TABLES

TABLE 2.1

SUMMARY OF WELL CONSTRUCTION

Boring/ Well ID	Category of Boring/Well	Survey Coordinates[1]			Static Water Level		Saturated Sandstone		Screened Interval	Total Depth of Borehole		Bottom of Well Casing	
		Northing (ft)	Easting (ft)	Top of PVC Casing (ft-amsl)[2]	Depth (ft btoc-PVC)[3]	Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft amsl)	Depth (ft btoc-steel)[4]	Depth (ft btoc)	Elevation (ft amsl)	Depth (ft btoc-steel)	Elevation (ft-amsl)
EX-2	Exploration Hole	1593061.5	2063569.7	5503.9	dry	--	--	--	--	--	--	--	--
EX-3	Exploration Hole	1592717.7	2063346.2	5511.9	dry	--	--	--	--	--	--	--	--
EX-4	Exploration Hole	1592110.9	2063259.9	5523.9	dry	--	--	--	--	--	--	--	--
EX-5	Exploration Hole	1590332.9	2060873.5	5623.1	345.5	5277.7	365.6 - 420.6	5257.5 - 5202.5	360 - 420	--	--	440	5183
EX-6	Exploration Hole	1592070.3	2058881.4	5570.9	291.0	5279.9	310.8 - 358.8	5260.1 - 5212.1	300 - 360	--	--	380	5190
EX-7	Exploration Hole	1590825.3	2060220.4	5606.7	330.1	5276.6	310.8 - 370.8	5295.9 - 5235.9	314 - 374	--	--	394	5212
EX-8	Exploration Hole	1589757.0	2061361.0	5622.7	344.0	5278.7	365 - 415	5179.6 - 5149.6	360 - 420	--	--	440	5182
EX-9	Exploration Hole	1588962.0	2062043.0	5662.5	308.2	5354.3	360 - 420*	5301.9 - 5241.9*	360 - 420	--	--	440	5222
EX-10	Exploration Hole	1588860.4	2063199.4	5642.1	286.8	5355.3	280 - 340*	5361.5 - 5301.5*	280 - 340	--	--	360	5281
EX-11	Exploration Hole	1589605.0	2062498.0	5614.0	259.7	5354.3	320 - 380*	5294 - 5234*	320 - 380	--	--	380	5234
EX-12	Exploration Hole	1594097.8	2056418.7	5558.6	239.9	5318.6	300 - 360*	5258 - 5198*	300 - 360	--	--	380	5178
EX-13	Exploration Hole	1597850.8	2053863.9	5450.0	181.5	5268.5	220 - 280*	5229.3 - 5169.3*	220 - 280	--	--	280	5169
EX-14	Exploration Hole	1600623.3	2051773.6	5383.0	239.7	5143.3	260 - 320*	5122.4 - 5062.4*	260 - 320	--	--	320	5062
EX-15	Exploration Hole	1582398.6	2076965.3	5699.0	149.0	5550.0	200 - 240*	5498 - 5458*	200 - 240	--	--	260	5438
EX-20	Exploration Hole	1591553.9	2062794.3	5535.6	384.9	5150.7	--	--	--	440	5096	--	--
EX-21	Exploration Hole	1591714.8	2060669.8	5540.0	405.1	5134.9	--	--	--	600	4940	--	--
EX-22	Exploration Hole	1592297.3	2060966.2	5528.8	381.9	5147.0	--	--	--	600	4929	--	--
EX-23	Exploration Hole	1593569.3	2060458.1	5492.3	dry	--	--	--	--	380	5113	--	--
MW-3	Monitor Well	1595146.6	2059163.1	5452.3	100.2	5352.1	--	--	--	--	--	--	--
MW-5	Monitor Well	1591270.3	2060444.4	5572.8	281.9	5290.8	--	--	--	--	--	--	--
MW-6	Monitor Well	1591173.9	2062791.6	5554.2	407.6	5146.6	442.4 - 472.4	5111.8 - 5081.8	460 - 479	--	--	485	5067
MW-7	Monitor Well	1589982.8	2060959.6	5624.9	337.7	5287.3	--	--	--	--	--	--	--
MW-8	Monitor Well	1591822.2	2062942.1	5530.2	381.4	5148.8	300 - 420*	5230.2 - 5110.2*	300 to 420	430	5100	425	5105
MW-9	Monitor Well	1592244.1	2060677.5	5527.7	406.2	5121.5	330 - 420*	5197.7 - 5107.7*	330 to 420	440	5088	425	5103
PW-1	Production Well	1592060.2	2058687.7	5570.7	280.7	5290.0	310.8 - 358.8	5260.1 - 5212.1	320 to 370	380	5191	380	5191
PW-1 OB-A	Observation Well	1592072.2	2058793.2	5565.3	269.6	5295.6	260 - 360*	5305.3 - 5205.3*	260 to 360	360	5205	360	5205
PW-1 OB-B	Observation Well	1592375.2	2058722.7	5553.5	264.4	5289.1	250 - 350*	5303.5 - 5203.5*	250 to 350	400	5153	350	5203
PW-2	Production Well	1589686.3	2061085.6	5622.5	331.2	5291.2	365 - 415	5179.6 - 5149.6	340 to 410	420	5202	420	5202
PW-2 OB-A	Observation Well	1589788.4	2061066.0	5620.0	327.4	5292.6	--	--	--	460	5160	--	--
PW-2 OB-B	Observation Well	1589494.2	2061332.7	5626.0	301.1	5325.0	400 - 460*	5226 - 5166*	400 to 460	460	5166	460	5166
PW-3	Production Well	1594133.7	2056445.0	5557.9	256.7	5301.2	240 - 370*	5317.9 - 5187.9*	240 to 280 320 to 370	380	5178	380	5178
PW-3 OB-A	Observation Well	1594213.8	2056396.9	5550.0	252.2	5297.8	220 - 320*	5330 - 5230*	220 to 320	320	5230	320	5230
PW-3 OB-B	Observation Well	1593873.1	2056599.6	5563.9	262.5	5301.4	260 - 360*	5303.9 - 5203.9*	260 to 360	360	5204	360	5204

[1] Colorado State Plane (South Zone) NAD83 horizontal dataum (adjusted to ground) with NAV88 vertical datum

[2] ft-amsl: feet above mean sea-level

[3] ft btoc-PVC: feet below top of PVC casing

[4] ft btoc-steel: feet below top of steel casing (except MW-6, which is feet below ground surface)

*Estimated using screened interval as surrogate for saturated sandstone.

TABLE 3.1

SUMMARY OF PHASE 1 PROGRAM RESULTS

Boring/ Well ID	Static Water Level		Saturated Sandstone		Attained Pumping Rate (gpm)	Estimated Aquifer Hydraulic Conductivity (cm/s)
		Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft amsl)		
EX-5	345.5	5277.7	365.6 - 420.6	5257.5 - 5202.5	19.8	2.9E-04
EX-6	291.0	5279.9	310.8 - 358.8	5260.1 - 5212.1	27.8	6.8E-03
EX-7	330.1	5276.6	310.8 - 370.8	5295.9 - 5235.9	19.4	6.0E-03
MW-6	407.6	5146.6	442.4 - 472.4	5111.8 - 5081.8	4.7	5.9E-04

[1] ft btoc: feet below top of casing

TABLE 3.2

SUMMARY OF PHASE 2 PROGRAM RESULTS

Boring ID	Static Water Level		Saturated Sandstone		Attained Pumping Rate (gpm)[1]	Estimated Hydraulic Conductivity (cm/s)
	Depth (ft btoc)[1]	Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft amsl)		
EX-8	343.95	5278.73	365 - 415	5179.6 - 5149.6	26.2	5.79E-03
EX-10	286.81	5355.28	280 – 340 [2]	5361.5 - 5301.5 [2]	14.9	1.75E-03
EX-11	259.65	5354.31	320 – 380 [2]	5294 – 5234 [2]	8.8	1.95E-04
EX-12	239.93	5318.62	300 – 360 [2]	5258 – 5198 [2]	39.8	1.16E-02
EX-15	149	5550	200 – 240 [2]	5498 – 5458 [2]	14.4	6.03E-04

[1] ft btoc: feet below top of casing
[2] Estimated using screened interval as surrogate for saturated sandstone.

TABLE 3.3

SUMMARY OF PHASE 3 PROGRAM RESULTS

Well ID	Static Water Level		Saturated Sandstone		Attained Pumping Rate (gpm)	Estimated Hydraulic Conductivity (cm/s)	Estimated Storativity
	Depth (ft btoc)[1]	Elevation (ft-amsl)	Depth (ft btoc)	Elevation (ft amsl)			
PW-1	280.7	5289.96	310.8 - 358.8	5260.1 - 5212.1	52.1	4.5E-03	2.6E-05
PW-2	331.22	5291.24	365 - 415	5179.6 - 5149.6	10.3	3.0E-03	5.7E-04
PW-3	256.65	5301.23	240 - 370 [2]	5317.9 - 5187.9 [2]	67.5	2.2E-03	1.1E-02

[1] ft btoc: feet below top of casing
[2] Estimated using screened interval as surrogate for saturated sandstone.

TABLE 4.1

SUMMARY OF AQUIFER PARAMETERS

Boring/ Well ID	Category of Boring/Well	Pumping Rate (gpm)[1]	Total Pumping Time (hours)	Maximum Observed Drawdown (ft)	Phase of Test	Solution Type	Estimated Transmissivity (cm^2/s)	Estimated Aquifer Thickness (ft)	Estimated Hydraulic Conductivity (cm/s)	Estimated Storativity
EX-5	Exploration Hole	19.8	6	45.38	pumping (step test)	Cooper-Jacob - Confined	4.86E-01	55	2.90E-04	--
					recovery	Theis (Recovery)	3.19E-01	55	1.90E-04	--
EX-6	Exploration Hole	27.78	6.67	29.14	pumping (step test)	Cooper-Jacob - Confined	9.95E+00	48	6.80E-03	--
					recovery	Theis (Recovery)	6.13E+00	48	4.19E-03	--
EX-7	Exploration Hole	19.44	6.67	27.54	pumping (step test)	Cooper-Jacob - Confined	1.10E+01	60	6.00E-03	--
					recovery	Theis (Recovery)	9.97E+00	60	5.45E-03	--
EX-8	Exploration Hole	26.2	4	19.2	pumping	Cooper-Jacob - Confined	1.15E+01	60	6.28E-03	--
					recovery	Theis (Recovery)	9.69E+00	60	5.30E-03	--
EX-10	Exploration Hole	14.9	5	16.7	pumping	Cooper-Jacob - Confined	7.94E-01	60	4.34E-04	--
					recovery	Theis (Recovery)	5.61E+00	60	3.07E-03	--
EX-11*	Exploration Hole	8.8	4	47.9	pumping	Cooper-Jacob - Confined	1.66E-01	60	9.05E-05	--
					recovery	Theis (Recovery)	5.49E-01	60	3.00E-04	--
EX-12	Exploration Hole	39.8	6	3.57	pumping	Cooper-Jacob - Confined	1.04E+01	60	5.70E-03	--
					recovery	Theis (Recovery)	3.20E+01	60	1.75E-02	--
EX-15	Exploration Hole	14.4	6	53.78	pumping	Cooper-Jacob - Confined	8.36E-01	91.1	3.01E-04	--
					recovery	Theis (Recovery)	2.51E+00	91.1	9.04E-04	--
MW-6	Monitor Well	4.71	5	18.31	pumping (step test)	Cooper-Jacob - Confined	5.39E-01	30	5.90E-04	--
MW-8	Monitor Well	slug test	--	--	falling head	Dagan - Unconfined	--	--	1.48E-04	--
					rising head	Dagan - Unconfined	--	--	1.59E-04	--
MW-9	Monitor Well	rising head test	--	--	rising head	Bouwer-Rice - Unconfined	--	--	2.40E-08	--
PW-1	Production Well	52.1 [2]	48.0	45.6 [2]	pumping	Theis - Distance-Drawdown	3.01	30	3.29E-03	3.01E-05
PW-1 OB-A	Observation Well	--	--	12.5	pumping	Theis - Confined	3.22	30	3.53E-03	1.58E-05
					recovery	Agarwal (CJ) - Confined	3.76	30	4.12E-03	1.23E-05
PW-1 OB-B	Observation Well	--	--	5.8	pumping	Theis - Confined	3.42	30	3.74E-03	2.87E-05
					recovery	Agarwal (CJ) - Confined	7.25	30	7.93E-03	4.11E-05
PW-2	Production Well	10.3	48.0	33.5	pumping	Theis - Distance-Drawdown	3.64	40	2.99E-03	5.00E-04
PW-2 OB-A	Observation Well	--	--	2.6	pumping	Theis - Confined	3.68	40	3.01E-03	6.87E-04
					recovery	Agarwal (CJ) - Confined	3.98	40	3.26E-03	1.08E-03
PW-2 OB-B	Observation Well	--	--	NR[3]		--	--	--	--	--
MW-7	Monitor Well	--	--	2.1	pumping	Theis - Confined	3.26	40	2.68E-03	2.68E-04
					recovery	Agarwal (CJ) - Confined	3.67	40	3.01E-03	3.14E-04
PW-3	Production Well	67.5	48.0	54.2	pumping	Theis - Distance-Drawdown	3.56	80	1.46E-03	1.26E-02
PW-3 OB-A	Observation Well	--	--	8.2	pumping	Cooper-Jacob - Unconfined	4.09	80	1.68E-03	1.16E-02
					recovery	Agarwal (CJ) - Unconfined	5.38	80	2.20E-03	1.20E-02
PW-3 OB-B	Observation Well	--	--	2.0	pumping	Cooper-Jacob - Unconfined	8.25	80	3.38E-03	8.87E-03
					recovery	slow recovery, could not be analyzed	--	--	--	--

[1] gpm: gallons per minute

[2] Pumping rate and max drawdown listed for final pumping rate. At a pumping rate of 66 gpm during first 5 hours of test, a maximum drawdown of 53.6 feet was observed.

[3] NR: No response observed during pumping test

TABLE 4.2

SUMMARY OF AQUIFER PROPERTIES FOR HYDROGEOLOGIC REGIONS 1 AND 2

Hydrogeological Region	Production Wells in Region	Magnitude of Hydraulic Conductivity (K)	Magnitude of Storativity (S)	Type of Aquifer
Region 1: South-Central	PW-1 and PW-2	$3x10^{-3}$ cm/sec[1]	$1x10^{-4}$	Confined
Region 2: Southwestern	PW-3	$3x10^{-3}$ cm/sec[1]	$1x10^{-2}$	Unconfined

[1] Determined by the geometric mean of estimated hydraulic conductivities from the long-term (Phase 3) pumping tests.

TABLE 4.3

ESTIMATED AQUIFER RECHARGE RATES

Recharge Component	Estimated Area		Estimated Annual Precipitation (in/yr)	Percentage of Annual Precipitation Recharging Aquifer	Estimated Recharge Rate (gpm)
	acres	ft^2			
Direct Infiltration Recharge	392	1.7E+07	12.6	5%	13
Runoff from Mesa	712	3.1E+07	14.7	5%	27

TABLE 5.1

ESTIMATED 5-YEAR SUSTAINABLE PUMPING RATES FROM AQUIFER STORAGE (GPM)

Scenario	Estimated 5-Year Sustainable Pumping Rates (gpm)					Cumulative Estimated Pumping Rate from Aquifer (gpm)
	PW-1	PW-2	PW-3	PW-4	PW-5	
One-Boundary	20	10	35	35	35	135
Two-Boundary: 4,500 ft wide	2	2	20	20	20	64