SOUTHERN CALIFORNIA EDISON (SCE) TESTS OF CDA WELLS

FROM "CHINO DESALTER WELL FIELD INFO" SPREADSHEET RECEIVED FROM TOM O'NEIL 11/13/09

Chino I Well I

Year	Oct-01	Sep-02	Mar-04	Apr-06	Jul-07	Mar-08
Discharge, P.S.I.	60.0	14.5	40.0	17.5	18.0	18.3
Static level, Ft.	132.1	146.9	136.2	123.7	125.3	120.7
Drawdown, Ft.	82.7	120.3	131.4	143.7	141.4	133.6
Discharge Head, Ft.	138.6	33.5	92.4	40.4	41.6	42.3
Pumping level, Ft.	214.8	267.2	267.6	267.4	266.7	254.3
Total Head, Ft.	353.4	300.7	360.0	307.8	308.3	296.6
Capacity (SCE), GPM	574.0	415.0	427.0	443.0	385.0	407.0
G.P.M. per ft. dd	6.9	3.4	3.3	3.1	2.7	3.0
Acre Ft. in 24 hr.	2.5	1.8	1.9	2.0	1.7	1.8
kW Input to Motor	57.10	49.80	46.00	40.00	41.20	40.50
H.P. Input to Motor	77	67	62	54	55	54
Motor Load (%)	97.0	84.6	78.1	67.9	70.0	68.8
R.P.M.	1787	1788	1787	1679	1790	1792
kWh per Acre Ft.	540.0	652.0	572.0	490.0		540.0
Overall Efficiency (%)	66.9	47.2	64.4	64.2	55.2	56.1
Total Annual Kwh				350,400	332,964	
Kw Input				40.0	41.2	

Chino I Well 2

Year	Sep-02	Feb-04	Apr-06	Jun-07	Mar-08
Discharge, P.S.I.	11.4	38.0	15.5	7.9	17.2
Static level, Ft.	131.9	124.1	124.6	117.4	127.9
Drawdown, Ft.	149.2	123.6	100.5	137.8	201.2
Discharge Head, Ft.	26.3		35.8	18.2	39.7
Pumping level, Ft.	281.1	247.7	225.1	255.2	329.0
Total Head, Ft.	307.4	335.5	260.9	273.4	368.8
Capacity (SCE), GPM	209.0	151.0	126.0	191.0	225.0
G.P.M. per ft. dd	1.4	1.2	1.3	1.4	1.1
Acre Ft. in 24 hr.	0.9	0.7	0.6	0.8	0.9
kW Input to Motor	25.00	19.10	14.40	17.30	26.90
H.P. Input to Motor	34	26	19	23	36
Motor Load (%)	78.9	60.3	45.4	54.6	84.9
R.P.M.	1638	1670	1508	1536	1781
kWh per Acre Ft.	650.0	687.0	621.0	492.0	649.0
Overall Efficiency (%)	48.4	49.9	43.0	56.8	58.1
Total Annual Kwh			126,144	109,560	
Kw Input			14.4	17.3	
Total Annual Cost			$9,461	$10,737	
Avg Cost/KWh	$0.13	$0.08	$0.07	$0.10	
Avg. Cost/Acre Ft	$82	$54	$47	$48	
Acre Ft/Year	210	304	203	223	

Chino I Well 3

Year	Feb-04	May-06	Jun-07	May-08
Discharge, P.S.I.	11.0	19.5	11.7	19.9
Static level, Ft.	88.7	136.3	154.3	163.9
Drawdown, Ft.	61.8	83.0	57.9	105.7
Discharge Head, Ft.	25.4	45.0	27.0	46.0
Pumping level, Ft.	150.5	219.3	212.2	269.6
Total Head, Ft.	175.9	264.3	239.2	315.6
Capacity (SCE), GPM	599.0	715.0	485.0	670.0
G.P.M. per ft. dd	9.7	8.6	8.4	6.3
Acre Ft. in 24 hr.	2.6	3.2	2.1	3.0
kW Input to Motor	30.80	54.00	32.20	56.00
H.P. Input to Motor	41	72	43	75
Motor Load (%)	52.3	91.7	54.7	95.1
R.P.M.	1438	1753	1494	1787
kWh per Acre Ft.	279.0	410.0	361.0	454.0
Overall Efficiency (%)	64.4	65.9	67.8	71.1
Total Annual Kwh		274,556	280,140	
Kw Input		54.0	32.2	

Chino I Well 4

Year	Sep-02	Mar-04	May-07	May-08	Aug-09
Discharge, P.S.I.	31.0	41.5	14.7	19.6	14.5
Static level, Ft.	116.3	109.7	103.5	76.8	79.5
Drawdown, Ft.	109.3	93.8	157.8	218.0	215.1
Discharge Head, Ft.	71.6	95.9	34.0	45.0	33.5
Pumping level, Ft.	225.6	203.5	261.3	295.2	294.6
Total Head, Ft.	297.2	299.4	295.3	340.5	328.1
Capacity (SCE), GPM	386.0	341.0	246.0	239.0	240.0
G.P.M. per ft. dd	3.5	3.6	1.6	1.1	1.1
Acre Ft. in 24 hr.	1.7	1.5	1.1	1.1	1.1
kW Input to Motor	33.10	31.50	24.00	26.80	26.70
H.P. Input to Motor	44	42	32	36	35.8
Motor Load (%)	104.4	99.4	75.7	84.5	84.2
R.P.M.	1778	1781	1658	1785	1786
kWh per Acre Ft.	466.0	502.0	530.0	609.0	604.0
Overall Efficiency (%)	65.3	61.0	57.0	57.2	55.5

Chino I Well 5

Year	Oct-01	Sep-02	Feb-04	Mar-06	Mar-07	May-07	Jul-07	May-08	Aug-09
Discharge, P.S.I.	57.5	42.2	43.0	48.0	35.0	54.0	55.5	53.5	49.6
Static level, Ft.	95.0	102.7	94.1	77.9	81.0	83.8	84.2	87.7	81.6
Drawdown, Ft.	43.5	54.0	48.5	55.9	42.0	22.6	49.9	48.7	47.2
Discharge Head, Ft.	132.8	97.5	99.3	110.9	80.9	124.7	128.2	123.6	114.5
Pumping level, Ft.	138.5	156.7	142.6	133.8	123.0	106.4	134.1	136.4	128.8
Total Head, Ft.	271.3	254.2	241.9	244.7	203.9	231.1	262.3	260.0	243.3
Capacity (SCE), GPM	1242.0	1232.0	1042.0	1036.0		624.0	1220.0	1225.0	1241
G.P.M. per ft. dd	28.6	22.8	21.5	18.5		27.6	24.4	25.2	26.3
Acre Ft. in 24 hr.	5.5	5.4	4.6	4.6		2.8	5.4	5.4	5.485
kW Input to Motor	94.10	95.00	75.00	75.00		45.50	91.00	91.00	92
H.P. Input to Motor	126	127	101	100		61	122	122	123.4
Motor Load (%)	95.9	96.8	76.4	76.4		46.4	92.7	92.7	93.8
R.P.M.	1790	1788	1690	1688		1458	1789	1788	1789
kWh per Acre Ft.	411.0	419.0	391.0	393.0		396.0	405.0	403.0	403
Overall Efficiency (%)	67.4	62.1	63.3	63.7		59.7	66.2	65.9	61.8
Total Annual Kwh		805,812	738,024	567,168		87,024	86,196		
Kw Input		95.0	75.0	75.0		45.5	91.0		

Chino I Well 6

Year	Sep-02	Jan-04	Nov-04	Apr-05	Sep-06	May-07	Apr-08
Discharge, P.S.I.	39.5	41.0	35.5	42.0	55.0	52.5	47.5
Static level, Ft.	96.6	89.1	89.4	81.1	83.7	85.6	86.8
Drawdown, Ft.	59.1	84.4	86.0	87.0	78.7	79.7	90.0
Discharge Head, Ft.	91.2	94.7	82.0	97.0	127.1	121.3	109.7
Pumping level, Ft.	155.7	173.5	175.4	168.1	162.4	165.3	176.8
Total Head, Ft.	246.9	268.2	257.0	265.1	289.5	286.6	286.5
Capacity (SCE), GPM	428.0	315.0	267.0	251.0	331.0	294.0	358.0
G.P.M. per ft. dd	7.2	3.7	3.1	2.9	4.2	3.7	4.0
Acre Ft. in 24 hr.	1.9	1.4	1.2	1.1	1.5	1.3	1.6
kW Input to Motor	45.90	37.20	36.20	35.70	43.50	43.20	43.10
H.P. Input to Motor	62	50	49	48	58	58	58
Motor Load (%)	46.8	37.9	36.9	36.4	44.3	44.0	43.9
R.P.M.	1434	1435	1435	1434	1530	1524	1532
kWh per Acre Ft.	582.0	641.0	736.0	772.0	714.0	798.0	654.0
Overall Efficiency (%)	43.4	42.8	35.8	35.1	41.5	36.7	44.8
Total Annual Kwh	380,868	325,872	334,632	312,732		322,008	
Kw Input	45.9	37.2	36.2	35.7		43.2	

Chino I Well 7

Year	Oct-01	Sep-02	Jan-04	Nov-04	Apr-05	May-07	Apr-08
Discharge, P.S.I.	56.5	37.5	38.0	35.8	40.5	53.5	48.5
Static level, Ft.	82.6	91.6	78.1	86.2	78.5	84.7	85.4
Drawdown, Ft.	97.6	9.4	91.4	94.5	102.9	65.2	94.7
Discharge Head, Ft.	130.5	86.6	87.8	82.7	93.6	123.6	112.0
Pumping level, Ft.	180.2	101.0	169.5	180.7	181.4	149.9	180.0
Total Head, Ft.	310.7	187.6	257.3	263.4	275.0	273.5	292.1
Capacity (SCE), GPM	790.0	390.0	312.0	296.0	330.0	196.0	226.0
G.P.M. per ft. dd	8.1		3.4	3.1	3.2	3.0	2.4
Acre Ft. in 24 hr.	3.5	1.7	1.4	1.3	1.5	0.9	1.0
kW Input to Motor	76.20	39.90	36.90	36.00	54.00	34.30	41.50
H.P. Input to Motor	102	54	50	48	72	46	56
Motor Load (%)	77.7	40.7	37.6	36.7	55.0	35.0	42.3
R.P.M.	1792	1435	1435	1436	1794	1436	1534
kWh per Acre Ft.	524.0	556.0	642.0	661.0	889.0	950.0	997.0
Overall Efficiency (%)	60.7	34.5	41.0	40.8	31.6	29.4	30.0
Total Annual Kwh	723,384	423,732	323,244	332,304	324,360	297,180	
Kw Input	76.2	39.9	36.9	36.0	54.0	34.3	

Chino I Well 8

Year	Oct-01	Sep-02	Feb-04	May-06	May-07	Jul-07	May-08
Discharge, P.S.I.	51.2	35.8	41.0	44.5	48.5	46.5	50.5
Static level, Ft.	98.5	115.0	105.1	86.5	94.2	93.8	98.2
Drawdown, Ft.	42.9	38.5	40.8	51.6	25.7	54.1	50.5
Discharge Head, Ft.	118.3	82.7	94.7	102.8	112.0	107.4	116.7
Pumping level, Ft.	141.4	153.5	145.9	138.1	119.9	147.9	148.7
Total Head, Ft.	259.7	236.2	240.6	240.9	231.9	255.3	265.4
Capacity (SCE), GPM	1047.0	965.0	861.0	949.0	555.0	1006.0	975.0
G.P.M. per ft. dd	24.4	25.1	21.1	18.4	21.6	18.6	19.3
Acre Ft. in 24 hr.	4.6	4.3	3.8	4.2	2.5	4.4	4.3
kW Input to Motor	76.40	68.50	60.00	65.00	42.70	74.00	74.50
H.P. Input to Motor	103	92	81	87	57	99	100
Motor Load (%)	96.8	86.8	76.0	82.4	54.1	93.8	94.4
R.P.M.	1780	1735	1663	1722	1498	1788	1787
kWh per Acre Ft.	396.0	386.0	378.0	372.0	418.0	399.0	415.0
Overall Efficiency (%)	67.0	62.7	65.0	66.2	56.8	65.4	65.4
Total Annual Kwh				190,380	106,788	121,596	
Kw Input				65.0	42.7	74.0	

Chino I Well 9

Year	Sep-02	Jan-04	Apr-06	May-07	Jul-07	Apr-08
Discharge, P.S.I.	39.0	35.0	38.5	45.5	43.0	46.5
Static level, Ft.	118.0	112.2	94.5	101.6	103.3	105.9
Drawdown, Ft.	28.7	12.0	8.1	13.8	24.8	27.5
Discharge Head, Ft.	90.1	80.9	88.9	105.1	99.3	107.4
Pumping level, Ft.	146.7	124.2	102.6	115.4	128.1	133.4
Total Head, Ft.	236.8	205.1	191.5	220.5	227.4	240.8
Capacity (SCE), GPM	1221.0	631.0	396.0	641.0	1085.0	1149.0
G.P.M. per ft. dd	42.5	52.6	48.9	46.4	43.8	41.8
Acre Ft. in 24 hr.	5.4	2.8	1.8	2.8	4.8	5.1
kW Input to Motor	84.20	38.60	28.00	42.30	67.00	78.00
H.P. Input to Motor	113	52	38	57	90	105
Motor Load (%)	106.7	48.9	35.5	53.6	84.9	98.8
R.P.M.	1782	1474	1387	1520	1705	1781
kWh per Acre Ft.	375.0	332.0	384.0	358.0	336.0	369.0
Overall Efficiency (%)	64.7	63.1	51.0	62.9	69.3	66.8
Total Annual Kwh			245,280	159,444	149,508	
Kw Input			28.0	42.3	67.0	

Chino I Well 10

Year	Jan-04	Apr-05	Mar-06	May-07	Jul-07	Apr-08
Discharge, P.S.I.	34.0	49.5	42.0	44.0	44.0	49.5
Static level, Ft.	109.7	97.5	96.5	103.9	104.2	106.2
Drawdown, Ft.	14.5	22.6	24.6	12.2	22.7	23.0
Discharge Head, Ft.	78.5	114.3	97.0	101.6	101.6	114.2
Pumping level, Ft.	124.2	120.1	121.1	116.1	126.9	129.2
Total Head, Ft.	202.7	234.4	218.1	217.7	228.5	243.5
Capacity (SCE), GPM	807.0	1128.0	1181.0	620.0	1101.0	1197.0
G.P.M. per ft. dd	55.7	49.9	48.0	50.8	48.5	52.0
Acre Ft. in 24 hr.	3.6	5.0	5.2	2.7	4.9	5.3
kW Input to Motor	46.80	78.00	78.50	44.60	76.00	79.00
H.P. Input to Motor	63	105	105	60	102	106
Motor Load (%)	59.3	98.8	99.5	56.5	96.3	100.1
R.P.M.	1530	1787	1786	1528	1764	1787
kWh per Acre Ft.	315.0	376.0	361.0	391.0	375.0	358.0
Overall Efficiency (%)	65.8	63.8	61.8	57.0	62.3	69.5
Total Annual Kwh		389,052	442,560	387,480	503,268	
Kw Input		78.0	78.5	44.6	76.0	

Chino I Well 11

Year	Oct-01	Sep-02	Feb-04	May-07	Jul-07	Aug-08
Discharge, P.S.I.	49.5	36.0	40.0	40.5	44.0	47.5
Static level, Ft.	92.4	98.2	94.2	98.4	98.5	101.6
Drawdown, Ft.	35.3	53.4	69.5	36.0	73.5	81.2
Discharge Head, Ft.	114.3	83.2	92.4	93.6	101.6	109.7
Pumping level, Ft.	127.7	151.6	163.7	134.4	172.0	182.8
Total Head, Ft.	242.0	234.8	256.1	228.0	273.6	292.5
Capacity (SCE), GPM	1210.0	1123.0	1078.0	529.0	970.0	818.0
G.P.M. per ft. dd	34.3	21.0	15.5	14.7	13.2	10.1
Acre Ft. in 24 hr.	5.3	5.0	4.8	2.3	4.3	3.6
kW Input to Motor	83.30	84.60	79.50	42.70	79.00	72.00
H.P. Input to Motor	112	113	107	57	106	97
Motor Load (%)	84.9	86.2	81.0	43.5	80.5	73.4
R.P.M.	1790	1789	1790	1524	1790	1792
kWh per Acre Ft.	374.0	409.0	401.0	438.0	442.0	478.0
Overall Efficiency (%)	66.2	58.7	65.4	53.2	63.3	62.6
Total Annual Kwh				368,160	584,868	
Kw Input				42.7	79.0	

Chino I Well 13

Year	May-06	Jun-07	Jul-07	Sep-07	Aug-08
Discharge, P.S.I.	55.5	57.0	54.5	120.0	59.5
Static level, Ft.	76.5	84.9	83.0	83.0	86.7
Drawdown, Ft.	71.0	65.6	93.2	79.7	78.5
Discharge Head, Ft.	128.2	131.7	125.9	277.2	137.4
Pumping level, Ft.	147.5	150.5	176.2	163.0	165.2
Total Head, Ft.	275.7	282.2	302.1	440.2	302.6
Capacity (SCE), GPM	1503.0	1050.0	1559.0	1225.0	1694.0
G.P.M. per ft. dd	21.2	16.0	16.7	15.4	21.6
Acre Ft. in 24 hr.	6.6	4.6	6.9	5.4	7.5
kW Input to Motor	148.00	113.00	166.00	186.40	154.00
H.P. Input to Motor	199	152	223	250	207
Motor Load (%)	69.5	53.0	77.9	91.9	60.6
R.P.M.					
kWh per Acre Ft.	535.0	584.0	578.0	826.3	494.0
Overall Efficiency (%)	52.7	49.4	53.4	54.5	62.7
Total Annual Kwh	895,200	983,100	1,180,008		
Kw Input	148.0	113.0	166.0		

Chino I Well 14

Year	May-06	Jun-07	Jul-07	May-08
Discharge, P.S.I.	58.0	63.5	50.0	54.0
Static level, Ft.	78.0	85.4	85.9	92.6
Drawdown, Ft.	17.3	14.1	28.8	37.1
Discharge Head, Ft.	134.0	146.7	115.5	124.7
Pumping level, Ft.	95.6	99.5	114.7	123.9
Total Head, Ft.	229.6	246.2	230.2	248.6
Capacity (SCE), GPM	1860.0	1361.0	2689.0	2522.0
G.P.M. per ft. dd	107.5	96.5	93.4	68.0
Acre Ft. in 24 hr.	8.2	6.0	11.9	11.5
kW Input to Motor	143.00	114.00	197.00	196.50
H.P. Input to Motor	191	153	264	264
Motor Load (%)	67.1	53.5	92.5	92.2
R.P.M.				
kWh per Acre Ft.	418.0	455.0	398.0	423.0
Overall Efficiency (%)	56.2	55.3	59.2	60.1
Total Annual Kwh	966,048	991,800	1,215,264	
Kw Input	143.0	114.0	197.0	

Chino I Well 15

Year	May-06	Jun-07	Jul-07	May-08
Discharge, P.S.I.	51.0	49.0	61.5	52.5
Static level, Ft.	82.5	89.7	89.9	92.6
Drawdown, Ft.	7.6	7.7	16.4	18.7
Discharge Head, Ft.	117.8	113.2	142.1	121.3
Pumping level, Ft.	90.1	97.4	106.3	111.3
Total Head, Ft.	207.9	210.6	248.4	232.6
Capacity (SCE), GPM	1353.0	1167.0	2331.0	2468.0
G.P.M. per ft. dd	178.0	151.6	142.1	132.0
Acre Ft. in 24 hr.	6.0	5.2	10.3	10.9
kW Input to Motor	91.00	83.00	174.00	174.50
H.P. Input to Motor	122	111	233	234
Motor Load (%)	42.7	39.0	81.7	81.9
R.P.M.				
kWh per Acre Ft.	365.0	386.0	405.0	384.0
Overall Efficiency (%)	58.2	55.8	62.7	61.9
Total Annual Kwh	134,880	622,356	629,460	
Kw Input	91.0	83.0	174.0	

Chino II Well 1

Year	Jan-07	Sep-07	Mar-08	Aug-09
Discharge, P.S.I.	90.0	100.5	103.5	109.2
Static level, Ft.	122.6	126.4	127.1	132.6
Drawdown, Ft.	18.0	19.3	20.4	18.0
Discharge Head, Ft.	207.9	232.2	239.1	252.3
Pumping level, Ft.	140.6	145.7	147.5	150.6
Total Head, Ft.	348.5	377.9	386.6	402.9
Capacity (SCE), GPM	2283.0	2198.0	2156.0	2062.0
G.P.M. per ft. dd	126.0	113.9	105.7	114.6
Acre Ft. in 24 hr.	10.1	9.7	9.5	9.1
kW Input to Motor	226.70	230.10	230.30	230.70
H.P. Input to Motor	304	309	309	309
Motor Load (%)	88.7	90.0	90.1	90.2
R.P.M.				
kWh per Acre Ft.	539.0	569.0	580.0	608.0
Overall Efficiency (%)	66.1	68.0	68.2	67.8

Chino II Well 2

Year	Jan-07	Aug-07	Mar-08	Jun-09
Discharge, P.S.I.	83.0	95.0	92.5	98.0
Static level, Ft.	126.1	129.7	129.7	133.8
Drawdown, Ft.	16.0	15.0	17.7	20.6
Discharge Head, Ft.	191.7	219.5	213.7	226.4
Pumping level, Ft.	142.1	145.0	147.4	154.4
Total Head, Ft.	333.8	364.9	361.1	380.8
Capacity (SCE), GPM	2071.0	1995.0	2029.0	1902.0
G.P.M. per ft. dd	129.4	127.1	114.6	92.3
Acre Ft. in 24 hr.	9.2	8.8	9.0	8.4
kW Input to Motor	204.00	203.30	202.00	202.50
H.P. Input to Motor	274	273	271	272
Motor Load (%)	79.8	79.5	79.0	79.2
R.P.M.				
kWh per Acre Ft.	535.0	553.0	541.0	578.0
Overall Efficiency (%)	63.8	67.4	68.3	67.4

Chino II Well 3

Year	Jan-07	Aug-07	Mar-08	Aug-09
Discharge, P.S.I.	81.0	93.5	101.0	98.7
Static level, Ft.	127.9	132.3	131.6	139.8
Drawdown, Ft.	17.2	17.4	18.2	16.8
Discharge Head, Ft.	187.1	216.0	233.3	225.9
Pumping level, Ft.	145.1	149.7	149.8	156.6
Total Head, Ft.	332.2	365.7	383.1	382.5
Capacity (SCE), GPM	2240.0	2071.0	1987.0	2021.0
G.P.M. per ft. dd	130.2	119.0	109.2	120.3
Acre Ft. in 24 hr.	9.9	9.2	8.8	8.9
kW Input to Motor	206.00	208.00	208.00	215.00
H.P. Input to Motor	276	279	279	288
Motor Load (%)	80.6	81.4	81.4	84.1
R.P.M.				
kWh per Acre Ft.	499.0	545.0	569.0	578.0
Overall Efficiency (%)	68.0	68.6	68.9	67.7

Chino II Well 4

Year	Jan-07	Aug-07	Nov-08
Discharge, P.S.I.	77.0	89.5	98.5
Static level, Ft.	131.5	136.4	143.3
Drawdown, Ft.	15.1	15.0	13.3
Discharge Head, Ft.	177.9	206.7	227.5
Pumping level, Ft.	146.6	151.4	156.6
Total Head, Ft.	324.5	358.1	384.1
Capacity (SCE), GPM	2325.0	2105.0	1963.0
G.P.M. per ft. dd	154.0	140.3	147.6
Acre Ft. in 24 hr.	10.3	9.3	8.7
kW Input to Motor	211.70	214.40	220.00
H.P. Input to Motor	284	288	295
Motor Load (%)	82.8	83.9	86.5
R.P.M.			
kWh per Acre Ft.	494.0	553.0	609.0
Overall Efficiency (%)	67.1	66.2	64.5
VFD %	71.0	100.0	100.0

Chino II Well 6

Year	Aug-07	Mar-08	Jun-09
Discharge, P.S.I.	79.0	97.0	99.5
Static level, Ft.	143.4	140.4	158.7
Drawdown, Ft.	19.0	18.0	21.2
Discharge Head, Ft.	182.5	224.1	229.8
Pumping level, Ft.	162.4	158.4	179.9
Total Head, Ft.	344.9	382.5	409.7
Capacity (SCE), GPM	2187.0	2071.0	1923.0
G.P.M. per ft. dd	115.1	115.1	90.7
Acre Ft. in 24 hr.	9.7	9.2	8.5
kW Input to Motor	227.00	231.00	323.00
H.P. Input to Motor	304	310	311
Motor Load (%)	88.8	90.3	90.7
R.P.M.			
kWh per Acre Ft.	564.0	606.0	655.0
Overall Efficiency (%)	62.6	64.6	63.9

Chino II Well 7

Year	Aug-07	Feb-08	Jun-09
Discharge, P.S.I.	79.5	91.5	99.0
Static level, Ft.	122.8	125.4	142.4
Drawdown, Ft.	19.6	18.3	23.5
Discharge Head, Ft.	183.6	211.4	228.7
Pumping level, Ft.	142.4	143.7	165.9
Total Head, Ft.	326.0	355.1	394.6
Capacity (SCE), GPM	1601.0	1518.0	1419.0
G.P.M. per ft. dd	81.7	83.0	60.4
Acre Ft. in 24 hr.	7.1	6.7	6.2
kW Input to Motor	158.50	156.00	156.50
H.P. Input to Motor	213	209	210
Motor Load (%)	74.4	73.2	73.5
R.P.M.			
kWh per Acre Ft.	538.0	558.0	599.0
Overall Efficiency (%)	62.0	65.1	67.4

Chino II Well 8

Year	Mar-08
Discharge, P.S.I.	91.5
Static level, Ft.	128.7
Drawdown, Ft.	18.8
Discharge Head, Ft.	211.4
Pumping level, Ft.	147.5
Total Head, Ft.	358.9
Capacity (SCE), GPM	1518.0
G.P.M. per ft. dd	80.7
Acre Ft. in 24 hr.	6.7
kW Input to Motor	151.60
H.P. Input to Motor	203
Motor Load (%)	89.5
R.P.M.	
kWh per Acre Ft.	542.0
Overall Efficiency (%)	67.7

Chino II Well 9a

Year	Aug-07	Mar-08
Discharge, P.S.I.	74.0	103.0
Static level, Ft.	145.4	153.1
Drawdown, Ft.	26.2	20.8
Discharge Head, Ft.	170.9	237.9
Pumping level, Ft.	171.6	173.9
Total Head, Ft.	342.5	411.8
Capacity (SCE), GPM	2080.0	1775.0
G.P.M. per ft. dd	79.4	85.3
Acre Ft. in 24 hr.	9.2	7.8
kW Input to Motor	208.50	210.70
H.P. Input to Motor	280	283
Motor Load (%)	81.5	82.4
R.P.M.		
kWh per Acre Ft.	544.0	645.0
Overall Efficiency (%)	64.3	65.3

APPENDIX B.2

[NOT USED]

APPENDIX B.3

[NOT USED]

APPENDIX B.4

CHINO II RAW WATER SYSTEM HYDRAULIC CLACULATIONS

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

HYDRAULIC ANALYSIS PARAMETERS

	Well Production (mgd)		Well Flow (gpm)	Percent of Capacity	Maximum Capacity (gpm)
Well I-13 Flow =	2.59	<=	1,800	90%	2,000
Well I-14 Flow =	2.59	<=	1,800	82%	2,200
Well I-15 Flow =	2.59	<=	1,800	90%	2,000
Well II-12 Flow =	0.00	<=	0	0%	2,000
Well II-11 Flow =	0.00	<=	0	0%	2,000
Well II-10 Flow =	0.00	<=	0	0%	2,000
Well II-1 Flow =	2.59	<=	1,800	90%	2,000
Well II-2 Flow =	2.59	<=	1,800	90%	2,000
Well II-3 Flow =	2.59	<=	1,800	90%	2,000
Well II-4 Flow =	2.59	<=	1,800	90%	2,000
Well II-6 Flow =	2.59	<=	1,800	90%	2,000
Well II-7 Flow =	1.77	<=	1,230	82%	1,500
Well II-8 Flow =	0.00	<=	0	0%	1,500
Well II-9A Flow =	0.00	<=	0	0%	2,000

Chino II Raw Water Flow = 22.52 mgd = 34.84 cfs

Required EGL at Chino II = 885 Raw Water Upstream of Processes (per Chino II drawings, Sheet G-5)

Well II-1 Ground Elevation = 682
Groundwater Depth (Below GS) = 160 ft Dynamic Conditions (pumping)
Groundwater Elevation = 522

EGL at Submersible Pump = 965 ft
Static Lift = 363 ft
Pipeline Headloss = 80 ft
Well TDH = 443 ft
EGL at Bellegrave/Haven = 950 ft

Equation Reference	HGL	EGL
	885.00	885.00

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
EXISTING 36" PIPE FROM CHINO II (Sta 0+00) TO BELLEGRAVE/DRY CK CHANNEL (Sta 56+56)			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow	22.5 mgd =	34.8 cfs	
Pipe Diameter, D	35.24 inch	36" C-905 DR 25 PVC: OD=38.3; Wall Thickness=1.532	
Pipe Length, L	5656 ft		
Absolute Roughness, ε	0.00100 ft	Equivalent to C=125-130 depending on pipe diameter	
Pipe velocity, v	5.15 fps		
Kinematic Viscosity	1.000E-05 ft^2/sec		
Reynold's Number, R	1510757		
Friction factor, f	0.0158		
Friction Energy Loss, h_L	12.51 ft		

MINOR PIPE LOSS HEADING

Flow, Q: 22.5 mgd = 34.8 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
3	Butterfly Valve (Open)	22.52	34.84	0.50	35.24	----	5.15	----	0.41	0.62
2	90 º Elbow - Long Rad. Fl.	22.52	34.84	0.23	35.24	----	5.15	----	0.41	0.19
1	Increaser	22.52	34.84	0.25	29.44	35.24	7.37	5.15	0.43	0.11
									Sum =	0.91

Total Energy Loss = 13.42 ft

Condition Upstream of 30" x 36" Increaser		897.58	898.42

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
EXISTING 30" PIPE FROM BELLEGRAVE/DRY CK CHANNEL (Sta 56+56) TO WELL II-9A TEE (Sta 82+47)			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow: 22.5 mgd = 34.8 cfs

Pipe Diameter, D	29.44 inch	30" C-905 DR 25 PVC: OD=32; Wall Thickness=1.280
Pipe Length, L	2591 ft	
Absolute Roughness, ε	0.00100 ft	Equivalent to C=125-130 depending on pipe diameter
Pipe velocity, v	7.37 fps	
Kinematic Viscosity	1.000E-05 ft^2/sec	
Reynold's Number, R	1808187	
Friction factor, f	0.0163	
Friction Energy Loss, h_L	14.51 ft	

MINOR PIPE LOSS HEADING

Flow, Q: 22.5 mgd = 34.8 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
2	Butterfly Valve (Open)	22.52	34.84	0.50	29.44	----	7.37	----	0.84	0.84
1	Tee - Thru Straight Run	22.52	34.84	0.60	29.44	----	7.37	----	0.84	0.51
									Sum =	1.35

Total Energy Loss = 15.86 ft

Condition Upstream of Well II-9A Tee		913.45	914.29

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **BY :** MRM **DATE :** **DATE :** 7/24/2009

						Equation Reference	HGL	EGL
EXISTING 30" PIPE FROM WELL II-9A TEE (Sta 82+47) to WELL II-6, 7, 8 TEE (Sta 91+98)								
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]						{ 4 }		
Downstream Flow	22.5	mgd =	34.8	cfs				
Well Flow thru Tee	0.0	mgd =	0.0	cfs	Well II-9A			
Flow	22.5	mgd =	34.8	cfs				
Pipe Diameter, D	29.44	inch	30" C-905 DR 25 PVC: OD=32; Wall Thickness=1.280					
Pipe Length, L	951	ft						
Absolute Roughness, ε	0.00100	ft	Equivalent to C=125-130 depending on pipe diameter					
Pipe velocity, v	7.37	fps						
Kinematic Viscosity	1.000E-05	ft^2/sec						
Reynold's Number, R	1808187							
Friction factor, f	0.0163							
Friction Energy Loss, h_L	5.33	ft						
MINOR PIPE LOSS HEADING								
Flow, Q	22.5	mgd =	34.8	cfs				

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Tee - Thru Straight Run	22.52	34.84	0.60	29.44	----	7.37	----	0.84	0.51
									Sum =	0.5061

Total Energy Loss = 5.83 ft

Condition Upstream of Wineville Ave (Well II-6, 7, 8) Tee		919.28	920.12

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

		Equation Reference	HGL	EGL
EXISTING 30" PIPE FROM WELL II-6, 7, 8 TEE (Sta 91+98) TO WELL II-4 TEE (Sta 150+55)				
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]		{ 4 }		

Downstream Flow	22.5	mgd =	34.8	cfs	
Well Flow thru Tee	4.4	mgd =	6.8	cfs	Sum of Wells II-6, 7, 8
Flow	18.2	mgd =	28.1	cfs	
Pipe Diameter, D	29.44	inch			30" C-905 DR 25 PVC: OD=32; Wall Thickness=1.280
Pipe Length, L	5857	ft			
Absolute Roughness, ε	0.00100	ft			Equivalent to C=125-130 depending on pipe diameter
Pipe velocity, v	5.94	fps			
Kinematic Viscosity	1.000E-05	ft^2/sec			
Reynold's Number, R	1457656				
Friction factor, f	0.0164				
Friction Energy Loss, h_L	21.42	ft			

MINOR PIPE LOSS HEADING

Flow, Q	18.2	mgd =	28.1	cfs	

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Butterfly Valve (Open)	18.16	28.09	0.50	29.44	----	5.94	----	0.55	0.27
1	Tee - Thru Straight Run	18.16	28.09	0.60	29.44	----	5.94	----	0.55	0.33
									Sum =	0.60

Total Energy Loss = 22.03 ft

Condition Upstream of Well II-4 Tee		941.60	942.15

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

				Equation Reference	HGL	EGL
EXISTING 24" PIPE FROM WELL II-4 TEE (Sta 150+55) TO WELL II-3 TEE (Sta 165+21)						
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]				{ 4 }		
Downstream Flow	18.2	mgd =	28.1 cfs			
Well Flow thru Tee	2.6	mgd =	4.0 cfs Well II-4			
Flow	15.6	mgd =	24.1 cfs			
Pipe Diameter, D	33.57	inch	24" C-905 DR 25 PVC: OD=25.8; Wall Thickness=1.032			
Pipe Length, L	1466	ft				
Absolute Roughness, ε	0.00100	ft	Equivalent to C=125-130 depending on pipe diameter			
Pipe velocity, v	3.92	fps				
Kinematic Viscosity	1.000E-05	ft^2/sec				
Reynold's Number, R	1095780					
Friction factor, f	0.0161					
Friction Energy Loss, h_L	2.01	ft				

MINOR PIPE LOSS HEADING

Flow, Q 15.6 mgd = 24.1 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Increaser	15.56	24.07	0.25	33.57	29.44	3.92	5.09	-0.16	-0.04
1	Butterfly Valve (Open)	15.56	24.07	0.50	33.57	----	3.92	----	0.24	0.12
1	Tee - Thru Straight Run	15.56	24.07	0.60	33.57	----	3.92	----	0.24	0.14
									Sum =	0.22

Total Energy Loss = 2.23 ft

Condition Upstream of Well II-3 Tee		944.14	944.38

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
EXISTING 24" PIPE FROM WELL II-3 TEE (Sta 165+21) TO WELL II-2 TEE (Sta 177+21)			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Downstream Flow	15.6	mgd =	24.1	cfs	
Well Flow thru Tee	2.6	mgd =	4.0	cfs	Well II-3
Flow	13.0	mgd =	20.1	cfs	

Pipe Diameter, D	33.57	inch	24" C-905 DR 25 PVC: OD=25.8; Wall Thickness=1.032
Pipe Length, L	1200	ft	
Absolute Roughness, ε	0.00100	ft	Equivalent to C=125-130 depending on pipe diameter
Pipe velocity, v	3.26	fps	
Kinematic Viscosity	1.000E-05	ft^2/sec	
Reynold's Number, R	913150		
Friction factor, f	0.0162		
Friction Energy Loss, h_L	1.15	ft	

MINOR PIPE LOSS HEADING

Flow, Q	13.0	mgd =	20.1	cfs	

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Butterfly Valve (Open)	12.97	20.06	0.50	33.57	----	3.26	----	0.17	0.08
1	Increaser	12.97	20.06	0.25	28.63	33.57	4.49	3.26	0.15	0.04
1	Butterfly Valve (Open)	12.97	20.06	0.50	28.63	----	4.49	----	0.31	0.16
1	Tee - Thru Straight Run	12.97	20.06	0.60	28.63	----	4.49	----	0.31	0.19
									Sum =	0.46

Total Energy Loss = 1.61 ft

Condition Upstream of Well II-2 Tee		945.68	945.99

	Equation Reference	HGL	EGL
EXISTING 16" PIPE FROM WELL II-2 TEE (Sta 177+21) TO BELLEGRAVE/HAVEN (Sta 207+52)			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Downstream Flow	13.0	mgd =	20.1	cfs	
Well Flow thru Tee	2.6	mgd =	4.0	cfs	Well II-2
Flow	10.4	mgd =	16.0	cfs	

Pipe Diameter, D	28.63	inch	Equivalent to Parallel 24" and 16" C-905 DR 25
Pipe Length, L	3031	ft	
Absolute Roughness, ε	0.00100	ft	Equivalent to C=125-130 depending on pipe diameter
Pipe velocity, v	3.59	fps	
Kinematic Viscosity	1.000E-05	ft^2/sec	
Reynold's Number, R	856524		
Friction factor, f	0.0167		
Friction Energy Loss, h_L	4.25	ft	

MINOR PIPE LOSS HEADING

Flow, Q	10.4	mgd =	16.0	cfs	

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Butterfly Valve (Open)	10.37	16.05	0.50	28.63	----	3.59	----	0.20	0.10
									Sum =	0.1001

Total Energy Loss = 4.35 ft

Upstream Condition at Bellegrave and Haven		950.15	950.35

	Equation Reference	HGL	EGL
EXISTING 16" PIPE FROM BELLEGRAVE/HAVEN TO WELL II-1 PROPERTY LINE			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow	2.6 mgd =	4.0 cfs	Well II-1
Pipe Diameter, D	16.01 inch	16" C-905 DR 25 PVC: OD=17.4; Wall Thickness=0.696	
Pipe Length, L	143 ft		
Absolute Roughness, ε	0.00100 ft		
Pipe velocity, v	2.87 fps		
Kinematic Viscosity	1.000E-05 ft^2/sec		
Reynold's Number, R	382964		
Friction factor, f	0.0193		
Friction Energy Loss, h_L	0.26 ft		

MINOR PIPE LOSS HEADING

Flow, Q: 2.6 mgd = 4.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	90 º Elbow - Long Rad. Fl.	2.59	4.01	0.23	6	----	20.43	----	6.48	1.49
									Sum =	1.4914

Total Energy Loss = 1.76 ft

Condition at Well II-1 Property Line		945.62	952.10

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
WELL II-1 12" DISCHARGE PIPING.			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow	2.6	mgd =	4.0 cfs
Pipe Diameter, D	12	inch	
Pipe Length, L	50	ft	
Absolute Roughness, ε	0.00100	ft	
Pipe velocity, v	5.11	fps	
Kinematic Viscosity	1.000E-05	ft^2/sec	
Reynold's Number, R	510874		
Friction factor, f	0.0202		
Friction Energy Loss, h_L	0.41	ft	

MINOR PIPE LOSS HEADING

Flow, Q: 2.6 mgd = 4.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Increaser	2.59	4.01	0.25	12	16	5.11	2.87	0.28	0.07
1	90 º Elbow - Long Rad. Fl.	2.59	4.01	0.23	12	----	5.11	----	0.41	0.09
1	Increaser	2.59	4.01	0.25	10	12	7.36	5.11	0.44	0.11
									Sum =	0.27

Total Energy Loss = 0.68 ft

Upstream Condition		951.23	952.78

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

		Equation Reference	HGL	EGL

WELL II-1 10" DISCHARGE PIPING.

[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)] {4}

Flow	2.6 mgd =	4.0 cfs	
Pipe Diameter, D	10 inch		
Pipe Length, L	323 ft	Includes 10" drop pipe to submersible pump	
Absolute Roughness, ε	0.00100 ft		
Pipe velocity, v	7.36 fps		
Kinematic Viscosity	1.000E-05 ft^2/sec		
Reynold's Number, R	613048		
Friction factor, f	0.0210		
Friction Energy Loss, h_L	6.83 ft		

MINOR PIPE LOSS HEADING

Flow, Q: 2.6 mgd = 4.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	90 º Elbow - Long Rad. Fl.	2.59	4.01	0.23	10	----	7.36	----	0.84	0.19
1	Gate Valve (Open)	2.59	4.01	0.19	10	----	7.36	----	0.84	0.16
1	Globe Valve (Open)	2.59	4.01	5.80	10	----	7.36	----	0.84	4.87
1	90 º Elbow - Long Rad. Fl.	2.59	4.01	0.23	10	----	7.36	----	0.84	0.19
									Sum =	5.42

Total Energy Loss = 12.25 ft

Condition at Submersible Pump Discharge		964.19	965.03

PIPELINE TO WELLS I-13, 14, 15

	Equation Reference	HGL	EGL
Upstream Condition at Bellegrave and Haven		950.35	950.35

NEW PIPELINE FROM HAVEN AVE. (WELL I-1) TO ARCHIBALD/65th ST.

[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)] { 4 }

Flow	7.8 mgd =	12.0 cfs
Pipe Diameter, D	24	inch
Pipe Length, L	9076	ft
Absolute Roughness, ε	0.00100	ft
Pipe velocity, v	3.83	fps
Kinematic Viscosity	1.000E-05	ft^2/sec
Reynold's Number, R	766310	
Friction factor, f	0.0174	
Friction Energy Loss, h_L	17.95	ft

MINOR PIPE LOSS HEADING

Flow, Q 7.8 mgd = 12.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Tee - Thru Straight Run	7.78	12.04	0.60	24	----	3.83	----	0.23	0.14
1	Tee - Thru Side Outlet	7.78	12.04	1.80	24	----	3.83	----	0.23	0.41
1	Mitre Bend - 90 º Deflection	7.78	12.04	1.27	24	----	3.83	----	0.23	0.29
3	Butterfly Valve (Open)	7.78	12.04	0.50	24	----	3.83	----	0.23	0.34
									Sum =	1.18

Total Energy Loss = 19.13 ft

Connection to Existing 24" Pipe at Archibald Ave and 65th Street		969.47	969.47

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

		Equation Reference	HGL	EGL
EXISTING 24" PIPELINE ON 65th STREET FROM ARCHIBALD TO WELL I-13 TEE				
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]		{ 4 }		
Flow	7.8 mgd = 12.0 cfs *Sum of Wells I-13, 14, and 15*			
Pipe Diameter, D	24 inch			
Pipe Length, L	298 ft			
Absolute Roughness, ε	0.00100 ft			
Pipe velocity, v	3.83 fps			
Kinematic Viscosity	1.000E-05 ft^2/sec			
Reynold's Number, R	766310			
Friction factor, f	0.0174			
Friction Energy Loss, h_L	0.59 ft			
MINOR PIPE LOSS HEADING				
Flow, Q	7.8 mgd = 12.0 cfs			

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Tee - Thru Straight Run	7.78	12.04	0.60	24	----	3.83	----	0.23	0.14
									Sum =	0.1368
	Total Energy Loss =	0.73 ft								

Condition at Tee to Well I-13	970.20	970.20

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **BY :** MRM **DATE :** **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
EXISTING 24" PIPELINE ON 65th STREET FROM WELL I-13 TO WELL I-14 TEE			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow	5.2	mgd =	8.0 cfs	*Sum of Wells I-14 and 15*
Pipe Diameter, D	24	inch		
Pipe Length, L	2100	ft		
Absolute Roughness, ε	0.00100	ft		
Pipe velocity, v	2.55	fps		
Kinematic Viscosity	1.000E-05	ft^2/sec		
Reynold's Number, R	510874			
Friction factor, f	0.0176			
Friction Energy Loss, h_L	1.88	ft		

MINOR PIPE LOSS HEADING

Flow, Q: 5.2 mgd = 8.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Tee - Thru Straight Run	5.19	8.02	0.60	24	----	2.55	----	0.10	0.06
									Sum =	0.0608

Total Energy Loss = 1.94 ft

Condition at Tee to Well I-14	972.14	972.14

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

		Equation Reference	HGL	EGL
EXISTING 24" PIPELINE EAST OF WELL I-14 TEE				
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]		{ 4 }		
Flow	2.6 mgd = 4.0 cfs *Well I-15*			
Pipe Diameter, D	24 inch			
Pipe Length, L	248 ft			
Absolute Roughness, ε	0.00100 ft			
Pipe velocity, v	1.28 fps			
Kinematic Viscosity	1.000E-05 ft^2/sec			
Reynold's Number, R	255437			
Friction factor, f	0.0184			
Friction Energy Loss, h_L	0.06 ft			
MINOR PIPE LOSS HEADING				
Flow, Q	2.6 mgd = 4.0 cfs			

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Increaser	2.59	4.01	0.25	16	24	2.87	1.28	0.10	0.03
									Sum =	0.0257

Total Energy Loss = 0.08 ft

Upstream Condition at 16"/24" Increaser	972.22	972.22

PROJECT : CHINO DESALTER PHASE 3 CHINO PIPELINE EVALUATION
CHINO II RAW WATER PIPELINE

JOB # : 7651C.00 **REVISION:** **CHECKED :** **DATE :** **BY :** MRM **DATE :** 7/24/2009

	Equation Reference	HGL	EGL
EXISTING 16" PIPELINE TO WELL I-15 TEE			
[PIPE FRICTION LOSSES (DARCY-WEISBACH / COLEBROOK)]	{ 4 }		

Flow	2.6	mgd =	4.0 cfs
Pipe Diameter, D	16	inch	
Pipe Length, L	1216	ft	
Absolute Roughness, ε	0.00100	ft	
Pipe velocity, v	2.87	fps	
Kinematic Viscosity	1.000E-05	ft^2/sec	
Reynold's Number, R	383155		
Friction factor, f	0.0193		
Friction Energy Loss, h_L	2.25	ft	

MINOR PIPE LOSS HEADING

Flow, Q: 2.6 mgd = 4.0 cfs

No.	Description	Flow (mgd)	Flow (cfs)	K	Dia Up (in)	Dia Down (in)	Vel Up (fps)	Vel Down (fps)	Vel Head (ft)	Minor Loss (ft)
1	Tee - Thru Side Outlet	2.59	4.01	1.80	12	----	5.11	----	0.41	0.73
									Sum =	0.7295

Total Energy Loss = 2.98 ft

Upstream Condition at Well I-15 Tee		975.20	975.20

CHINO I WELL VOC DATA

	Chino I Desalter Wells													
	Raw Water Trichloroethylene (TCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
5/12/2009		1.3	24											
4/14/2009		1.2	20											
3/10/2009		1.1	21											
2/10/2009		0.77	17											
1/8/2009		0.79	22											
11/8/2008		0.84	24											
10/8/2008		0.74	27											
9/8/2008		0.68	23											
8/8/2008		0.63	20											
7/8/2008		0.65	24											
6/3/2008		0.8	30											
5/7/2008		0.74	31											
4/3/2008		0.67	27						0.52	0.89				
3/6/2008		0.66	19											
2/5/2008		0.74	32											
1/2/2008		0.75	32						0.51	0.86				
12/5/2007		0.81	33											
11/7/2007		0.71	34											
10/2/2007		0.72	34						0.55	0.99				
9/5/2007		0.76	33											
8/1/2007		0.75	28											
7/24/2007						0.5	0.5					0.5	0.5	0.5
7/19/2007										0.92	0.5			
7/10/2007	0.5	0.71	28											
6/8/2007		0.7	33											
5/2/2007		0.87	39											
4/4/2007			38			0.5	0.5	0.5		0.77	0.5	0.5	0.5	
3/7/2007			47											
2/14/2007														
1/9/2007		3.8	36			0.5	0.5	0.5		0.77	0.5	0.5	0.5	0.5
12/12/2006		3.5	40											
11/7/2006		4.1	41		0.5	0.5	0.5	0.5	0.5	0.93	0.5	0.5	0.5	0.5
10/3/2006		3.8	48											
9/6/2006		3.8	38		0.5	0.5	0.5	0.5	0.5	0.76	0.5	0.5	0.5	
8/22/2006		3.9												
8/2/2006			41											
7/19/2006									0.51	0.85		0.5	0.5	0.5
7/12/2006	0.5			0.5	0.5	0.5	0.5				0			
6/28/2006			40											
6/7/2006		2.1												
5/3/2006		4.4	47											
4/19/2006		3.6	38									0.5	0.5	0.5
3/8/2006		4.9	51											
2/2/2006		4.2	44											
1/25/2006												0.5	0.5	0.5
1/11/2006		4.2	43											
12/8/2005		4.9	52											
11/9/2005		5.1	48											
10/17/2005												0.5	0.5	
10/5/2005												0.5	0.5	
10/4/2005		5.1	44											
9/14/2005		5.6	48											
8/1/2005		8.3	55											
7/18/2005													0.5	
7/7/2005							0.5			0.77	0.5			
7/6/2005									0.5					
7/5/2005	0.5	7.1	43	0.5					0					
6/21/2005														
6/15/2005														0.5
6/8/2005		8.2	51											
5/26/2005												0.5		
5/4/2005		11	26											
4/27/2005		16	24											
3/2/2005		11	1.5											

	Chino I Desalter Wells													
	Raw Water Trichloroethylene (TCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
2/9/2005		11	1.5											
1/5/2005		13	0											
12/15/2004			0											
12/1/2004		12												
11/17/2004		15	0											
10/6/2004		13												
9/8/2004		0												
8/4/2004		9.4												
7/22/2004									0		0			
7/20/2004						0	0							
7/8/2004	0													
3/31/2004		10	0											
3/3/2004			0								9.7			
2/17/2004				0										
11/4/2003		9.4												
10/8/2003				0			0				0			
8/6/2003		7.4		0										
7/9/2003				0						0	0			
7/8/2003	0	5.8	0.7						0					
7/7/2003					0	0.5	0							
4/9/2003		4.8		0			0							
3/5/2003		4												
2/6/2003			3.2							0				
2/5/2003	0	3.1	1.7	0			0		0	0	0			
1/23/2003		3.4		0			0		0	0				
1/8/2003		2.5		0										
12/23/2002												0		
12/20/2002												0		
12/19/2002												0		
12/4/2002		2.2												
11/13/2002		2												
10/29/2002		2												
10/16/2002										0				
10/9/2002							0							
10/4/2002		1.6												
10/3/2002									0		0			
10/2/2002		1.4		0										
9/11/2002		1.4												
8/14/2002		1.1												
7/24/2002										0	0			
7/18/2002							0		0					
7/17/2002					0									
7/11/2002	0	0.9		0										
5/23/2002		0.6		0			0				0.5			
5/15/2002										0				
5/1/2002		0		0			0							
4/24/2002									0					
1/15/2002			33											
1/7/2002										0				
12/26/2001			33											
12/24/2001			31											
12/21/2001			43											
12/10/2001			31											
8/2/2001				0										
7/26/2001				0										
7/18/2001				0										
7/11/2001				0										
7/5/2001				0										
7/3/2001				0										
6/29/2001														
6/20/2001			23											
6/14/2001			25											
6/12/2001			21											
6/5/2001			24											
5/29/2001			22											

	Chino I Desalter Wells													
	Raw Water Trichloroethylene (TCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
5/24/2001	0		32											
5/22/2001			26											
5/16/2001			36											
5/9/2001			36											
5/3/2001			25											
4/23/2001			25											
4/17/2001			25											
4/9/2001			31											
4/4/2001			29											
3/28/2001			28											
3/20/2001			26											
3/15/2001			28											
3/7/2001			27											
2/28/2001			25	0										
2/15/2001	0													
2/14/2001			26	0										
1/31/2001			22	0										
1/17/2001			25	0										
1/12/2001				0										
1/4/2001			29											
12/20/2000			23											
12/6/2000			23											
11/29/2000			19											
11/21/2000			22											
11/16/2001	0													
11/15/2000			22											
11/8/2000			14											
10/26/2000			19											
10/18/2000			17											
9/19/2000	0		16											
5/15/2000				0										
4/27/2000			0											
AVG	0.14	3.95	27.46	0.04	0.30	0.44	0.21	0.50	0.24	0.47	0.88	0.39	0.50	0.50
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.00	0.00	0.00	0.50	0.50
Max	0.50	16.00	55.00	0.50	0.50	0.50	0.50	0.50	0.55	0.99	9.70	0.50	0.50	0.50

MCL	ppb	5
DLR	ppb	0.5

	Chino I Desalter Wells													
	Raw Water Tetrachloroethylene (PCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
5/12/2009														
4/14/2009														
3/10/2009		0.5	0.5											
2/10/2009		0.5	0.5											
1/8/2009		0.5	0.5											
11/8/2008														
10/8/2008														
9/8/2008														
8/8/2008														
7/8/2008														
6/3/2008														
5/7/2008		0.5	0.5											
4/3/2008		0.5	0.5						0.5	0.5				
3/6/2008														
2/5/2008														
1/2/2008		0.5	0.5						0.5	0.5				
12/5/2007														
11/7/2007														
10/2/2007									0.5	0.5				
9/5/2007														
8/1/2007														
7/24/2007						0.5	0.5					0.5	0.5	0.5
7/19/2007										0.5	0.5			
7/10/2007	0.5													
6/8/2007														
5/2/2007														
4/4/2007						0.5	0.5	0.5		0.5	0.5	0.5	0.5	
3/7/2007														
2/14/2007														
1/9/2007						0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5
12/12/2006														
11/7/2006					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
10/3/2006														
9/6/2006					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	
8/22/2006														
8/2/2006														
7/19/2006									0.5	0.5		0.5	0.5	0.5
7/12/2006	0.5			0.5	0.5	0.5	0.5				0			
6/28/2006														
6/7/2006														
5/3/2006														
4/19/2006												0.5	0.5	0.5
3/8/2006														
2/2/2006														
1/25/2006												0.5	0.5	0.5
1/11/2006														
12/8/2005														
11/9/2005														
10/17/2005												0.5	0.5	
10/5/2005												0.5	0.5	
10/4/2005														
9/14/2005														
8/1/2005														
7/18/2005													0.5	
7/7/2005							0.5			0.5	0.5			
7/6/2005									0.5					
7/5/2005	0.5			0.5					0					
6/21/2005														
6/15/2005														0.5
6/8/2005														
5/26/2005												0.5		
5/4/2005														
4/27/2005														
3/2/2005														

	Chino I Desalter Wells													
	Raw Water Tetrachloroethylene (PCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
2/9/2005														
1/5/2005														
12/15/2004														
12/1/2004														
11/17/2004														
10/6/2004														
9/8/2004														
8/4/2004														
7/22/2004									0		0			
7/20/2004						0	0							
7/8/2004	0													
3/31/2004														
3/3/2004			0								0			
2/17/2004				0										
11/4/2003		0												
10/8/2003				0			0				0			
8/6/2003														
7/9/2003				0						0	0			
7/8/2003	0	0	0						0					
7/7/2003					0	0	0							
4/9/2003		0		0			0							
3/5/2003		0												
2/6/2003			0							0				
2/5/2003	0	0	0	0			0		0	0	0			
1/23/2003		0		0			0		0	0				
1/8/2003		0		0										
12/23/2002												0		
12/20/2002												0		
12/19/2002												0		
12/4/2002		0												
11/13/2002		0												
10/29/2002		0												
10/16/2002										0				
10/9/2002							0							
10/4/2002		0												
10/3/2002									0		0			
10/2/2002		0		0										
9/11/2002		0												
8/14/2002		0												
7/24/2002										0	0			
7/18/2002							0		0					
7/17/2002					0									
7/11/2002	0	0		0										
5/23/2002		0		0			0				0			
5/15/2002										0				
5/1/2002		0		0			0							
4/24/2002									0					
1/15/2002			0											
1/7/2002										0				
12/26/2001			0											
12/24/2001			0											
12/21/2001			0											
12/10/2001			0											
8/2/2001														
7/26/2001				0										
7/18/2001														
7/11/2001														
7/5/2001				0										
7/3/2001														
6/29/2001														
6/20/2001														
6/14/2001			0											
6/12/2001														
6/5/2001														
5/29/2001														
5/24/2001	0		0											

	Chino I Desalter Wells													
	Raw Water Tetrachloroethylene (PCE) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
5/22/2001														
5/16/2001														
5/9/2001														
5/3/2001														
4/23/2001														
4/17/2001														
4/9/2001														
4/4/2001														
3/28/2001														
3/20/2001														
3/15/2001														
3/7/2001														
2/28/2001														
2/15/2001	0													
2/14/2001			0	0										
1/31/2001														
1/17/2001														
1/12/2001														
1/4/2001														
12/20/2000														
12/6/2000														
11/29/2000														
11/21/2000														
11/16/2001	0													
11/15/2000														
11/8/2000														
10/26/2000														
10/18/2000														
9/19/2000	0		0											
5/15/2000				0										
4/27/2000			0											

MCL	ppb	5
DLR	ppb	0.5

	Chino I Desalter Wells													
	Raw Water 1, 2, 3-Trichloropropane (TCP) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
5/12/2009		0.27	0.87											
4/14/2009		0.24	0.75											
3/10/2009		0.24	0.85											
2/10/2009		0.27	0.87											
1/8/2009		0.25	0.84											
12/8/2008		0.20	1.0											
11/8/2008		0.17	0.8											
10/8/2008		0.16	0.8											
9/8/2008		0.17	0.9											
8/8/2008		0.18	0.98											
7/8/2008		0.15	0.9											
6/3/2008		0.15	0.91											
5/7/2008		0.13	0.77											
4/3/2008		0.15	1						0.005	0.005				
3/6/2008		0.13	0.98											
2/5/2008		0.17	1.2											
1/2/2008		0.16	1.2						0.005	0.005				
12/5/2007		0.14	1.1											
11/7/2007		0.12	1											
10/2/2007		0.11	1.4						0.005	0.005				
9/5/2007		0.087	1.2											
8/1/2007		0.1	1.4											
7/24/2007														
7/19/2007														
7/10/2007		0.075	1.1											
6/8/2007		0.078	2.5											
5/2/2007		0.032	0.98											
4/4/2007			1.3			0.005	0.005	0.005		0.005	0.005	0.005	0.005	
3/7/2007			1.5											
2/14/2007			2											
1/9/2007		0.59	1.8			0.005	0.005	0.005		0.005	0.005	0.005	0.005	0.005
12/12/2006		0.56	1.9											
11/7/2006		0.46	1.3		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
10/3/2006		0.52	1.5											
9/6/2006		0.56	1.6		0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	
8/22/2006		0.45												
8/2/2006			1.3											
7/19/2006									0.005	0.005		0.005	0.005	0.005
7/12/2006	0.005			0.005	0.005	0.005	0.005				0.005			
6/28/2006														
6/7/2006		0.092	2.3											
5/3/2006		0.36	0.99											
4/19/2006		0.44	1.4									0.005	0.005	0.005
3/8/2006		0.4	1.1											
2/2/2006		0.38	1.4											
1/25/2006												0.005	0.005	0.005
1/11/2006		0.41	1.1											
12/8/2005		0.5	1.6											
11/9/2005		0.5	1.7											
10/17/2005												0.005	0.005	
10/5/2005														
10/4/2005		0.44	1.3											
9/14/2005		0.37	1											
8/1/2005		0.35	1.2											
7/18/2005													0.005	
7/7/2005							0.005			0.005	0.005			
7/6/2005									0.005					
7/5/2005	0.005	0.35	0.98	0.005										
6/21/2005			0.94											
6/15/2005														0.005
6/8/2005		0.36	1											
5/26/2005												0		
5/4/2005		0.31	0.55											
4/27/2005		0.3	0.5											
3/2/2005		0.32	0.036											
2/9/2005		0.29	0.032											
1/5/2005		0.27	0.005											
12/15/2004			0.006											

	Chino I Desalter Wells													
	Raw Water 1, 2, 3-Trichloropropane (TCP) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
12/1/2004		0.27												
11/17/2004		0.31	0.005											
10/6/2004		0.27												
9/8/2004		0.37												
8/4/2004		0.24												
7/22/2004									0		0			
7/20/2004							0							
7/8/2004	0													
3/31/2004		0.21	0.006											
3/3/2004			0.009								0.22			
2/17/2004				0										
11/4/2003		0.17												
10/8/2003		0.19												
8/6/2003		0.17		0			0							
7/9/2003				0										
7/8/2003		0.14	0.016											
7/7/2003														
4/9/2003		0.14												
3/5/2003		-												
2/6/2003			0.076							0				
2/5/2003		-												
1/23/2003		0.1												
1/8/2003		-												
12/23/2002														
12/20/2002														
12/19/2002														
12/4/2002		-												
11/13/2002		-												
10/29/2002		0.05												
10/16/2002										0				
10/9/2002							0							
10/4/2002		-												
10/3/2002									0		0			
10/2/2002		0.05		0										
9/11/2002		-												
8/14/2002		0												
7/24/2002										0				
7/18/2002							0		0					
7/17/2002														
7/11/2002														
5/23/2002				0			0				0			
5/15/2002										0				
5/1/2002														
4/24/2002									0					
1/15/2002			0.7											
1/7/2002										0.02				
12/26/2001			0											
12/24/2001			0											
12/21/2001			0											
12/10/2001			0											
8/2/2001														
7/26/2001				0.02										
7/18/2001														
7/11/2001														
7/5/2001				0										
7/3/2001														
6/29/2001				0										
6/20/2001														
6/14/2001			0.57											
6/12/2001														
6/5/2001			0.52											
5/29/2001														
5/24/2001	0.02		0.5											
5/22/2001														
5/16/2001														
5/9/2001														
5/3/2001														
4/23/2001														
4/17/2001														

	Chino I Desalter Wells													
	Raw Water 1, 2, 3-Trichloropropane (TCP) Levels													
Date	**CDA1-1**	**CDA1-2**	**CDA1-3**	**CDA1-4**	**CDA1-5**	**CDA1-6**	**CDA1-7**	**CDA1-8**	**CDA1-9**	**CDA1-10**	**CDA1-11**	**CDA1-13**	**CDA1-14**	**CDA1-15**
	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)
4/9/2001														
4/4/2001														
3/28/2001														
3/20/2001														
3/15/2001														
3/7/2001														
2/28/2001														
2/15/2001	0													
2/14/2001			0	0										
1/31/2001														
1/17/2001														
1/12/2001														
1/4/2001														
12/20/2000														
12/6/2000														
11/29/2000														
11/21/2000														
11/16/2001	0.02													
11/15/2000														
11/8/2000														
10/26/2000														
10/18/2000														
9/19/2000	0		0											
5/15/2000				0										
4/27/2000			0											
AVG	0.007	0.253	0.887	0.003	0.005	0.005	0.003	0.005	0.003	0.005	0.025	0.004	0.005	0.005
Min	0.000	0.000	0.000	0.000	0.005	0.005	0.000	0.005	0.000	0.000	0.000	0.000	0.005	0.005
Max	0.020	0.590	2.500	0.020	0.005	0.005	0.005	0.005	0.005	0.020	0.220	0.005	0.005	0.005

NL	ppb	0.005
DLR	ppb	0.005