

Calculation of City of Bakersfield Domestic Water System Conservation Standard

06/06/2016

Step 1: Determine Total Potable Water Demand

Potable Water Production in Calendar Year 2013	42,359 af
Potable Water Production in Calendar Year 2014	43,199 af
Total Potable Water Demand	42,779 af

Step 2: Calculate Total Potable Water Supply

Isabella Storage Conditions (Sept. 30, 2016) ⁽¹⁾	37,200 af
Isabella Storage Conditions (Sept. 30, 2012) ⁽²⁾	19,700 af

	Year 1	Year 2	Year 3
WY 15-16 (estimated)	WY 16-17 (similar to WY 12-13)	WY 17-18 (similar to WY 13-14)	WY 18-19 (similar to WY 14-15)
(af)	(af)	(af)	(af)
Total Isabella Storage	37,200	27,150	9,932
Potable Water Supplies			
Additional Water Supplied from Isabella Storage (af) ⁽⁴⁾	-	-	3,500
Local Surface Water (Treated Kern River Surface Water)	2,537	1,459	1,260
Imported Water (Treated KCWA ID4 State Water)	4,659	3,868	2,948
Groundwater	35,261	38,401	31,292
Total Potable Water Supply	42,457	43,728	39,000

Notes on Step 2:

1. It is assumed based on current hydrology for 2016, City will have 37,200 af of water in storage on Sept. 30, 2016.
2. On Sept. 30, 2012 there were approximately 19,700 af of water in storage.
3. It is assumed that there will be a 10% evaporation rate on the additional 17,500 af of water stored in Isabella over the three year period (from Sept. 30, 2016 until Sept. 30, 2019)
4. It is assumed that in WY 18-19 an additional 3,500 af will need to be withdrawn from storage to supplement treated surface water supplies to the City of Bakersfield Domestic Water system via either the NW treatment plant or the NW Feeder.
5. Potable Water Supplies shown above are actual water supplies from WY 12-13, 13-14, and 14-15. (See Sheet 2)

Step 3: Calculate Conservation Standard

Total Potable Water Demand - From Step 1	42,779 af
Total Potable Water Supply in Year 3 - From Step 2	39,000 af
Supply Shortfall in Year 3 (negative amount indicates a surplus)	3,779 af

Conservation Standard with Self-Certification of Supply Reliability (Shortfall in Year 3)/(Total Potable Water Demand)	9%
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	Potable Water Production (Calendar Years 2013 and 2014)												
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Potable Water Production in CY 2013	1400	1559	2229	3577	4806	4117	5688	5142	4922	3890	2812	2217	42359
Potable Water Production in CY 2014	2439	2030	2510	3524	3814	5493	5501	4995	4503	3790	2644	1956	43199
Average Potable Water Production (CY 13 and 14)	1919.5	1794.5	2369.5	3550.5	4310	4805	5594.5	5068.5	4712.5	3840	2728	2086.5	42779

Supply Projection Data

	Water Year 2012-2013												
	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Total
Groundwater Production (acre-feet)	3044	2244	1127	795	929	1718	3290	4458	3765	5119	4446	4326	35261
Northwest Treatment Plant (acre-feet)	288	286	192	14	134	281	235	260	230	241	169	207	2537
Northwest Feeder Pipeline (acre-feet)	672	597	567	591	496	230	52	88	122	328	527	389	4659
Total Supply - Water Year 2012-2013 (acre-feet)													42457

	Water Year 2013-2014												
	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Total
Groundwater Production (acre-feet)	3561	2532	1958	2353	1898	2183	3199	3174	4728	4723	4197	3895	38401
Northwest Treatment Plant (acre-feet)	226	246	225	52	95	115	126	125	67	68	74	40	1459
Northwest Feeder Pipeline (acre-feet)	103	34	34	34	37	212	199	515	698	710	724	568	3868
Total Supply - Water Year 2013-2014 (acre-feet)													43728

	Water Year 2014-2015												
	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Total
Groundwater Production (acre-feet)	3425	2464	1833	1490	1524	2155	2668	2635	3370	3360	3199	3169	31292
Northwest Treatment Plant (acre-feet)	86	135	82	20	55	150	198	182	0	141	164	47	1260
Northwest Feeder Pipeline (acre-feet)	279	45	41	43	39	46	47	58	305	659	695	691	2948
Total Supply - Water Year 2014-2015 (acre-feet)													35500