River far field	525243.8735	4836914.683	522220.099	4835276.81	2343.49	2343.49	218.0344	0	0
Boise River far field	522220.099	4835276.81	516928.5302	4840190.429	2310.28	2310.28	122.3021	0	0

Boise River far field	516928.5302	4840190.429	511132.999	4841576.325	2289.23	2269.23	90.09314	0	0
Boise River far field	511132.999	4841576.325	507605.2895	4842584.237	2239.23	2239.23	58.90015	0	0
Boise River far field	507605.2895	4842584.237	503069.6491	4846615.888	2208.9	2208.9	188.4852	0	0
Snake River far field 1	562032.6678	4772155.93	556489.3178	4775053.7	2343.39	2343.39	529.4726	0	0
Snake River far field 1	556489.3178	4775053.7	551449.7241	4780597.25	2328.86	2328.86	397.0963	0	0
Snake River far field 1	551449.7241	4780597.25	550893.7898	4786518.771	2314.64	2314.64	384.4115	0	0
Snake River far field 1	550893.7898	4786518.771	547418.0735	4792692.288	2300.94	2300.94	313.0539	0	0
Snake River far field 1	547418.0735	4792692.288	541496.541	4793070.239	2287.29	2287.29	392.9609	0	0
Snake River far field 1	541496.541	4793070.239	538472.7728	4793448.21	2277.8	2277.8	614.8262	0	0
Snake River far field 1	538472.7728	4793448.21	535449.0347	4793826.18	2271.36	2271.36	875.9494	0	0
Snake River far field 1	535449.0347	4793826.18	534288.783	4795362.375	2266.1	2266.1	1118.35	0	0
Snake River far field 1	534288.783	4795362.375	533128.5009	4796898.57	2262.03	2262.03	680.2449	0	0
Snake River far field 2	512734.1591	4826416.06	506471.3787	4828221.391	2205.52	2205.52	156.7089	0	0
Snake River far field 2	506471.3787	4828221.391	503573.6085	4830993.181	2203.12	2203.12	149.0727	0	0
Snake River far field 2	503573.6085	4830993.181	502313.7086	4834288.897	2201.41	2201.41	122.368	0	0
Snake River far field 2	502313.7086	4834288.897	498408.0288	4836158.748	2199.63	2199.63	82.75196	0	0
Snake River far field 2	498408.0288	4836158.748	493998.39	4835402.814	2197.62	2197.62	180.294	0	0
Snake River far field 2	493998.39	4835402.814	493116.46	4839938.451	2195.55	2195.55	338.4493	0	0
Snake River far field 2	493116.46	4839938.451	497526.0991	4844348.084	2193.08	2193.08	179.0518	0	0
Snake River far field 2	497526.0991	4844348.084	497400.1101	4848001.783	2190.83	2190.83	333.8716	0	0
82,Drain south	517980.8096	4811801.606	518201.2318	4811991.309	2305.88	2285.904	0	0	0
82,Drain south	518201.2318	4811991.309	518421.857	4812081.011	2288	2281.936	0	0	0
82,Drain south	518421.857	4812081.011	518443.7581	4812422.448	2286.21	2287.454	0.7462621	8.4145E-09	0
82,Drain south	518443.7581	4812422.448	518537.8986	4812856.484	2236.68	2245.32	5.184046	1.18885E-08	0
83,Drain(NULL)	523238.5638	4806439.011	522791.1571	4807185.007	2320.25	2309.046	-1.5	0	0
84,Drain, south	523238.5638	4806439.011	523722.0986	4805514.004	2319.67	2310.154	-15	0	0
84,Drain, south	523722.0986	4805514.004	524267.8734	4804924.003	2316.21	2310.343	-15	0	0
84,Drain, south	524267.8734	4804924.003	525008.1107	4804607.011	2313.2	2306.182	-15	0	0
84,Drain, south	525008.1107	4804607.011	525148.9893	4804298.986	2311.07	2301.803	-15	0	0
84,Drain, south	525148.9893	4804298.986	525771.8786	4804185.996	2308.24	2297.562	-15	0	0

85,Drain south	526938.3177	4799922	527863.9953	4801009.999	2358.45	2357.64	35.6872	0	1.14E-11
85,Drain south	527863.9953	4801009.999	527609.8397	4801778.001	2340.45	2325.689	0	0	0
85,Drain south	527609.8397	4801776.001	527876.1263	4801840.999	2332.71	2318.47	0	0	0
85,Drain south	527876.1263	4801840.999	527907.7646	4802211.999	2328.08	2311.06	0	0	0
85,Drain south	527907.7646	4802211.999	526830.8147	4803552.006	2313.11	2299.139	0	0	0
85,Drain south	526830.8147	4803552.006	528491.237	4803339.988	2297.94	2308.414	254.2285	0	3.35E-12
87,Drain(NULL)	526856.6825	4799149	526743.3676	4799756	2378.63	2446.958	170.8201	0	3.84E-11
87,Drain(NULL)	526743.3676	4799756	526938.3177	4799922	2369.39	2400.468	77.69382	0	1.82E-11
102,Drain, south	527748.9826	4800347.55	528125.7575	4800300.001	2327.74	2327.835	285.323	0	1.31E-10
102,Drain, south	528125.7575	4800300.001	528361.4289	4800428.002	2324.97	2322.091	0	0	0
102,Drain, south	528361.4289	4800428.002	528991.1152	4799800.001	2320.03	2320.044	42.76671	0	8.17E-10
104,Drain, south	526589.3826	4803624	526377.1199	4803804.503	2256.71	2283.673	16.17792	0	1.57E-11
104,Drain, south	526377.1199	4803804.503	526563.2813	4803785.001	2254.68	2284.254	17.74411	0	4.19E-11
104,Drain, south	526563.2813	4803785.001	526509.4946	4803881.008	2253.29	2284.345	18.63326	0	9.80E-11
104,Drain, south	526509.4946	4803881.008	525396.5478	4804633.985	2246.91	2290.392	28.08895	0	1.05E-10
104,Drain, south	525396.5478	4804633.985	525230.6147	4804894.986	2239.73	2296.069	33.80333	0	1.98117E-09
104,Drain, south	525230.6147	4804894.986	525721.5561	4805402.681	2235.33	2295.151	35.89254	0	2.1193E-08
106,Drain south	522791.1571	4807195.007	522485.781	4807379.014	2318.63	2315.773	-85.7182	0	2.50E-11
106,Drain south	522485.781	4807379.014	522532.9366	4807659.004	2318.19	2316.174	-80.46708	0	7.34E-12
106,Drain south	522532.9366	4807659.004	522306.5952	4807718.988	2317.84	2316.057	-53.20278	0	1.05E-11
106,Drain south	522306.5952	4807718.988	521857.4053	4808986.992	2316.76	2313.485	-98.25391	0	4.18E-11
108,Drain south	521857.4053	4808986.992	521613.5013	4808984	2315.68	2310.017	-150	0	0
106,Drain south	521613.5013	4808984	521455.0632	4809247.012	2315.3	2310.506	-143.8308	0	1.14E-10
106,Drain south	521455.0632	4809247.012	521299.9383	4809301.997	2314.97	2307.372	-150	0	0
106,Drain south	521299.9383	4809301.997	521139.4702	4808746.012	2314.46	2312.382	-62.03057	0	3.72E-11
106,Drain south	521139.4702	4808746.012	521000.0303	4808888.014	2313.96	2313.769	-5.74038	0	1.02E-12
106,Drain south	521000.0303	4808888.014	520760.0948	4808985.005	2313.59	2312.851	-22.15623	0	1.85E-11
106,Drain south	520760.0948	4808985.005	520424.3759	4809082.999	2313.09	2311.831	-37.77865	0	3.58E-11
106,Drain south	520424.3759	4809082.999	520262.6887	4808528.988	2312.52	2310.821	-50.97797	0	1.98E-11
106,Drain south	520262.6887	4809529.988	519172.7513	4810134.01	2311.33	2309.218	-63.34924	0	6.87E-11

106,Drain south	519172.7513	4810134.01	518727.6549	4810007	2310.15	2309.554	-17.87489	0	4.79E-11
106,Drain south	518727.6549	4810007	518765.9378	4810323.982	2309.61	2309.475	-4.041084	0	2.47E-10
108,Drain south	518765.9378	4810323.982	518585.1548	4810541.985	2309.2	2307.586	-48.11072	0	1.62E-10
106,Drain south	518585.1548	4810541.985	518280.5826	4810484.987	2308.8	2308.132	-20.04866	0	2.07E-10
106,Drain south	518280.5826	4810484.987	518112.343	4810655.005	2308.42	2308.822	12.07374	0	2.63E-10
106,Drain south	518112.343	4810655.005	517959.0926	4811053.988	2307.96	2308.651	20.72563	0	5.83E-10
106,Drain south	517959.0926	4811053.988	518270.845	4811383.995	2307.35	2308.794	-16.68439	0	7.91415E-10
106,Drain south	518270.845	4811383.995	518008.1562	4811822.998	2306.68	2304.285	-71.86059	0	1.64772E-09
228,Drain(NULL)	527497.8695	4799050.001	527497.8257	4798126.989	2430.8	2449.767	47.41704	0	2.27E-11
230,DrainWilson Creek, south	522153.5307	4800476.001	522306.5816	4800989	2544.42	2544.818	1194.963	0	7.22E-11
230,DrainWilson Creek, south	522306.5816	4800989	523006.6263	4801241.001	2528.75	2529.769	55.67523	0	5.66E-10
230,DrainWilson Creek, south	523006.6263	4801241.001	524446.3643	4800667.001	2503.1	2503.133	97.72777	0	4.12463E-10
230,DrainWilson Creek, south	524446.3643	4800667.001	525213.6983	4800602	2476.24	2476.282	125.4127	0	4.38E-10
230,DrainWilson Creek, south	525213.6983	4800602	526019.9858	4800317.999	2457.42	2454.757	0	0	0
230,DrainWilson Creek, south	526019.9858	4800317.999	526150.8669	4799952.001	2443.02	2439.334	0	0	0
231,DrainWilson Creek, south	526150.8669	4799952.001	526263.1247	4799928	2432.08	2432.255	525.7179	0	3.67E-11
231,DrainWilson Creek, south	526263.1247	4799928	526531.745	4799992	2413.54	2413.684	430.6133	0	8.63E-11
231,DrainWilson Creek, south	526531.745	4799992	526871.4446	4789816.13	2398.03	2388.243	638.8842	0	1.25E-11
235,Drain south	524032.2835	4801364	525352.4433	4801539.001	2421.68	2428.19	195.897	0	2.26E-12
235,Drain south	525352.4433	4801539.001	525953.1126	4801872.001	2378.69	2382.877	125.6139	0	3.53E-12
235,Drain south	525953.1126	4801872.001	526548.387	4802989.986	2337.12	2341.535	132.4509	0	2.40E-12
235,Drain south	526548.387	4802989.986	526488.951	4803276.985	2303.82	2312.613	260.7878	0	2.62E-13
238,Drain, south	522837.9378	4801531.999	523174.312	4801907.001	2470.84	2479.904	271.926	0	1.32E-12
238,Drain, south	523174.312	4801907.001	524215.8746	4802533.999	2456.63	2446.79	0	0	0
238,Drain, south	524215.8746	4802533.999	524578.8609	4803284.001	2438.86	2407.898	0	0	0
238,Drain, south	520142.375	4802510.999	520488.5842	4802796.986	2588.79	2587.297	0	0	0
239,DrainHardrigger Crk, south	520488.5842	4802796.986	520712.5613	4803359.007	2585.84	2528.978	0	0	0
239,DrainHardrigger Crk, south	520712.5613	4803359.007	521030.0318	4803376.015	2544.88	2503.029	0	0	0

239,DrainHardtrigger Crk, south	521030.0318	4803376.015	520818.2812	4803614.003	2530.4	2485.096	0	0	0
239,DrainHardtrigger Crk, south	520818.2812	4803614.003	521212.7807	4804080.009	2509.11	2477.629	0	0	0
239,DrainHardtrigger Crk, south	521212.7807	4804080.009	521085.9387	4804774.986	2479.27	2456.516	0	0	0
239,DrainHardtrigger Crk, south	521085.9387	4804774.986	521377.9081	4805442.01	2447.02	2441.208	0	0	0
239,DrainHardtrigger Crk, south	521377.9081	4805442.01	522217.0632	4805854.008	2409.31	2430.98	6.501084	0	1.23E-11
239,DrainHardtrigger Crk, south	522217.0632	4805854.008	522804.2177	4805755.009	2374.53	2316.84	0	0	0
239,DrainHardtrigger Crk, south	522804.2177	4805755.009	523182.7489	4806418.986	2343.63	2312.825	0	0	0
241,DrainHardtrigger Creek	523238.5638	4806439.011	523291.7514	4806465.011	2318.96	2308.458	0	0	0
242,DrainHardtrigger Creek south	523291.7514	4806465.011	523682.2002	4806672	2297.35	2304.736	4.431832	0	1.01E-10
242,DrainHardtrigger Creek south	523682.2002	4806672	523887.0002	4807112.253	2255.47	2297.35	25.12809	0	4.81E-10
243,Drain, south	522532.3758	4802377.999	522749.7805	4802643.001	2467.57	2464.926	0	0	0
243,Drain, south	522749.7805	4802643.001	523315.4679	4802840.999	2447.16	2445.394	0	0	0
243,Drain, south	523315.4679	4802840.999	523557.3115	4803392.992	2421.12	2421.695	17.23519	0	3.68E-11
243,Drain, south	523557.3115	4803392.992	523705.8832	4804414.011	2385.7	2390.721	150.6426	0	2.62E-12
244,Drain,south	520910.6568	4804723.993	521572.8136	4806300.998	2489.81	2434.615	0	0	0
244,Drain,south	521572.8136	4806300.998	522763.469	4807139.015	2378.39	2317.029	0	0	0
245,Drain south	522821.4694	4807250.998	522980.1879	4807597.007	2290.18	2306.934	10.05212	0	9.31E-11
245,Drain south	522980.1879	4807597.007	523319.8449	4807775.986	2249.44	2297.836	29.03744	0	2.98033E-09
247,Drain, south	521789.8438	4802655.011	522037.6549	4802911.987	2445.95	2446.258	922.5948	0	1.91E-11
247,Drain, south	522037.6549	4802911.987	522298.5302	4803788.007	2431.59	2431.668	233.2101	0	1.14E-10
247,Drain, south	522298.5302	4803788.007	523169.0298	4804859.01	2406.86	2406.898	114.4871	0	2.18214E-10
248,Drain south	520433.1572	4804742.007	520825.2818	4805840.008	2444.75	2444.752	5.278626	0	9.48412E-09
248,Drain south	520825.2818	4805640.008	520366.7504	4806187.002	2436.04	2428.288	0	0	0
248,Drain south	520366.7504	4806187.002	520801.6878	4806686.998	2428.79	2417.596	0	0	0
249,Drain south	518576.407	4803106.998	519128.281	4803911	2488.26	2488.497	1184.43	0	5.44E-11
249,Drain south	519128.281	4803911	519074.489	4804134.997	2475.99	2476.028	181.9738	0	4.34E-10
249,Drain south	519074.499	4804134.997	519403.5611	4804613.015	2467.07	2467.139	345.9098	0	1.94E-10
249,Drain south	519403.5611	4804613.015	519415.4361	4805009.011	2456.32	2456.372	257.5913	0	1.96E-10

249, Drain south	519415.4361	4805009.011	519909.3738	4805609.986	2443.39	2443.421	158.8025	0	4.01E-10
249, Drain south	519909.3736	4805609.986	519707.6235	4807194.001	2417.25	2417.278	137.9714	0	5.90E-10
249, Drain south	519707.6235	4807194.001	519850.407	4808121.995	2389.34	2389.37	151.1185	0	5.10E-10
249, Drain south	519850.407	4808121.995	520436.9367	4808464.011	2371.52	2371.584	220.9331	0	1.98E-10
250, Drain south	518015.1575	4804169.989	518178.4891	4804546.988	3634.01	2559.888	0	0	0
250, Drain south	518179.4891	4804546.988	519000.9995	4805182.991	3473.23	2509.547	0	0	0
250, Drain south	519000.9995	4805182.991	519027.8433	4805656.01	3305.52	2473.197	0	0	0
250, Drain south	519027.8433	4805656.01	518778.3431	4805927.008	3212.15	2470.432	0	0	0
250, Drain south	518778.3431	4805927.008	518808.28	4806962.983	3054.91	2461.018	0	0	0
250, Drain south	518608.28	4806962.983	518655.8135	4807311.013	2899.57	2443.9	0	0	0
250, Drain south	518655.8135	4807311.013	519231.5825	4807692.989	2784.03	2425.809	0	0	0
250, Drain south	519231.5825	4807692.989	519150.8423	4808803	2608.13	2407.768	0	0	0
250, Drain south	519150.8423	4808803	519276.6981	4809087.997	2449.29	2403.898	0	0	0
252, Drain south	515138.2173	4813943.004	516058.25	4813729.004	2415.06	2414.85	0	0	4.25348E-07
252, Drain south	516058.25	4813729.004	516456.7821	4813814.013	2365.04	2403.748	23.22508	0	8.53659E-07
252, Drain south	516456.7821	4813814.013	516737.5944	4814326.504	2329.35	2395.414	40.23848	0	3.32087E-06
252, Drain south	516737.5944	4814326.504	517018.4066	4814838.994	2285.11	2388.609	62.09962	0	2.47804E-05
252, Drain south	517018.4066	4814838.994	517302.1848	4814915.591	2252.62	2388.595	81.58527	0	0
252, Drain south	517302.1848	4814915.591	517585.9594	4814992.187	2230.87	2220.339	0	0	0
254, Drain, south	517502.5328	4808234.003	517048.1886	4807226.005	2485.64	2485.724	251.6551	0	1.73E-10
254, Drain, south	517048.1886	4807226.005	517145.4991	4808029	2480.64	2480.697	170.9553	0	2.17E-10
256, Drain south	515991.1239	4807426.99	516271.8862	4807675.006	2807.03	2503.986	0	0	0
256, Drain south	516271.8862	4807675.006	516534.6555	4807453.995	2750.3	2494.42	0	0	0
256, Drain south	516534.6555	4807453.995	516699.5005	4807547.995	2708.17	2488.378	0	0	0
256, Drain south	516699.5005	4807547.995	516760.4696	4808678.011	2603.75	2484.666	0	0	0
256, Drain south	516760.4696	4808678.011	517067.0923	4808991.985	2479.66	2439.642	0	0	0
260, Drain south	514987.6248	4807483.012	515289.1883	4807906.013	2494.5	2494.929	996.8492	0	5.38E-12
260, Drain south	515299.1883	4807906.013	516196.1568	4810028.001	2484.86	2484.908	144.8708	0	9.48E-11
260, Drain south	516196.1568	4810028.001	516164.6962	4810409.001	2436.72	2436.725	15.4634	0	4.67492E-09
260, Drain south	516164.6962	4810409.001	516516.5321	4810986.993	2425.63	2425.651	61.57859	0	1.16E-10

260, Drain south	516516.5321	4810986.993	516413.656	4811573.001	2412.31	2412.338	82.86731	0	1.88E-10
260, Drain south	516413.656	4811573.001	516276.3436	4811597.995	2404.61	2404.677	201.502	0	3.13E-10
264, Drain, south	514189.1311	4810324.845	514376.5008	4810458.988	2547.27	2518.346	0	0	0
264, Drain, south	514376.5008	4810458.988	514501.2189	4810342.006	2544.9	2511.535	0	0	0
264, Drain, south	514501.2189	4810342.006	514484.6865	4810501.995	2542.94	2508.895	0	0	0
264, Drain, south	514484.6865	4810501.995	515437.5004	4810747.999	2536.18	2484.122	0	0	0
264, Drain, south	515437.5004	4810747.999	515711.281	4811007.994	2528.14	2452.841	0	0	0
278, Drain Jump Creek	506478.7485	4823720.988	508406.2185	4823337.001	2281.27	2281.372	101.7565	0	1.91E-11
287, Drain(NULL)	505177.4892	4819274.993	505240.9072	4819374.997	2362.05	2350.569	0	0	0
416, Drain Reynolds Creek, south	527663.1321	4800382.001	528030.5885	4800616.999	2322.68	2327.314	139.0344	0	4.44E-12
416, Drain Reynolds Creek, south	528030.5885	4800616.999	528423.4882	4800560.501	2309.9	2313.048	94.42582	0	4.41E-12
416, Drain Reynolds Creek, south	528423.4882	4800560.501	529106.2991	4801030.5	2291.09	2294.616	105.7751	0	3.10E-12
416, Drain Reynolds Creek, south	529106.2991	4801030.5	529200.2365	4801101.5	2276.57	2280.689	123.5557	0	7.15E-12
416, Drain Reynolds Creek, south	529200.2365	4801101.5	529662.6201	4801605.999	2264.26	2270.438	185.3504	0	6.07E-12
416, Drain Reynolds Creek, south	529662.6201	4801605.999	529839.3431	4802105.279	2245.64	2262.23	497.7033	0	1.04E-11
420, Drain Squaw Creek, south	513876.5853	4810256.897	514741.2489	4810908.995	2520.15	2515.866	-134.5136	0	4.48793E-09
420, Drain Squaw Creek, south	514741.2489	4810908.995	516276.3436	4811597.995	2447.41	2448.459	31.48408	0	7.46451E-09
421, Drain Squaw Creek, south	516276.3436	4811597.995	516631.4691	4811830.009	2391.77	2401.626	295.6663	0	1.78436E-08
421, Drain Squaw Creek, south	516631.4691	4811830.009	517981.6569	4811869.998	2344.16	2330.048	-150	0	3.62705E-09
422, Drain Squaw Creek, south	517981.6569	4811869.998	518478.5937	4811601.012	2283.51	2286.292	1.669151	0	3.10231E-09
422, Drain Squaw Creek, south	518478.5937	4811601.012	518738.9051	4811601.5	2272.46	2284.121	6.996847	0	3.37382E-09
422, Drain Squaw Creek, south	518738.9051	4811601.5	518999.2195	4811601.988	2259.17	2275.524	9.812348	0	3.37382E-09
422, Drain Squaw Creek, south	518999.2195	4811601.988	519201.4088	4811835.678	2244.65	2285.01	12.21613	0	4.06717E-09
422, Drain Squaw Creek, south	519201.4088	4811835.678	519403.6007	4812080.338	2228.88	2250.908	13.21686	0	5.16791E-09
426, Drain Rats Nest G, south	518635.1877	4806800.992	517110.3495	4807954.629	2639.42	2480.356	0	0	0
427, Drain Rats Nest Gulch, south	517145.2613	4808058.358	517067.0923	4808991.985	2481.7	2444.247	0	0	0
428, Drain Rats Nest Gulch, south	517067.0923	4808991.985	517425.2811	4810084.998	2408.58	2408.65	210.9624	0	5.91E-11

drain, south	532933.7032	4795564.591	532519.8324	4796185.731	2341.35	2341.365	44.603	0	1.36588E-09
drain, south	532519.6324	4796185.731	532105.5311	4796785.47	2338.11	2337.928	0	0	0
drain, south	532105.5311	4796785.47	531774.244	4796785.47	2335.8	2335.851	153.9017	0	4.37E-10
drain, south	531774.244	4796785.47	531318.7204	4797220.981	2333.84	2333.759	358.3136	0	1.21E-10
drain, south	531318.7204	4797220.981	530614.7848	4798173.399	2329.59	2329.669	236.8958	0	3.89E-11
drain, south	530614.7848	4798173.399	529372.481	4798753.141	2323.83	2324.037	320.892	0	3.88E-11
drain, south	529372.481	4798753.141	528875.5855	4799498.511	2318.9	2319.04	421.3719	0	5.77E-12
drain, south	528875.5855	4799498.511	528875.5855	4799705.562	2316.46	2316.577	352.3113	0	2.00E-10
13, drain, south	532188.3453	4798463.27	531525.771	4798090.579	2319.97	2311.329	0	0	0
13, drain, south	531525.771	4798090.579	530987.4638	4797717.891	2278.87	2321.272	25.38145	0	3.42E-10
14, drain, south	532850.889	4798931.11	532353.9736	4796558.419	2288.5	2302.643	124.2781	0	1.05E-12
15, drain, south	515221.9886	4814977.983	515636.0888	4814812.355	2555.12	2398.856	0	0	0
15, drain, south	515636.0888	4814812.355	516464.2894	4815102.22	2457.53	2390.408	0	0	0
15, drain, south	516464.2894	4815102.22	517085.4281	4815516.321	2337.8	2380.486	25.81752	0	1.21313E-06
15, drain, south	517085.4291	4815516.321	517499.5304	4815640.557	2250.88	2225.899	0	0	0
853, canal south	513765.9498	4816976.404	514269.5709	4817545.405	2457.83	2363.234	-28.37894	0	9.32259E-08
853, canal south	514269.5709	4817545.405	514932.1298	4817214.118	2447.82	2352.79	-28.44908	0	1.10271E-07
853, canal south	514932.1298	4817214.118	515760.3202	4818042.32	2434.82	2333.301	-30.39569	0	1.2629E-07
853, canal south	515760.3202	4818042.32	516298.8488	4818704.884	2420.85	2286.708	-37.24312	0	3.08539E-08
853, canal south	516298.8488	4818704.884	516754.1511	4818497.813	2411.64	2277.03	-40.38313	0	4.3363E-07
853, canal south	516754.1511	4818497.813	516829.9289	4817876.662	2403.93	2280.986	-36.8831	0	9.04579E-08
853, canal south	516829.9289	4817876.662	517251.0898	4817752.425	2385.31	2275.583	-35.91821	0	1.28975E-07
1, canal, south	508383.2215	4825910.153	510004.3703	4825164.765	2255.29	2251.718	-107.1605	0	5.81E-12
1, canal, south	510004.3703	4825164.765	511122.4286	4824792.086	2253.73	2262.718	-30.37157	0	1.88E-11
1, canal, south	511122.4286	4824792.086	512530.3607	4824046.728	2251.71	2251.859	4.482015	0	1.31E-12
1, canal, south	512530.3607	4824046.728	513689.8291	4822970.083	2249.4	2250.62	36.59476	0	1.52E-10
1, canal, south	513689.8291	4822970.083	514890.7197	4822183.272	2247.21	2249.168	58.75204	0	2.28E-10
1, canal, south	514890.7197	4822183.272	515825.9607	4820485.475	2244.72	2246.514	53.81113	0	6.23E-10
1, canal, south	515825.9607	4820485.475	516981.1987	4819387.408	2242.16	2243.17	30.31025	0	2.25228E-

1, canal, south	516961.1987	4818367.408	517416.7101	4818787.878	2240.52	2242.759	67.17439	0	3.70034E-09
1, canal, south	517416.7101	4818787.878	517282.4797	4818125.135	2238.49	2243.383	116.8033	0	1.38888E-08
72,Drain south	512804.8209	4820517.754	512758.7504	4821899.717	2311.37	2272.631	0	0	0
72,Drain south	512758.7504	4821899.717	512067.781	4821991.827	2299.15	2268.463	0	0	0
72,Drain south	512067.781	4821991.827	511376.7994	4822452.502	2290.17	2270.219	0	0	0
72,Drain south	511376.7994	4822452.502	511422.8608	4822859.202	2282.29	2267.376	0	0	0
72,Drain south	511422.8608	4822859.202	510685.8208	4823650.183	2273.36	2263.138	0	0	0
72,Drain south	510685.8208	4823650.183	510501.5601	4824341.165	2263.22	2257.219	0	0	0
72,Drain south	510501.5601	4824341.165	508843.2104	4824663.613	2249.08	2249.088	31.0218	0	3.18583E-09
72,Drain south	508843.2104	4824663.613	508336.4986	4826229.827	2229.48	2229.49	41.25183	0	1.45303E-09
canal, south	508632.0906	4823834.435	507000.609	4823419.846	2299.07	2288.025	-100	0	0
canal, south	507000.609	4823419.846	506908.4802	4823097.398	2297.57	2290.496	-70.7424	0	1.18701E-10
canal, south	506908.4802	4823097.398	508935.3392	4821531.183	2292.89	2292.16	-5.304497	0	7.02E-10
canal, south	508935.3392	4821531.183	508349.8312	4821761.52	2287.58	2291.464	38.83542	0	2.27898E-09
canal, south	508349.8312	4821761.52	509810.5785	4821623.324	2285.98	2287.838	18.58452	0	1.7498E-09
canal, south	509810.5785	4821623.324	512344.1706	4820748.091	2280.85	2284.282	36.11897	0	4.58838E-09
canal, south	512344.1706	4820748.091	512804.8209	4820379.557	2275.15	2280.319	51.68751	0	9.05684E-09
canal, south	512804.8209	4820379.557	513541.8609	4820425.613	2272.91	2277.084	41.74237	0	9.2485E-09
canal, south	513541.8609	4820425.613	513884.321	4819984.968	2270.72	2274.56	38.39684	0	1.02805E-08
canal, south	513884.321	4819984.968	514739.5803	4819458.238	2268.08	2274.832	67.51744	0	1.93861E-08
canal, south	514739.5803	4819458.238	515430.5297	4819386.128	2285.2	2271.746	65.46415	0	2.66441E-08
canal, south	515430.5297	4819386.128	516858.5512	4819043.68	2261.56	2284.131	25.71178	0	2.81269E-08
canal, south	516858.5512	4819043.68	517088.8794	4818308.612	2257.8	2257.648	-1.506657	0	3.2628E-08
79,drain south	508349.8312	4821991.827	508889.2809	4822222.165	2296.19	2286.493	0	0	0
79,drain south	508889.2809	4822222.165	508658.9496	4823373.791	2284.07	2279.16	0	0	0
79,drain south	508658.9496	4823373.791	508336.4886	4823419.846	2273.31	2270.783	0	0	0

79,drain south	508336.4986	4823419.846	507921.9087	4824285.109	2264.02	2264.026	18.9984	0	1.18606E-09
79,drain south	507921.9097	4824295.109	508152.241	4824571.502	2254.49	2254.492	6.555282	0	5.96944E-09
79,drain south	508152.241	4824571.502	508336.4986	4824801.809	2249.79	2247.991	0	0	0
79,drain south	508336.4986	4824801.809	507737.6489	4825262.453	2242.25	2242.252	4.92623	0	7.54898E-09
78,drain south	507737.6489	4825262.453	507737.6489	4825769.183	2233.2	2233.209	27.3762	0	2.07224E-09
78,drain south	507737.6489	4825769.183	508060.1091	4826388.024	2224.88	2221.42	0	0	0
73,drain south	508303.8698	4819780.717	509303.8698	4820748.091	2358.82	2321.42	0	0	0
73,drain south	508303.8698	4820748.091	508764.5202	4820702.005	2340.16	2309.601	0	0	0
73,drain south	509764.5202	4820702.005	509836.139	4821180.084	2327.95	2302.639	0	0	0
73,drain south	509836.139	4821180.084	509382.3894	4821603.604	2313.71	2283.946	0	0	0
265,drain south	514075.1389	4812777.682	513962.491	4813453.526	2695.92	2458.575	0	0	0
265,drain south	513962.491	4813453.526	513511.9112	4814636.333	2635.9	2442.743	0	0	0
265,drain south	513511.9112	4814636.333	513737.2011	4815143.215	2579.89	2424.621	0	0	0
265,drain south	513737.2011	4815143.215	513568.2291	4816494.973	2520.91	2401.82	0	0	0
262,drain south	514751.0086	4813847.815	514638.3606	4814861.61	2658.58	2420.399	0	0	0
262,drain south	514638.3606	4814861.61	513962.491	4815388.523	2584.58	2409.855	0	0	0
107,drain south	513288.6091	4818353.521	512892.3503	4818775.943	2378.92	2333.27	0	0	0
107,drain south	512892.3503	4818775.943	512498.0865	4818747.78	2368.69	2332.151	0	0	0
107,drain south	512498.0865	4818747.78	512329.1287	4819085.742	2360.56	2330.913	0	0	0
107,drain south	512329.1287	4819085.742	512216.4807	4820127.701	2345.57	2312.837	0	0	0
107,drain south	512216.4807	4820127.701	512610.7395	4820437.469	2329.27	2291.409	0	0	0
107,drain a	515088.9403	4818683.32	515032.6194	4818804.107	2378.62	2289.197	0	0	0
107,drain a	515032.6194	4818804.107	515173.4309	4819057.579	2360.03	2291.15	0	0	0
107,drain a	515173.4309	4819057.579	515145.2704	4818339.183	2335.91	2279.758	0	0	0
79,drain south a	513852.7105	4816720.159	513399.2802	4817959.262	2434.89	2364.764	0	0	0
79,drain south a	513399.2802	4817959.262	513117.6494	4817831.089	2405.39	2349.815	0	0	0
112, Drain south	501670.4586	4822505.111	502023.8285	4823083.347	2485.87	2325.838	0	0	0
112, Drain south	502023.8285	4823083.347	502248.71	4823083.347	2467.18	2321.961	0	0	0
112, Drain south	502248.71	4823083.347	502698.4515	4822729.992	2450.69	2321.834	0	0	0
112, Drain south	502698.4515	4822729.992	503822.8099	4822826.339	2415.48	2319.173	0	0	0

112, Drain south	503822.8089	4822828.339	504208.2886	4823051.221	2382.88	2313.085	0	0	0
112, Drain south	504208.2886	4823051.221	504625.8214	4822729.992	2362.73	2318.933	0	0	0
112, Drain south	504625.8214	4822729.992	505718.16	4822828.339	2329.12	2307.888	0	0	0
112, Drain south	505718.16	4822828.339	506232.1503	4823243.876	2282.71	2282.53	0	0	2.08023E-09
276, Drain south	507225.4905	4815742.269	507001.4289	4817918.876	2394.43	2387.249	84.56557	0	0
276, Drain south	507001.4289	4817918.876	506521.2888	4819103.207	2353.93	2355.888	52.73859	0	9.16E-10
277, drain south	506425.2685	4818295.262	505945.1415	4820863.702	2326.32	2326.335	44.18871	0	1.84E-11
277, drain south	505945.1415	4820863.702	506328.2504	4823072.282	2286.32	2286.34	61.28008	0	3.25E-10
far field south	510891.6797	4785353.371	508633.4135	4788088.725	3843.02	3643.02	-9393.659	0	0
far field south	508633.4135	4788088.725	508375.1503	4790824.08	3629.07	3629.07	-3075.935	0	0
far field south	508375.1503	4790824.08	506214.2189	4794380.041	3393.35	3393.35	-1585.258	0	0
far field south	506214.2189	4794380.041	504053.2908	4797935.999	3235.87	3235.87	-285.9055	0	0
far field south	504053.2908	4797935.999	505038.0201	4800999.599	3096.23	3096.23	-305.4212	0	0
far field south	505038.0201	4800999.599	504490.9498	4802914.334	2997.85	2997.65	-220.0227	0	0
far field south	504490.9498	4802914.334	506186.8692	4804282.033	2918.74	2918.74	-37.91738	0	0
far field south	506186.8692	4804282.033	504408.8885	4806962.657	2818.84	2816.64	76.28692	0	0
far field south	504408.8885	4806962.657	502630.9109	4808643.313	2694.9	2694.9	289.1196	0	0
far field south	502630.9109	4808643.313	501044.4055	4812286.597	2575.53	2575.53	418.2875	0	0
far field south	501044.4055	4812286.597	499457.9002	4814949.911	2458.53	2458.53	578.5586	0	0
far field south	499457.9002	4814949.911	498309.0511	4817329.667	2350.02	2350.02	716.2205	0	0
far field south	498309.0511	4817329.667	497160.1989	4819709.424	2250.01	2250.01	1328.346	0	0
2, Snake north	533145.082	4797238.251	532704.8289	4798130.361	2280.448	2300.507	40.05905	0	1.81E-11
2, Snake north	532704.8289	4798130.361	532449.9551	4798640.13	2280.413	2306.978	46.56485	0	3.51E-11
3, Snake north	532454.6186	4798628.459	532319.4083	4799054.49	2259.812	2308.547	48.73542	0	4.88E-11
3, Snake north	532319.4083	4799054.49	532345.5916	4799324.891	2258.754	2309.762	51.00788	0	4.53E-11
3, Snake north	532345.5916	4799324.891	531730.8576	4800349.229	2256.596	2308.223	51.82887	0	1.05E-10
3, Snake north	531730.8576	4800349.229	531460.2695	4800510.59	2254.374	2303.025	48.65124	0	1.04E-10
4, Snake north	531442.8045	4800528.04	531294.5183	4800885.971	2252.279	2305.537	53.25824	0	1.14E-10
4, Snake north	531294.5183	4800885.971	530885.813	4801679.129	2247.922	2309.086	61.16404	0	8.73E-10
4, Snake north	530885.813	4801679.129	530533.769	4801870.78	2243.647	2307.564	63.91667	0	1.73177E-09

4, Snake north	530533.789	4801970.78	529818.835	4802254.259	2239.804	2299.806	60.00223	0	5.19E-11
7, Snake north	525405.509	4806116.829	524892.1343	4806578.396	2230.792	2299.787	137.9913	0	1.43259E-09
7, Snake north	524882.1343	4806578.396	524412.3791	4808813.915	2230.528	2297.722	134.3876	0	8.83E-10
7, Snake north	524412.3791	48068813.915	524220.5075	4807061.961	2230.346	2296.16	131.8286	0	5.85E-12
7, Snake north	524220.5075	4807061.961	523753.8587	4807637.637	2230.119	2296.072	131.906	0	4.86E-11
8, Snake north	523745.1414	4807646.354	523596.8582	4807886.232	2228.866	2295.901	132.0706	0	5.74E-10
8, Snake north	523596.8562	4807886.232	523448.5588	4808126.11	2229.677	2295.411	131.469	0	1.05765E-09
8, Snake north	523448.5588	4808126.11	523190.0915	4808407.867	2229.454	2294.029	129.149	0	9.57763E-10
8, Snake north	523190.0915	4808407.867	522931.6211	4808889.624	2229.198	2292.034	125.6724	0	1.30736E-09
9, Snake north	522894.3593	4808708.247	522788.7798	4808807.612	2228.644	2288.876	240.9286	0	2.27531E-09
9, Snake north	522788.7786	4808807.612	522676.9912	4808906.977	2227.779	2287.994	240.8579	0	2.22174E-09
10, Snake north	522659.3496	4808919.413	522299.661	4809346.407	2226.913	2287.537	80.83245	0	1.26034E-09
10, Snake north	522299.661	4809346.407	522003.0906	4809765.111	2226.093	2283.075	75.97566	0	2.20015E-09
10, Snake north	522003.0906	4809765.111	521689.0887	4810175.036	2225.305	2277.125	69.09236	0	1.91006E-09
10, Snake north	521689.0887	4810175.036	521475.3903	4810284.094	2224.726	2272.981	64.34003	0	1.52856E-09
10, Snake north	521475.3903	4810284.094	521052.8827	4810783.996	2224.042	2268.343	59.08878	0	1.48932E-09
10, Snake north	521052.8827	4810783.996	520822.4295	4811290.97	2223.114	2262.626	52.69496	0	2.13967E-09
10, Snake north	520822.4295	4811290.97	520604.9852	4811484.792	2222.465	2258.95	48.64701	0	3.05463E-09
10, Snake north	520604.9852	4811484.792	520387.5408	4811678.584	2222.019	2256.401	45.84298	0	3.87094E-09
10, Snake north	520387.5408	4811678.584	519445.8887	4812236.673	2220.958	2250.106	38.86449	0	6.0165E-09
11, Snake north	518839.0502	4813402.99	518710.7812	4813592.606	2219.987	2223.704	371.7312	0	5.74358E-09
11, Snake north	518710.7812	4813592.606	518487.7011	4813759.911	2219.958	2222.392	243.4286	0	6.87392E-09
11, Snake north	518487.7011	4813759.911	518309.2407	4813804.534	2219.931	2222.143	221.1673	0	1.01517E-08
11, Snake north	518309.2407	4813804.534	518129.2197	4813826.601	2219.91	2222.604	269.3476	0	1.64983E-08
14,Snake north	515152.5307	4824674.006	514798.4812	4824934.184	2216.503	2279.233	125.461	0	6.02E-10
14,Snake north	514798.4812	4824934.184	514531.0313	4825125.202	2215.091	2274.176	118.1683	0	1.06806E-09

14,Snake north	514531.0313	4825125.202	514050.6696	4825468.285	2213.403	2267.525	108.2447	0	1.80E-10
14,Snake north	514050.6696	4825468.285	513815.0592	4825589.26	2211.832	2261.033	98.40349	0	1.81E-10
14,Snake north	513815.0592	4825589.26	513687.7107	4825754.827	2210.961	2257.976	94.0296	0	5.27E-12
14,Snake north	513687.7107	4825754.827	513522.1494	4826009.518	2210.019	2256.09	92.14159	0	1.61E-10
14,Snake north	513522.1494	4826009.518	513229.2397	4826283.35	2208.724	2252.738	88.02896	0	1.61E-10
14,Snake north	513229.2397	4826283.35	513012.7311	4826442.517	2207.494	2249.983	84.97868	0	2.89E-10
512,CanalMora Canal	520316.4371	4824018.991	519928.4389	4824226.011	2598.289	2478.942	-6	0	0
512,CanalMora Canal	519928.4389	4824226.011	519664.7503	4824575.007	2598.578	2469.826	-6	0	0
512,CanalMora Canal	519664.7503	4824575.007	519401.0617	4824924.003	2597.859	2463.158	-6	0	0
512,CanalMora Canal	519401.0617	4824924.003	519051.6238	4825009.5	2597.204	2452.703	-6	0	0
512,CanalMora Canal	519051.6238	4825009.5	518702.1889	4825094.996	2596.612	2438.047	-6	0	0
512,CanalMora Canal	518702.1889	4825094.996	518847.7492	4825293.512	2596.114	2434.53	-6	0	0
512,CanalMora Canal	518847.7492	4825293.512	518993.3125	4825491.998	2595.71	2442.867	-6	0	0
512,CanalMora Canal	518993.3125	4825491.998	518842.6894	4825840.994	2595.195	2444.694	-6	0	0
512,CanalMora Canal	518842.6894	4825840.994	518692.0634	4826189.99	2594.57	2438.861	-6	0	0
512,CanalMora Canal	518692.0634	4826189.99	518780.4676	4826403.015	2594.088	2438.805	-6	0	0
512,CanalMora Canal	518780.4676	4826403.015	518624.8123	4826742.989	2593.571	2438.359	-6	0	0
512,CanalMora Canal	518624.8123	4826742.989	518789.4074	4826924.009	2593.063	2438.458	-6	0	0
512,CanalMora Canal	518789.4074	4826924.009	518435.9094	4827152	2592.516	2433.508	-6	0	0
512,CanalMora Canal	518435.9094	4827152	518080.7814	4826988.99	2591.86	2418.742	-6	0	0
561,CanalMora Canal	520469.34	4821454.221	520326.0627	4821768.988	2611.236	2499.318	-0.8	0	0
561,CanalMora Canal	520326.0627	4821768.988	520391.7196	4822208.51	2609.489	2492.398	-0.6	0	0
561,CanalMora Canal	520391.7196	4822208.51	520457.3738	4822648.001	2607.525	2488.334	-0.6	0	0
561,CanalMora Canal	520457.3738	4822648.001	520286.4052	4823075.513	2605.526	2485.482	-0.8	0	0
561,CanalMora Canal	520286.4052	4823075.513	520115.4367	4823502.995	2603.491	2480.196	-0.6	0	0
561,CanalMora Canal	520115.4367	4823502.995	520367.0004	4823716.995	2601.743	2481.319	-0.6	0	0
561,CanalMora Canal	520367.0004	4823716.995	520316.4371	4824018.991	2600.337	2484.806	-0.6	0	0
678,CanalMora Canal	529620.3748	4813703.492	529607.6951	4813508.998	2655.221	2480.955	-15	0	0
678,CanalMora Canal	529607.6951	4813508.998	529404.424	4813528.007	2655.142	2476.585	-15	0	0
678,CanalMora Canal	529404.424	4813528.007	529497.0527	4813909.994	2655.023	2477.136	-15	0	0
678,CanalMora Canal	529497.0527	4813909.994	528888.4281	4814304.009	2654.801	2472.493	-15	0	0

678,CanalMora Canal	528888.4281	4814304.009	528592.2539	4814748.011	2654.551	2459.585	-15	0
678,CanalMora Canal	528592.2539	4814748.011	528881.1738	4814909.007	2654.38	2461.745	-15	0
678,CanalMora Canal	528881.1738	4814909.007	528882.6369	4815213.99	2654.253	2469.485	-15	0
678,CanalMora Canal	528882.6369	4815213.99	529298.567	4815359.989	2654.105	2480.836	-15	0
678,CanalMora Canal	529298.567	4815359.989	529368.0614	4815782.012	2653.931	2495.678	-15	0
678,CanalMora Canal	529368.0614	4815792.012	529648.7212	4816395.212	2653.712	2512.787	-15	0
688,CanalMora Canal	531443.8103	4812760.99	530196.8128	4813578.006	2658.293	2512.92	-30	0
688,CanalMora Canal	530196.8126	4813578.006	529633.7555	4813711.935	2655.923	2490.424	-30	0
701,CanalMora Canal	542737.3209	4811856.008	542458.6306	4812061.992	2698.894	2570.134	-3	0
701,CanalMora Canal	542458.6306	4812061.992	542120.1923	4812045.99	2698.522	2571.691	-3	0
701,CanalMora Canal	542120.1923	4812045.99	541783.7541	4812029.988	2694.189	2572.527	-3	0
701,CanalMora Canal	541783.7541	4812029.988	541597.186	4812122.982	2692.301	2573.263	-3	0
701,CanalMora Canal	541597.186	4812122.982	541437.0136	4812226.005	2690.92	2573.966	-3	0
703,CanalMora Canal	542786.2413	4811774.992	542761.7963	4811815.5	2715.325	2568.332	-12	0
703,CanalMora Canal	542761.7963	4811815.5	542737.3209	4811858.008	2705.175	2568.736	-12	0
705,CanalMora Canal	545178.4946	4812974.99	544771.9523	4812603.987	2740.925	2563.233	-3	0
705,CanalMora Canal	544771.9523	4812603.987	544734.1878	4812186.99	2737.711	2561.563	-3	0
705,CanalMora Canal	544734.1878	4812186.99	543561.561	4812050.013	2732.407	2563.568	-3	0
705,CanalMora Canal	543561.561	4812050.013	543328.2554	4812306.99	2727.336	2568.282	-3	0
705,CanalMora Canal	543328.2554	4812306.99	543080.8	4811784.99	2724.288	2568.361	-3	0
705,CanalMora Canal	543080.8	4811784.99	542786.2413	4811774.992	2721.377	2567.49	-3	0
713,CanalMora Canal	532684.6258	4811015.004	531959.4405	4811295.998	2680.619	2528.289	-600	0
713,CanalMora Canal	531959.4405	4811295.999	531835.9965	4811600.007	2680.46	2528.48	-600	0
713,CanalMora Canal	531835.9965	4811600.007	532039.9991	4811949.003	2680.353	2538.57	-600	0
713,CanalMora Canal	532039.9991	4811949.003	531443.8103	4812780.99	2680.147	2541.525	-600	0
716,CanalMora Canal	533556.8058	4810406.988	533256.4864	4810525.007	2662.921	2508.979	-200	0
716,CanalMora Canal	533256.4864	4810525.007	532877.9858	4811001.014	2661.884	2517.512	-200	0
716,CanalMora Canal	532877.9858	4811001.014	532664.6258	4811015.004	2680.988	2525.28	-200	0
717,CanalMora Canal	541118.9243	4811909.013	540816.6237	4811560.992	2688.205	2573.105	-3	0
717,CanalMora Canal	540816.6237	4811560.992	540519.2608	4811579.006	2684.929	2572.499	-3	0
717,CanalMora Canal	540519.2608	4811579.006	540532.1234	4811175.989	2683.75	2572.617	-3	0

717, CanalMora Canal	540532.1234	4811175.999	540062.4875	4811251.986	2682.272	2572.575	-3	0	0
717, CanalMora Canal	540062.4875	4811251.986	539250.1346	4810688.99	2879.811	2570.971	-3	0	0
717, CanalMora Canal	539250.1346	4810688.99	537989.055	4810897.991	2875.999	2565.114	-3	0	0
717, CanalMora Canal	537989.055	4810897.991	537291.6117	4810216.001	2872.21	2556.239	-3	0	0
720, CanalMora Canal	534222.4281	4809894.988	533889.617	4810145.989	2863.21	2501.947	-60	0	0
720, CanalMora Canal	533888.617	4810145.989	533556.8058	4810406.989	2863.07	2506.033	-60	0	0
721, CanalMora Canal	537291.6117	4810216.001	536881.5691	4809764.989	2670.353	2548.589	-60	0	0
721, CanalMora Canal	536881.5691	4809764.989	536301.3165	4809666.995	2669.863	2539.596	-60	0	0
13, Snake north	517625.7288	4815886.526	517655.78	4816296.395	2218.939	2235.857	33.83637	0	2.51955E-08
13, Snake north	517655.78	4816296.395	517623.9406	4816826.813	2218.816	2242.851	48.06843	0	1.84529E-08
13, Snake north	517623.9406	4816826.813	517530.7266	4817385.172	2218.71	2247.697	57.97525	0	5.90949E-08
13, Snake north	517530.7266	4817385.172	517611.2091	4817963.926	2218.608	2248.951	60.68689	0	7.17258E-08
13, Snake north	517611.2091	4817963.926	517904.1188	4818390.585	2218.501	2246.222	55.44307	0	4.00942E-08
13, Snake north	517904.1188	4818390.585	517923.2298	4819129.237	2218.379	2245.556	54.35363	0	2.09086E-08
13, Snake north	517923.2298	4819129.237	517530.9187	4819750.176	2218.236	2245.363	54.31414	0	1.11278E-08
13, Snake north	517530.9187	4819750.176	517191.4263	4820201.95	2218.11	2244.171	52.12264	0	6.35409E-09
13, Snake north	517191.4263	4820201.95	517021.3815	4820427.594	2218.027	2241.36	46.68472	0	4.05136E-09
12, Snake north	518116.7991	4813851.442	517918.0604	4814149.567	2219.816	2226.204	12.77657	0	8.59848E-08
12, Snake north	517918.0604	4814149.567	517893.2182	4814584.303	2219.629	2226.522	13.78663	0	1.26825E-07
12, Snake north	517893.2192	4814584.303	517871.3254	4814859.233	2219.461	2227.447	15.97139	0	1.91445E-07
12, Snake north	517871.3254	4814859.233	517789.4988	4815195.184	2219.314	2228.655	18.68153	0	2.21802E-07
12, Snake north	517789.4988	4815195.184	517726.0638	4815330.027	2219.198	2229.658	20.92058	0	1.97882E-07
12, Snake north	517726.0638	4815330.027	517662.6258	4815464.901	2219.128	2230.179	22.10254	0	1.66705E-07
12, Snake north	517662.6258	4815464.901	517629.2289	4815658.419	2219.046	2231.328	24.56316	0	1.14106E-07
1, Mora Canal	541429.0278	4812222.347	541306.7421	4812088.801	2689.569	2574.055	-3	0	0
1, Mora Canal	541306.7421	4812088.801	541130.9334	4811912.792	2687.929	2573.655	-3	0	0
1, Mora Canal 2	536304.4864	4809672.939	535587.1091	4809574.783	2668.513	2527.899	-100	0	0

1, Mora Canal 2	535587.1091	4809574.793	534748.9091	4809703.175	2686.175	2513.801	-100	0
1, Mora Canal 2	534748.9091	4809703.175	534227.8535	4809876.85	2684.097	2503.92	-100	0
639b, Mora canal	528638.4006	4818728.639	528440.555	4818878.722	2643.787	2576.725	-6	0
639b, Mora canal	528440.555	4818878.722	528072.1432	4819001.526	2643.371	2546.631	-6	0
639b, Mora canal	528072.1432	4819001.526	528078.9707	4818841.201	2643.011	2535.461	-6	0
639b, Mora canal	528078.9707	4818841.201	528085.7982	4818680.876	2642.801	2533.857	-6	0
639b, Mora canal	528085.7982	4818680.876	527891.3683	4818766.159	2642.557	2523.364	-6	0
639b, Mora canal	527891.3683	4818766.159	527696.9344	4818851.442	2642.279	2507.698	-6	0
639b, Mora canal	527696.9344	4818851.442	527628.8897	4819185.747	2641.917	2516.417	-6	0
639b, Mora canal	527628.8897	4819185.747	527348.9747	4819015.181	2641.479	2514.149	-6	0
639b, Mora canal	527348.9747	4819015.181	527048.7772	4819090.223	2641.062	2498.32	-6	0
639b, Mora canal	527048.7772	4819090.223	526766.8982	4819509.536	2640.529	2505.983	-6	0
639b, Mora canal	526766.8982	4819509.536	526054.6415	4819509.536	2639.732	2506.427	-6	0
639b, Mora canal	526054.6415	4819509.536	526019.0104	4819212.763	2639.07	2487.726	-6	0
639b, Mora canal	526019.0104	4819212.763	525727.4692	4819292.732	2638.676	2476.917	-6	0
639b, Mora canal	525727.4692	4819292.732	525435.928	4819372.681	2638.28	2481.776	-6	0
639b, Mora canal	525435.928	4819372.681	525194.2521	4819307.911	2637.918	2483.327	-6	0
639b, Mora canal	525194.2521	4819307.911	524952.5457	4819243.11	2637.591	2477.403	-6	0
639b, Mora canal	524952.5457	4819243.11	524725.8354	4819023.868	2637.221	2469.346	-6	0
639b, Mora canal	524725.8354	4819023.868	524499.0947	4818804.595	2636.808	2459.247	-6	0
639b, Mora canal	524499.0947	4818804.595	524451.7593	4818547.953	2636.43	2449.663	-6	0
639b, Mora canal	524451.7593	4818547.953	524404.4238	4818291.342	2636.089	2440.079	-6	0
639b, Mora canal	524404.4238	4818291.342	524055.5802	4818413.414	2635.676	2437.111	-6	0
639b, Mora canal	524055.5802	4818413.414	523706.7671	4818535.517	2635.192	2439.531	-6	0
639c, Mora Canal	523706.7671	4818535.517	523502.859	4818950.381	2633.931	2446.386	-3	0
639c, Mora Canal	523502.859	4818950.381	523305.0102	4819376.765	2631.893	2458.859	-3	0
639c, Mora Canal	523305.0102	4819376.765	522960.4796	4819131.157	2629.956	2460.357	-3	0
639c, Mora Canal	522960.4796	4819131.157	522615.9489	4818885.55	2628.122	2452.076	-3	0
639c, Mora Canal	522615.9489	4818885.55	522343.0492	4818851.442	2628.608	2447.844	-3	0
639c, Mora Canal	522343.0492	4818851.442	522114.5011	4819185.747	2625.134	2452.691	-3	0
639c, Mora Canal	522114.5011	4819185.747	521885.9498	4819520.052	2623.378	2461.872	-3	0

6, Snake north	525773.7257	4804185.472	526685.2092	4804577.963	2233.946	2281.027	57.08016	0	4.57E-10
6, Snake north	526685.2092	4804577.963	526416.1038	4804813.792	2233.374	2294.285	60.89061	0	7.15E-10
6, Snake north	526416.1038	4804913.792	526284.6792	4805249.072	2232.825	2296.793	63.96841	0	2.58E-10
6, Snake north	526284.6792	4805249.072	525736.979	4805798.565	2232.052	2300.231	68.17802	0	3.25527E-09
6, Snake north	525736.979	4805798.565	525540.7182	4805994.826	2231.342	2301.335	68.98277	0	1.30853E-09
6, Snake north	525540.7182	4805994.826	525418.6154	4806090.777	2231.046	2301.16	70.11347	0	3.27E-10
639d, Mora Canal	529641.0098	4816420.297	528511.3783	4816810.806	2653.237	2529.778	-30	0	0
639d, Mora Canal	529511.3783	4816810.806	528966.5483	4817461.097	2652.185	2544.045	-30	0	0
639d, Mora Canal	528966.5483	4817461.097	528984.1353	4817786.227	2651.206	2568.047	-30	0	0
639d, Mora Canal	528984.1353	4817786.227	529590.4739	4817496.241	2650.373	2587.672	-30	0	0
639d, Mora Canal	529590.4739	4817496.241	529616.8391	4817733.497	2649.613	2572.991	-30	0	0
639d, Mora Canal	529616.8391	4817733.497	528353.2176	4817821.401	2649.182	2597.982	-30	0	0
639e, Mora Canal	528351.8155	4817825.333	529370.8046	4818036.682	2648.607	2645.072	-1080.555	0	2.57E-13
639e, Mora Canal	529370.8046	4818036.682	529379.5828	4818251.892	2647.917	2645.639	-883.3694	0	3.88E-13
639e, Mora Canal	529379.5828	4818251.892	529265.3438	4818348.644	2647.327	2644.889	-731.2514	0	1.88E-12
639e, Mora Canal	529265.3438	4818348.644	529151.1047	4818445.327	2646.843	2644.385	-743.4684	0	6.85E-12
639e, Mora Canal	529151.1047	4818445.327	528019.2787	4818304.723	2646.291	2644.844	-433.8394	0	3.84E-12
639e, Mora Canal	528019.2787	4818304.723	528883.0636	4818353.033	2645.746	2644.105	-492.2794	0	3.48E-13
639e, Mora Canal	528883.0636	4818353.033	528746.8485	4818401.375	2645.279	2643.085	-655.1588	0	6.42E-13
639e, Mora Canal	528746.8485	4818401.375	528698.5377	4818563.955	2644.772	2642.167	-781.5115	0	4.99E-12
639e, Mora Canal	528698.5377	4818563.955	528650.1964	4818726.505	2644.224	2639.509	-1414.43	0	6.75E-13
5, Snake north	528650.1964	4802276.071	528378.0588	4802581.35	2237.247	2294.11	113.7251	0	1.91E-10
5, Snake north	528378.0588	4802581.35	528988.6133	4802925.886	2236.759	2296.146	118.7739	0	5.50E-11
5, Snake north	528988.6133	4802925.886	528636.6328	4803117.788	2236.354	2296.976	121.2445	0	5.48E-11
5, Snake north	528636.6328	4803117.788	527980.5508	4803387.902	2235.862	2295.16	118.5955	0	1.74E-10
5, Snake north	527980.5508	4803387.902	527457.2092	4803527.47	2235.313	2291.336	112.047	0	5.48E-11
5, Snake north	527457.2092	4803527.47	527112.6633	4803693.19	2234.907	2287.539	105.265	0	6.77E-11
5, Snake north	527112.6633	4803693.19	526926.3695	4803875.826	2234.624	2285.581	101.9137	0	1.27E-10
5, Snake north	526926.3695	4803875.826	526782.443	4804172.366	2234.365	2286.733	104.737	0	2.19E-10
2, Snake south	532785.1716	4797103.021	532451.0829	4797503.54	2260.459	2289.86	19.70063	0	5.32E-12

2, Snake south	532451.0829	4797503.54	532380.8011	4797988.669	2280.438	2304.87	22.21803	0	5.76E-12
2, Snake south	532380.8011	4797988.669	532152.1046	4798287.65	2280.42	2308.854	23.21677	0	4.89E-11
2, Snake south	532152.1046	4798287.65	532321.3295	4798552.78	2280.408	2307.327	23.48046	0	7.48E-11
3, Snake south	532310.0519	4798596.619	532129.5189	4798953.291	2259.779	2308.076	24.14823	0	7.8136E-11
3, Snake south	532129.5189	4798953.291	531994.1267	4799229.001	2258.692	2308.482	24.89494	0	5.12E-11
3, Snake south	531994.1267	4799229.001	531901.9857	4798473.34	2257.829	2308.279	25.22542	0	2.81E-11
3, Snake south	531901.9857	4799473.34	531791.069	4799736.7	2256.998	2307.634	25.31819	0	2.59E-11
3, Snake south	531791.069	4799736.7	531650.038	4799911.57	2256.223	2308.676	25.22684	0	4.50E-11
3, Snake south	531650.038	4799911.57	531463.8662	4800154.139	2255.417	2305.514	25.04851	0	8.05E-11
3, Snake south	531463.8662	4800154.139	531305.9188	4800458.759	2254.431	2304.262	24.91562	0	1.47E-10
4, Snake south	531283.3636	4800481.32	531136.6938	4800895.68	2252.977	2304.491	25.75698	0	2.28E-10
4, Snake south	531136.6938	4800895.68	530956.1913	4800774.66	2251.338	2304.77	26.71635	0	2.30E-10
4, Snake south	530956.1913	4800774.66	530545.961	4801428.319	2247.859	2303.982	28.06113	0	2.45E-10
4, Snake south	530545.961	4801428.319	530280.8459	4801687.81	2243.757	2299.984	28.11359	0	5.47E-10
4, Snake south	530280.8459	4801687.81	530004.4228	4801890.889	2241.194	2294.034	26.42032	0	8.26E-10
4, Snake south	530004.4228	4801890.889	529829.559	4802184.219	2238.736	2288.44	24.85205	0	8.05E-10
5, Snake south	529801.365	4802201.161	529189.6314	4802578.399	2237.212	2282.619	55.40743	0	2.58608E-10
5, Snake south	529189.6314	4802578.399	528738.375	4802527.632	2236.726	2293.707	58.9815	0	2.38E-10
5, Snake south	528738.375	4802527.632	528326.5598	4802719.415	2236.349	2284.158	57.80871	0	1.50E-11
5, Snake south	528326.5598	4802719.415	527993.7182	4803029.671	2235.972	2293.935	57.96272	0	5.75E-11
5, Snake south	527993.7182	4803029.671	527339.3735	4803413.292	2235.469	2281.268	55.79844	0	1.20E-11
5, Snake south	527339.3735	4803413.292	526888.0866	4803655.852	2234.942	2285.827	50.98491	0	5.55E-12
5, Snake south	526888.0866	4803655.852	526713.2229	4803954.83	2234.586	2284.317	49.73082	0	1.34E-11
5, Snake south	526713.2229	4803954.83	526504.4958	4804124.055	2234.331	2286.274	51.94225	0	3.10E-10
6, Snake south	526470.6326	4804135.333	526229.6577	4804461.804	2233.92	2288.662	54.74169	0	1.10437E-09
6, Snake south	526229.6577	4804461.804	525958.9038	4805020.289	2233.161	2292.277	59.11613	0	2.69845E-09
6, Snake south	525958.9038	4805020.289	525750.1768	4805426.435	2232.364	2285.841	63.47736	0	8.84432E-09
6, Snake south	525750.1768	4805426.435	525246.7082	4805981.176	2231.483	2286.393	68.90834	0	7.32572E-09
7, Snake south	525204.5946	4805972.911	524815.3552	4806277.528	2230.834	2296.011	67.17748	0	1.58742E-09

7, Snake south	524815.3552	4806277.528	524290.7334	4808672.398	2230.588	2298.695	66.10869	0	3.74E-10
7, Snake south	524290.7334	4806672.396	524053.7819	4807067.295	2230.345	2295.385	65.01985	0	9.58951E-10
7, Snake south	524053.7819	4807067.295	523798.8445	4807411.384	2230.154	2295.3	65.14639	0	9.76E-10
7, Snake south	523798.8445	4807411.384	523613.8031	4807558.054	2230.011	2295.315	65.30367	0	7.55E-12
8, Snake south	523604.08	4807574.269	523344.6007	4807794.274	2229.785	2294.827	65.04225	0	1.56862E-09
8, Snake south	523344.6007	4807794.274	523045.6193	4808223.005	2229.34	2293.875	64.53518	0	2.18E-10
9, Snake south	523028.8999	4808234.283	522836.9014	4808516.345	2228.745	2292.379	63.83359	0	2.90089E-09
9, Snake south	522836.9014	4808516.345	522419.4596	4808899.938	2227.88	2290.022	62.14213	0	2.93521E-09
10, Snake south	522398.4802	4808927.795	522093.8692	4809051.879	2227.072	2289.698	62.62849	0	7.88475E-09
10, Snake south	522093.8692	4809051.879	521704.6304	4809700.615	2226.187	2285.888	59.70162	0	3.40619E-09
10, Snake south	521704.6304	4809700.615	521275.9109	4810242.153	2225.007	2278.444	51.43746	0	9.76E-10
10, Snake south	521275.9109	4810242.153	521006.7207	4810590.844	2224.084	2269.604	45.51909	0	1.27932E-09
10, Snake south	521006.7207	4810590.844	520775.4415	4811002.86	2223.34	2264.818	41.47815	0	1.76498E-09
10, Snake south	520775.4415	4811002.86	520572.3594	4811280.33	2222.688	2260.949	38.28061	0	2.54658E-09
10, Snake south	520572.3594	4811280.33	520092.8693	4811516.004	2221.949	2257.624	35.675	0	3.55273E-09
10, Snake south	520092.8693	4811516.004	519709.2694	4811826.26	2221.114	2253.416	32.30143	0	4.90594E-09
10, Snake south	519709.2694	4811826.26	519461.0708	4812091.375	2220.416	2248.689	28.27332	0	6.09201E-09
11, Snake south	519444.1391	4812097.013	519015.7702	4812378.344	2220.111	2243.301	92.75951	0	6.82731E-09
11, Snake south	519015.7702	4812378.344	518565.7787	4812878.765	2220.09	2239.313	76.89197	0	1.00696E-08
11, Snake south	518565.7787	4812878.765	518119.6307	4813402.98	2220.066	2233.815	54.99233	0	1.95962E-08
11, Snake south	518119.6307	4813402.99	517829.6298	4813759.911	2220.046	2229.159	36.44919	0	4.51877E-08
11, Snake south	517829.6298	4813759.911	517707.0412	4814465.553	2220.026	2226.249	24.89387	0	9.81559E-08
11, Snake south	517707.0412	4814465.553	517650.6289	4814837.867	2220.007	2225.14	20.5322	0	2.41038E-08
12, Snake south	517653.9085	4814873.345	517568.7892	4815373.37	2219.691	2227.087	7.396856	0	3.02811E-07
12, Snake south	517568.7892	4815373.37	517520.9304	4815681.888	2219.191	2230.217	11.02634	0	1.25034E-07
13, Snake south	517520.9304	4815687.86	517270.9212	4816165.941	2218.948	2234.381	15.43295	0	2.04949E-08

13, Snake south	517270.9212	4816165.941	517297.5211	4816639.356	2218.649	2241.143	22.29365	0	4.81085E-08
13, Snake south	517297.5211	4816639.356	517366.6711	4816931.263	2218.773	2246.898	28.12509	0	2.08225E-08
13, Snake south	517366.6711	4816931.263	517487.7397	4817086.16	2218.725	2248.579	29.85358	0	5.71704E-08
13, Snake south	517487.7397	4817086.16	517366.6711	4817622.794	2218.653	2250.827	32.1731	0	9.14972E-08
13, Snake south	517366.6711	4817622.794	517350.7087	4817883.428	2218.575	2251.863	33.28796	0	9.8768E-08
13, Snake south	517350.7087	4817883.428	517536.8897	4818207.918	2218.513	2248.294	29.78114	0	6.26207E-08
13, Snake south	517536.8897	4818207.918	517691.149	4818595.563	2218.435	2244.944	26.5083	0	3.04927E-08
13, Snake south	517691.149	4818595.563	517701.7895	4819079.616	2218.347	2244.211	25.88458	0	1.66098E-08
13, Snake south	517701.7895	4819079.616	517539.5506	4819326.961	2218.27	2244.207	25.93625	0	1.1555E-08
13, Snake south	517539.5506	4819326.961	517377.3086	4819574.306	2218.212	2243.88	25.68817	0	8.61885E-09
13, Snake south	517377.3086	4819574.306	517083.6094	4819850.856	2218.136	2243.147	25.01097	0	6.04621E-09
13, Snake south	517083.6094	4819850.856	516802.4314	4820310.083	2218.045	2240.766	22.72132	0	3.76677E-09
14, Snake south	514795.1009	4824353.723	514247.2107	4824875.022	2215.889	2270.233	54.34352	0	8.89E-10
14, Snake south	514247.2107	4824875.022	513869.5391	4825279.309	2213.43	2263.598	50.16804	0	2.27E-10
14, Snake south	513869.5391	4825279.309	513662.4214	4825528.605	2211.781	2258.469	46.68704	0	2.11E-10
14, Snake south	513662.4214	4825528.605	513273.771	4825912.287	2210.147	2253.957	43.81073	0	2.17E-10
14, Snake south	513273.771	4825912.287	513030.5802	4826076.879	2208.589	2249.859	41.28988	0	1.45E-10
14, Snake south	513030.5802	4826076.879	512775.2492	4826167.283	2207.509	2247.006	39.49697	0	3.10E-11
561a Mora canal, canal	521868.6402	4819549.282	521592.2506	4819764.928	2621.845	2469.444	-0.3	0	0
561a Mora canal, canal	521592.2506	4819764.928	521291.5594	4819992.705	2620.485	2474.739	-0.3	0	0
561a Mora canal, canal	521291.5594	4819992.705	521241.2308	4820312.989	2619.174	2480.755	-0.3	0	0
561a Mora canal, canal	521241.2308	4820312.989	521123.0507	4820412.719	2618.279	2485.111	-0.3	0	0
561a Mora canal, canal	521123.0507	4820412.719	520964.2407	4820708.193	2617.363	2489.41	-0.3	0	0
561a Mora canal, canal	520964.2407	4820708.193	520846.0515	4820889.152	2616.332	2494.814	-0.3	0	0
561a Mora canal, canal	520846.0515	4820889.152	520698.321	4821088.583	2615.484	2500.487	-0.3	0	0
561b, Mora canal, canal	520698.321	4821088.583	520613.3794	4821210.473	2614.528	2511.217	-1500	0	0
561b, Mora canal, canal	520613.3794	4821210.473	520532.1197	4821262.167	2613.696	2513.325	-1500	0	0
561b, Mora canal, canal	520532.1197	4821262.167	520476.7314	4821432.062	2612.688	2512.073	-1500	0	0

13a Snake north	517017.7208	4820432.44	516910.5592	4820635.498	2217.983	2236.17	364.1353	0	2.34653E-09
13a Snake north	516910.5592	4820635.498	516798.53	4820782.015	2217.896	2235.947	361.0332	0	1.84559E-09
13a Snake north	516798.53	4820782.015	516894.0415	4820856.574	2217.833	2238.088	405.0815	0	1.68816E-09
13b Snake north	516890.4286	4820884.529	516522.7591	4821264.605	2217.78	2247.089	58.63907	0	2.1199E-09
13b Snake north	516522.7591	4821264.605	516315.931	4821531.762	2217.739	2252.654	69.83047	0	2.00204E-09
13b Snake north	516315.931	4821531.762	516255.6111	4821971.253	2217.693	2259.309	83.23301	0	1.85033E-09
13b Snake north	516255.6111	4821971.253	516203.8987	4822548.636	2217.632	2269.751	104.2398	0	1.85594E-09
13b Snake north	516203.8987	4822548.636	516091.8695	4822962.311	2217.572	2278.42	121.697	0	6.72E-10
13b Snake north	516091.8695	4822962.311	515755.7696	4823703.432	2217.498	2281.746	128.4957	0	1.24925E-09
13b Snake north	515755.7696	4823703.432	515592.031	4823788.225	2217.439	2278.716	122.5548	0	2.43E-10
13b Snake north	515592.031	4823788.225	515566.1809	4824056.756	2217.412	2278.642	122.4601	0	1.08E-10
13b Snake north	515566.1809	4824056.756	515158.5414	4824659.345	2217.353	2281.672	128.637	0	1.5898E-09
13a Snake south	516796.9511	4820318.018	516608.9413	4820430.825	2217.971	2237.941	79.8904	0	2.3308E-09
13a Snake south	516608.9413	4820430.825	516505.5196	4820654.883	2217.908	2238	80.367	0	1.87344E-09
13a Snake south	516505.5196	4820654.883	516350.2789	4820885.8	2217.837	2240.168	89.32272	0	1.70104E-09
13b Snake south	516345.2314	4820883.755	516143.5896	4821318.483	2217.77	2246.501	28.73096	0	1.77987E-09
13b Snake south	516143.5896	4821318.463	516022.9207	4821663.161	2217.717	2252.682	34.965	0	1.61508E-09
13b Snake south	516022.9207	4821663.161	515971.2205	4822343.993	2217.651	2261.683	44.03233	0	1.55501E-09
13b Snake south	515971.2205	4822343.993	515807.4789	4822852.43	2217.573	2271.623	54.0494	0	2.33347E-09
13b Snake south	515807.4789	4822852.43	515523.0913	4823369.493	2217.502	2275.175	57.67317	0	2.73145E-09
13b Snake south	515523.0913	4823369.493	515273.1797	4823834.861	2217.431	2275.008	57.57675	0	2.27944E-09
13b Snake south	515273.1797	4823834.861	515006.0195	4824127.866	2217.373	2274.909	57.53689	0	1.9274E-09
13b Snake south	515006.0195	4824127.866	514803.5591	4824342.262	2217.329	2273.917	56.58862	0	1.70432E-09
10a Snake north	519427.2502	4812249.109	519123.4712	4812638.978	2220.097	2241.571	42.94846	0	8.33769E-09
10a Snake north	519123.4712	4812638.978	519011.9297	4812908.654	2220.061	2238.025	35.9289	0	1.083E-08
10a Snake north	519011.9297	4812908.654	518905.999	4813163.204	2220.034	2234.949	29.82983	0	1.25408E-08

10a Snake north	518905.969	4813163.204	518850.1897	4813388.257	2220.011	2231.052	22.08197	0	1.23284E-08
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