



Bingham Canyon Water Treatment Plant

Water Quality and Assurance

March 2, 2006

Water produced by the Bingham Canyon Water Treatment Plant will be of very high quality. The water quality will meet all state and federal drinking water standards.

Jordan Valley Water is proud of its ability and commitment to deliver safe, high quality water to the communities it serves through analysis, monitoring, process control and providing on-going training and education for its employees, looking for ways to operate its water system more efficiently and upgrading equipment used for water distribution.

The water obtained through the Bingham Canyon Water Treatment Plant will be rigorously tested by Kennecott before it leaves the plant to ensure it meets all federal and state regulations.

Once the water is delivered to Jordan Valley Water, the District will conduct additional tests and monitoring to assist in ensuring it meets all federal and state regulations for drinking water quality and aesthetics. The test results will be reported to the Department of Environmental Quality. The water will then be blended with Jordan Valley Water's other water sources.

The table below shows a recent laboratory analysis of water being treated by the Bingham Canyon Water Treatment Plant. The water quality in the table is also compared with the quality of Provo River water, which has commonly been treated and delivered to the cities of West Jordan, South Jordan, Herriman and Riverton.

The table also shows drinking water standards, and how the water produced by the Bingham Canyon Water Treatment Plant compares with those standards. Note that all the drinking water standards are met, and the water quality is much better than drinking water standards in almost every case.

**Inorganic Water Quality of Deep Groundwater Treated at
Bingham Canyon Water Treatment Plant, Compared with Other High Quality Water Sources**

Parameter	Units	Maximum Contaminant Level ^a		Groundwater treated at BCWTP ^d	Provo River Water Treated at JWTP ^e	SE Salt Lake Valley Groundwater (Untreated) ^f
		Primary ^b	Secondary ^c			
Primary Inorganics						
Antimony	mg/L	0.006		ND	ND	ND
Arsenic	mg/L	0.05		0.0006	0.0014	0.0010
Asbestos	Mil fibers	7			ND	ND
Barium	mg/L	2		ND	0.068	0.082
Beryllium	mg/L	0.004		ND	ND	ND
Cadmium	mg/L	0.005		ND	ND	ND
Chromium	mg/L	0.1		ND	ND	ND
Cyanide	mg/L	0.2		ND	0.0	ND
Fluoride	mg/L	4.0	2	ND	0.3	0.3
Mercury	mg/L	0.002		ND	ND	0.0
Nitrate	mg/L	10		0.3	0.29	1.50
Nitrite	mg/L	1		ND	0.0	0.008
Selenium	mg/L	0.05		0.0011	0.0007	0.0012
Sulfate	mg/L	1000 ^g	250	132	52	36
Thallium	mg/L	0.002		ND	ND	0.00000
TDS	mg/L	2000 ^h	500	250	265	258
Secondary Inorganics						
Aluminum	mg/L		0.05 to 0.2	ND	0.12	0.02
Chloride	mg/L		250	19	17	36
Color	CU		15	0	4.7	4
Copper	mg/L		1	ND	ND	0.0
Iron	mg/L		0.3	ND	ND	0.01
Manganese	mg/L		0.05	ND	0.0	0.00
Odor	CU		3	0	1	0
pH	Units		6.5-8.5	6.92	7.4	7.49
Silver	mg/L		0.1	ND	ND	0.0000
Zinc	mg/L		5	0.01	0.0	0.00
Unregulated Inorganics						
Alkalinity Bicarbonate -	mg/L			27	175	150
Ammonia	mg/L			ND		

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		Primary ^b	Secondary ^c			
Boron	mg/L				0	0.01
Carbon Dioxide	mg/L				115	116
Calcium	mg/L				44	42
Chlorite	mg/L				ND	
Conductivity	umhos/cm			461	413	403
Hardness	mg/L			177	158	160
Hexavalent Chromium	mg/L			ND		
Langelier Index	None			-1.90		
Methylene Blue Active	mg/L				0	0.04
Molybdenun	mg/L				ND	0.0019
Orthophosphates	mg/L				ND	0.00
Phosphates	mg/L					1.4
Phosphorus	mg/L			ND		
Surfactants	mg/L			ND		
Turbidity	NTU			0.10	0.07	0.34

Unregulated Metals

Bromide	mg/L				ND	
Copper	mg/L			ND		
Lead	mg/L			ND	ND	0.0001
Magnesium	mg/L			17.2	14	13.6
Nickel	mg/L			ND	ND	ND
Potassium	mg/L			0.6	2.3	3.1
Sodium	mg/L			10.9	13	22
Silica	mg/L				8.7	16.5
Strontium	mg/L				0.33	0.33

Notes:

- (a) From R309-200 Utah Drinking Water Standards (Effective Dec. 9, 2002)
- (b) Enforceable standards, established for protection of human health.
- (c) Recommended but not enforceable standards, established for aesthetic water quality guidelines.
- (d) From a laboratory analysis on December ____ 2005.

Inorganic Water Quality of Deep Groundwater Treated at Bingham Canyon Water Treatment Plant, Compared with Other High Quality Water Sources

Parameter	Units	Maximum Contaminant Level ^a		Groundwater treated at BCWTP ^d	Provo River Water Treated at JWTP ^e	SE Salt Lake Valley Groundwater (Untreated) ^f
		Primary ^b	Secondary ^c			
(e) Average of 2000-2004 analyses of surface water by Jordan Valley Water.						
(f) Average of 2000-2003 analyses of deep groundwater by Jordan Valley Water.						
(g)						

Comparison with Other Water Supplies

Water quality for potable water sources is commonly characterized by the following key constituents:

- Total dissolved solids (TDS)
- Total hardness
- Alkalinity

In addition, sulfate is an important parameter, being the elevated ion as a result of mining impacts.

Water sources are commonly considered of very high quality when TDS concentrations are less than 300 milligrams per liter (mg/L), or parts per million (ppm), and with total hardness less than 200 mg/L.

The following table shows these key water quality parameters for the following water supplies:

- Deep groundwater treated at the Bingham Canyon Water Treatment Plant
- Provo River water treated at the Jordan Valley Water Treatment Plant, which has historically been delivered to West Jordan, South Jordan, Herriman and Riverton, and which has been considered the benchmark for high quality water in Salt Lake Valley.
- Southeast South Lake Valley deep groundwater produced by Jordan Valley Water and considered a very high quality water supply.

Comparison of Water Qualities				
Source	TDS (mg/L)	Total Hardness (mg/L)	Alkalinity (as by carbonate; mg/L)	Sulfate (mg/L)
Groundwater treated at BCWTP ^a	250	177	27	132
Provo River water treated at JWVTP ^b	265	158	175	52
South East South Lake Valley deep groundwater ^c	258	160	160	36
Notes:				
(a) From a laboratory analysis on December ____, 2005				
(b) Average of 2004 analyses of Provo River water by Jordan Valley Water at JWVTP and SERWTP.				
(c) Average of 2000-2004 analyses of deep groundwater by Jordan Valley Water.				

Monitoring & Assurance

Kennecott will comply with Utah Drinking Water Standards for Public Water Supply in treating and producing water at the Bingham Canyon Water Treatment Plant. All required reporting to the Utah Division of Drinking Water will be performed by Kennecott. In addition Kennecott will continuously monitor the following water quality parameters to assure excellent water quality:

- pH
- conductivity
- temperature

Upon receiving water from the Bingham Canyon Water Treatment Plant, Jordan Valley Water will also monitor the water quality periodically to assure its high quality and compliance with drinking water standards. Jordan Valley Water will also monitor to following water quality parameters continuously:

- pH
- conductivity
- temperature