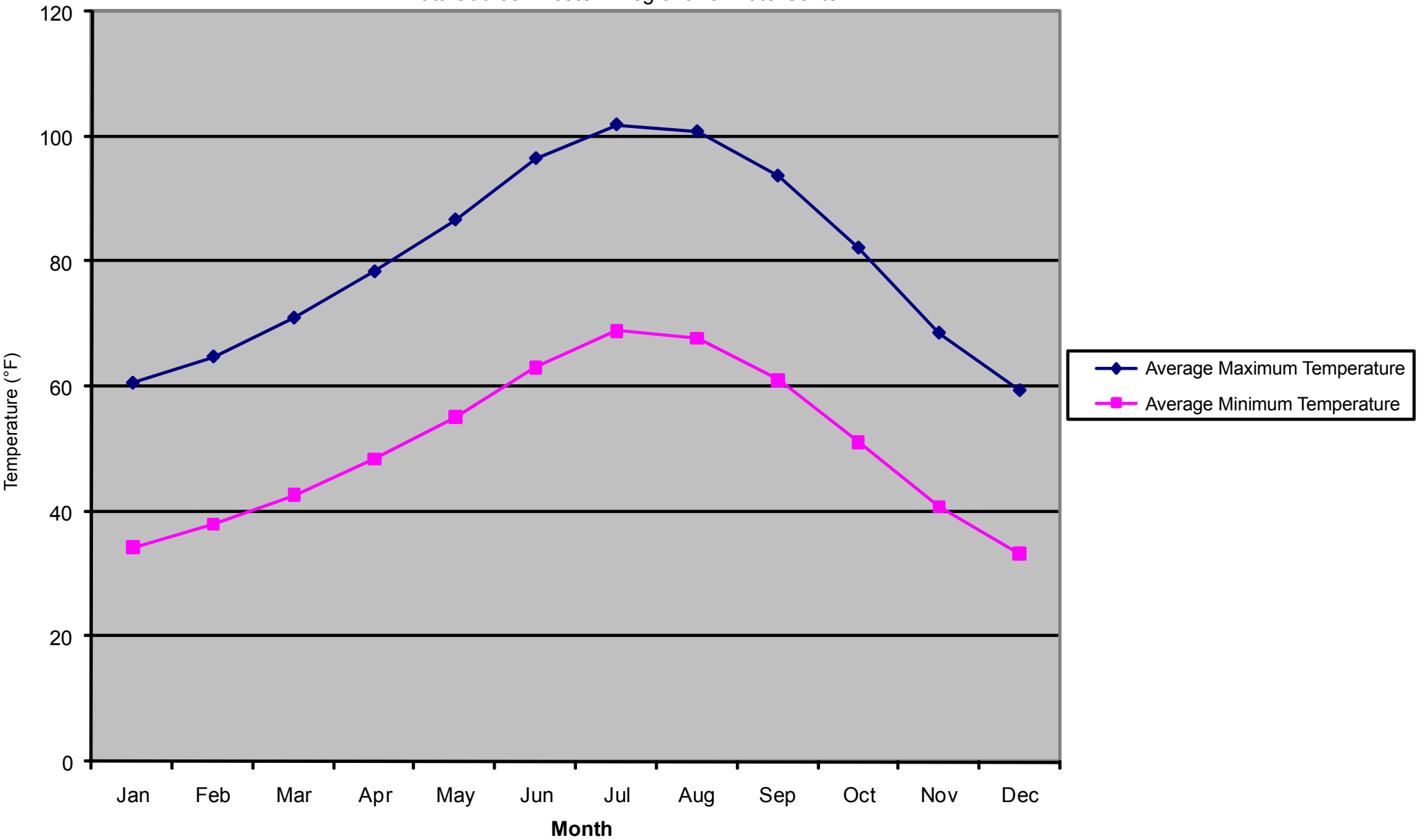
Appendix B

Graphs

Average Monthly Maximum & Minimum Temperatures (5/1/1980-12/31/2007)
Barstow Fire Station (040521)

Data Source: Western Regional Climate Center



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PHONE: (909) 390 - 2833
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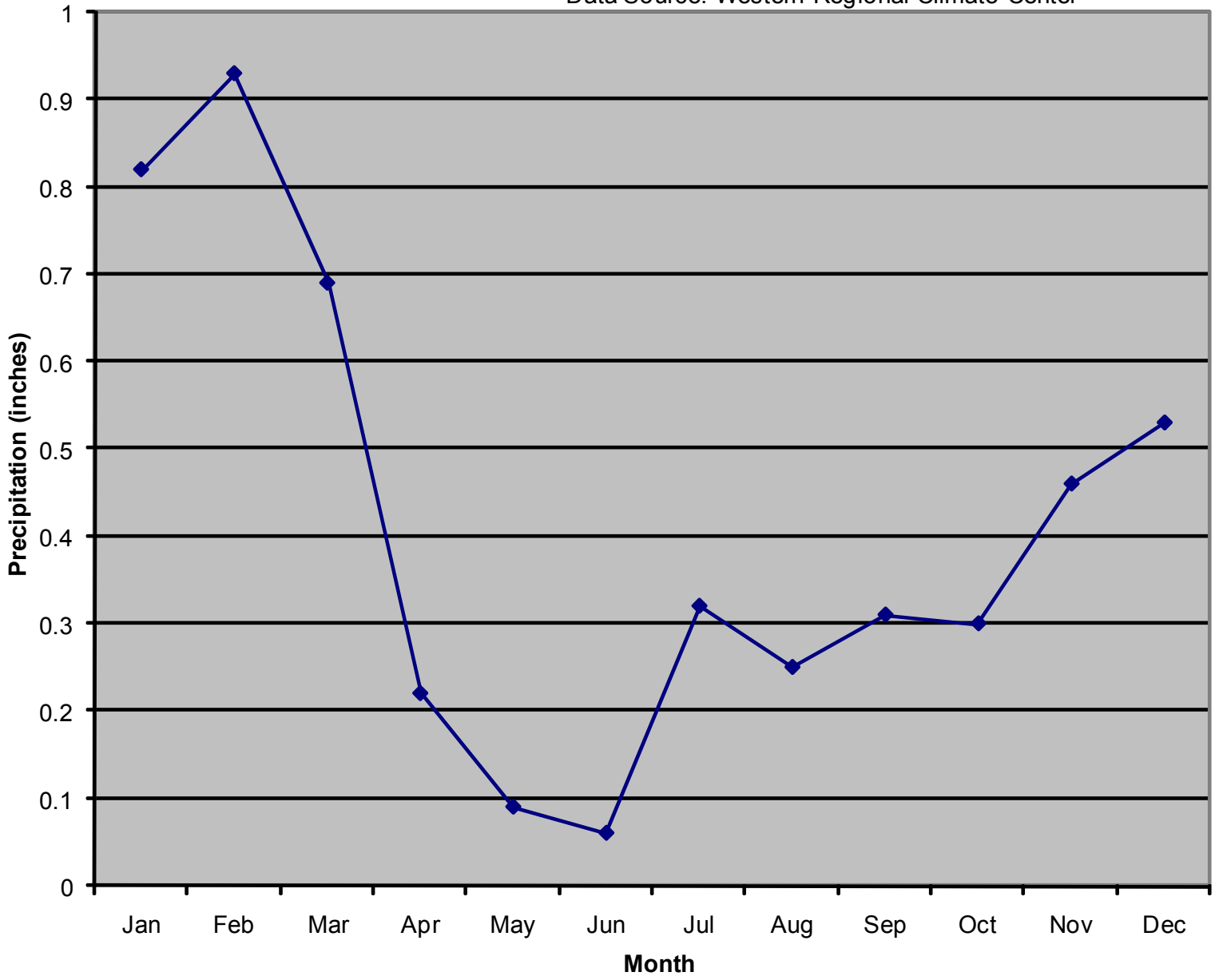
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-1_BarstowFire Station040521_AvgMax_Min_Temp_F
PROJECT Mojave Solar LLC
TITLE Graph 2-1: Barstow Fire Station 040521
Average Monthly Maximum & Minimum Temperatures

Average Monthly Rainfall (5/1/1980-12/31/2007)
Barstow Fire Station (040521)

Data Source: Western Regional Climate Center



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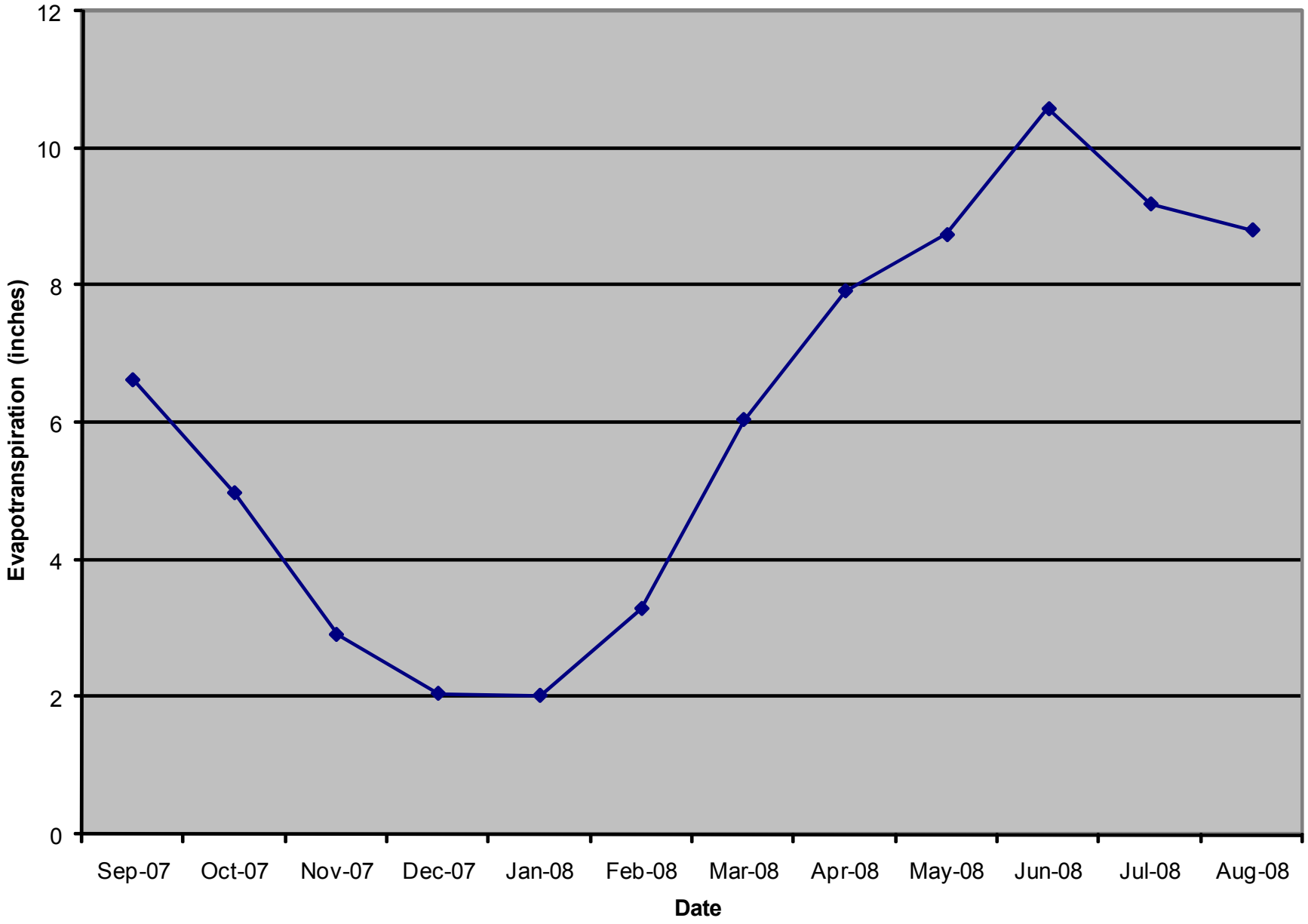
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-2_BarstowFireStation 040521_Avg_Total_Precipitation_In
PROJECT	Mojave Solar LLC

TITLE: Graph 2-2: Barstow Fire Station 040521 Average Monthly Precipitation

Average Monthly Evapotranspiration, Barstow Station NE-#134

Data Source: California Irrigation Management Information System (CIMIS)



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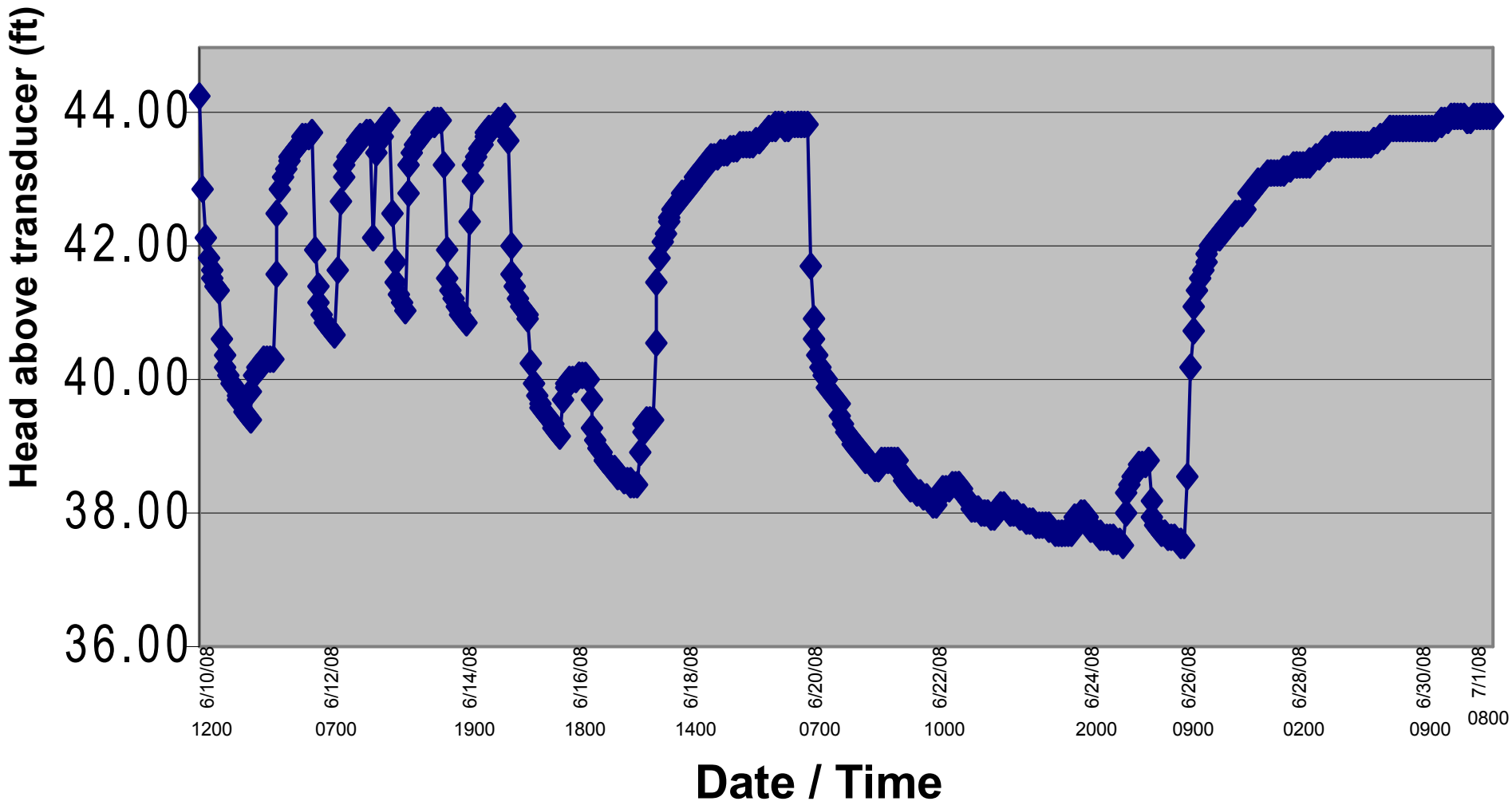
JOB NO. 271643
DATE June 2009
HL_BCM_Graph2-3_BarstowNE134_Evapotranspiration_Graph
PROJECT Mojave Solar LLC
TITLE Graph 2-3: Average Monthly Evapotranspiration

Well J

Compensated

(6/10 - 7/1)



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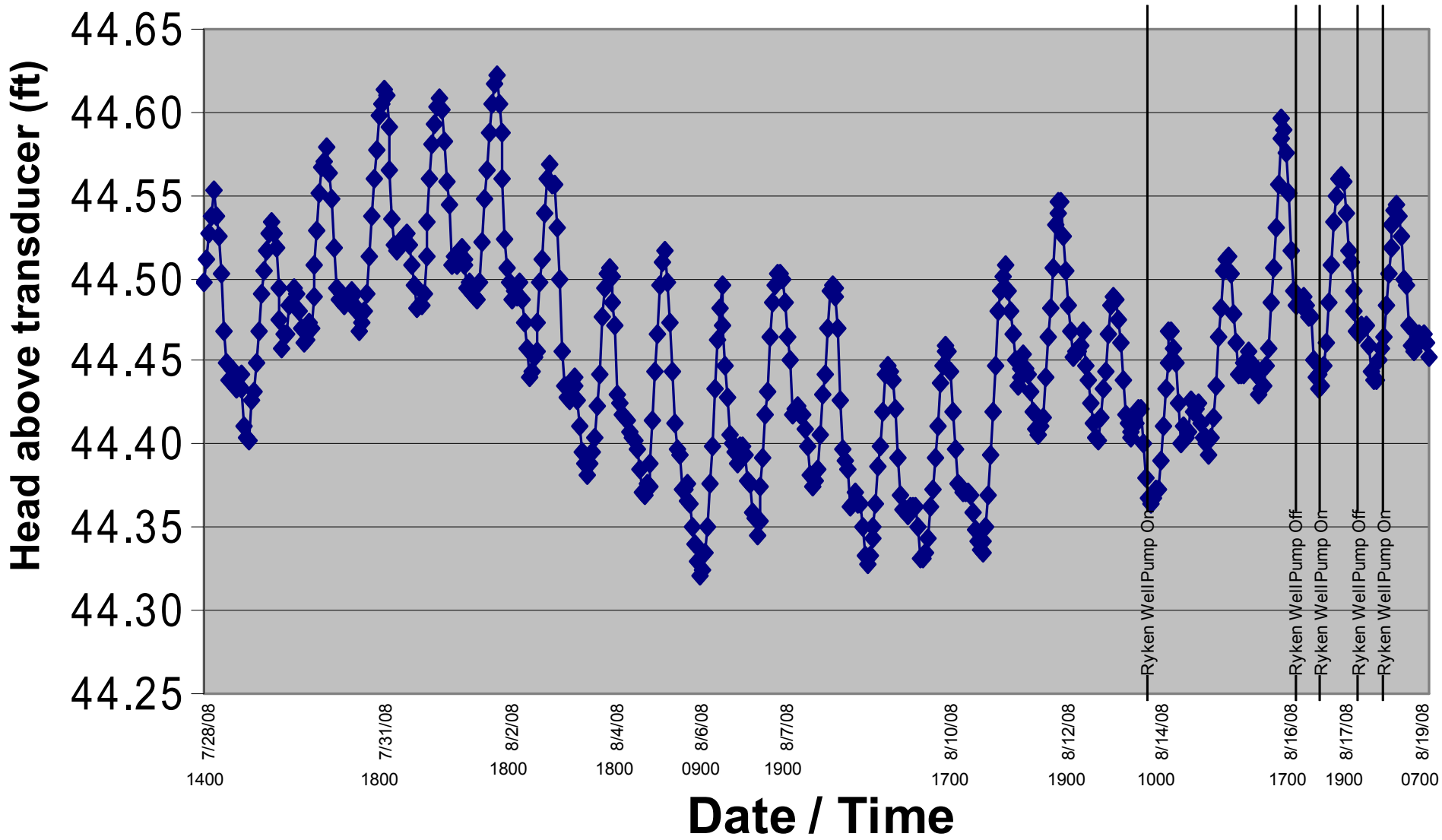
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-4_Well _J_6-10_through_7-1-08
PROJECT	Mojave Solar LLC

TITLE: Graph 2-4: Well J Hydrograph

Well J
Compensated
(7/28 - 8/19)



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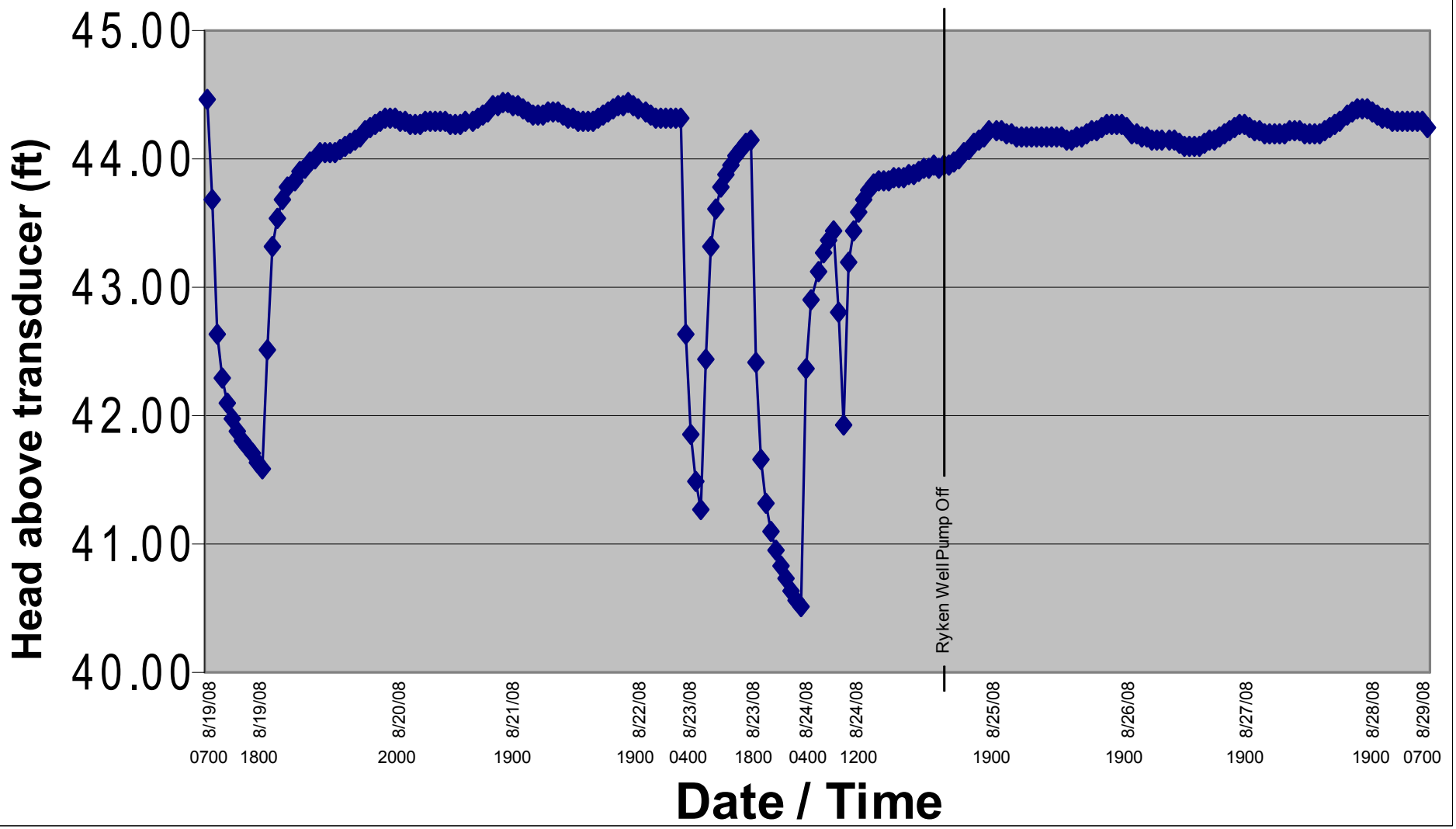
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-5_Well _J_7-28_through_8-19-08
PROJECT Mojave Solar LLC
TITLE Graph 2-5: Well J Hydrograph

Well J

Compensated

(8/19 - 8/29)



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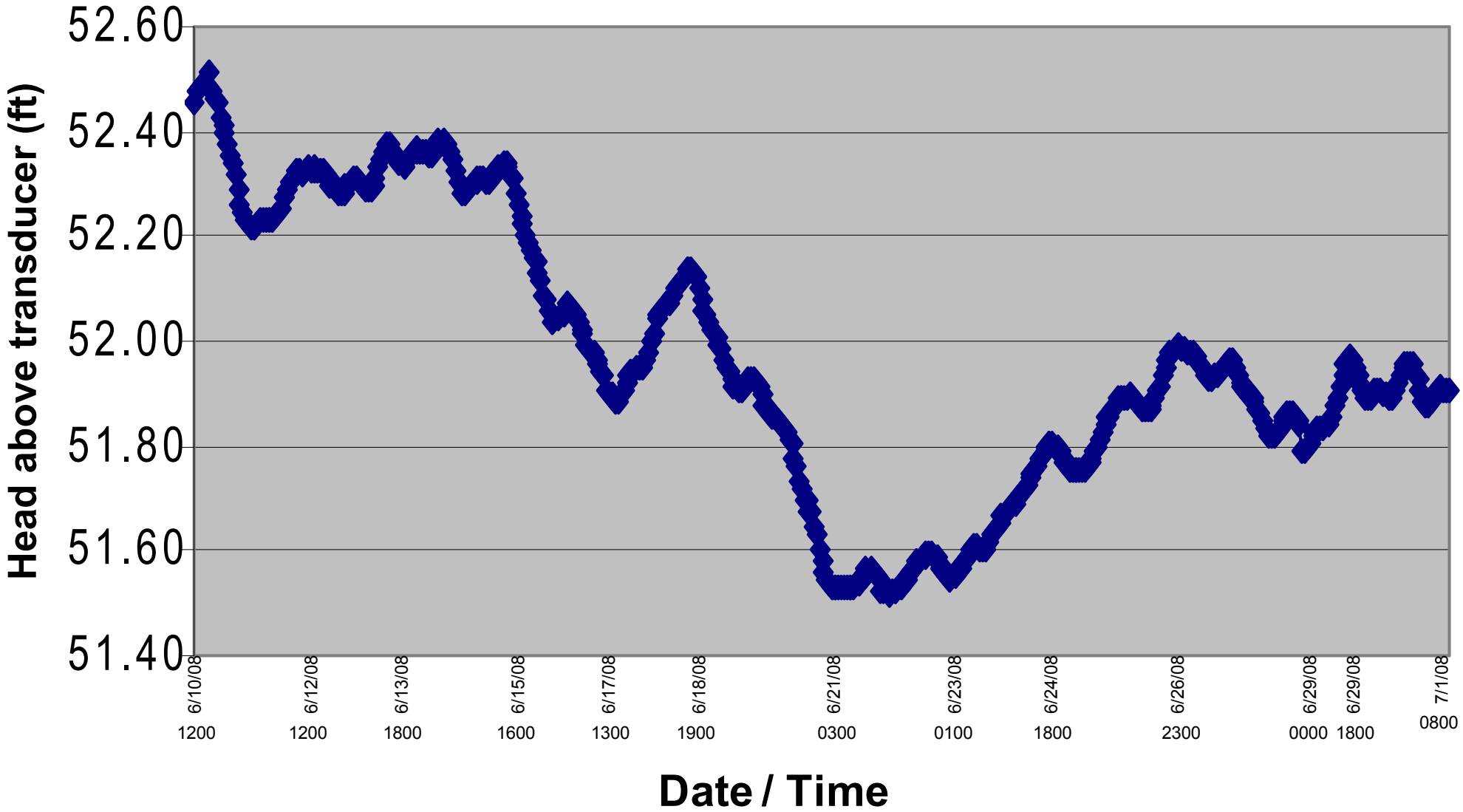
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-6_Well _J_8-19_through_8-29-08
PROJECT	Mojave Solar LLC
TITLE	Graph 2-6: Well J Hydrograph

Well M
Compensated
(6/10 - 7/1)



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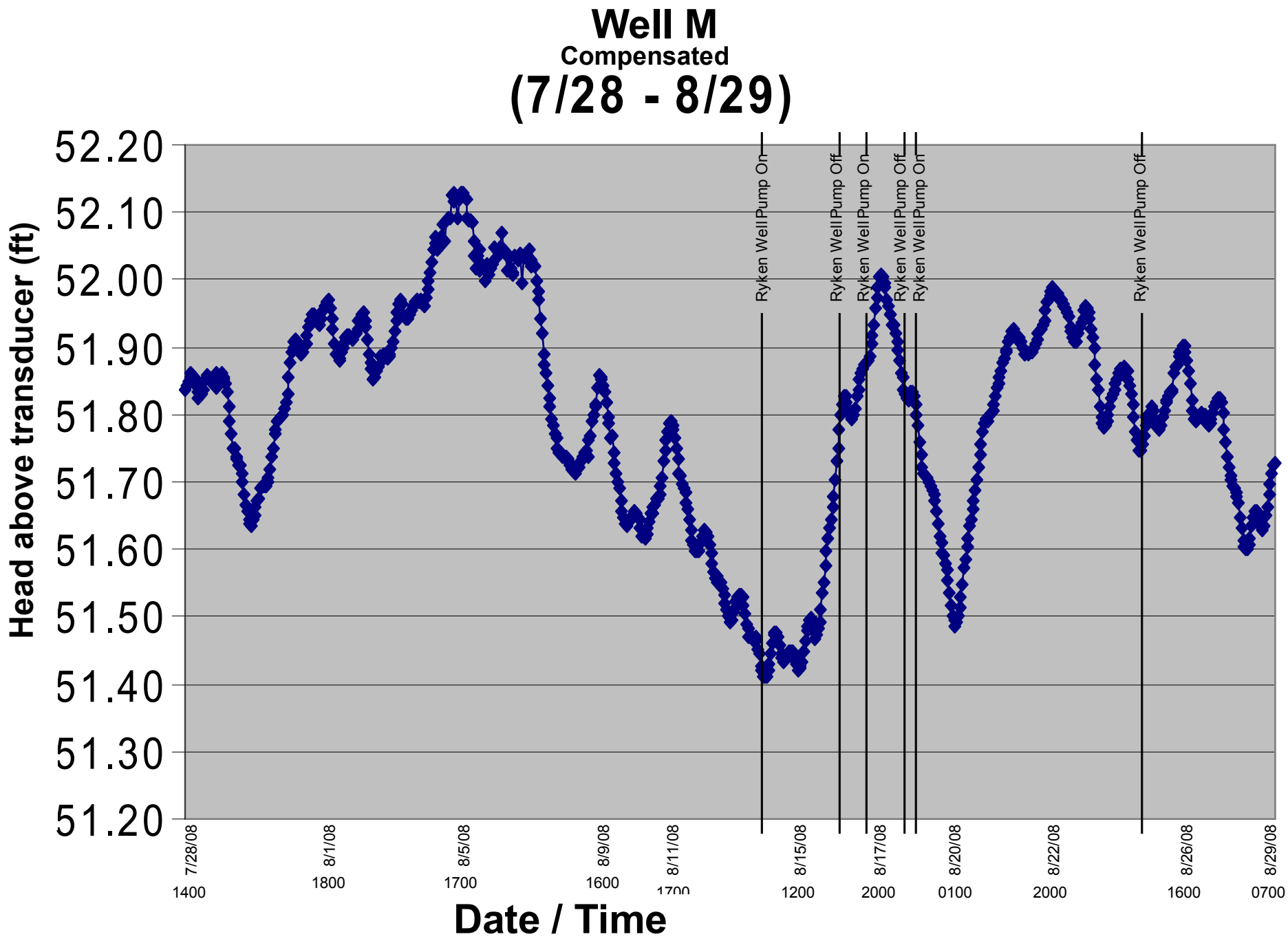
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-7_Well _M_6-10_through_7-1-08
PROJECT	Mojave Solar LLC
TITLE	Graph 2-7: Well M Hydrograph



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PHONE: (909) 390 - 2833
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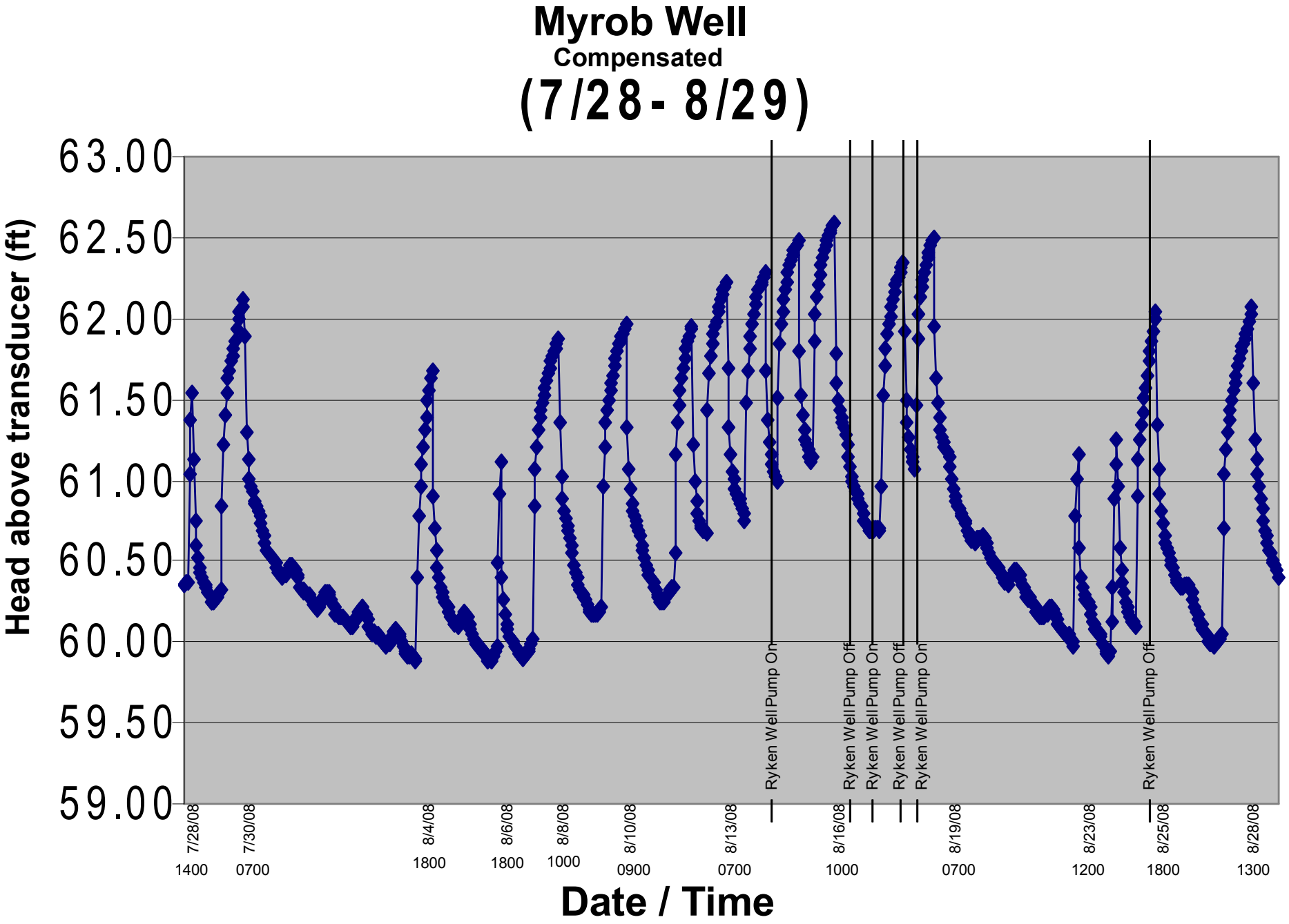
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-8_Well_M_7-28_through_8-29-08
PROJECT	Mojave Solar LLC
TITLE	Graph 2-8: Well M Hydrograph



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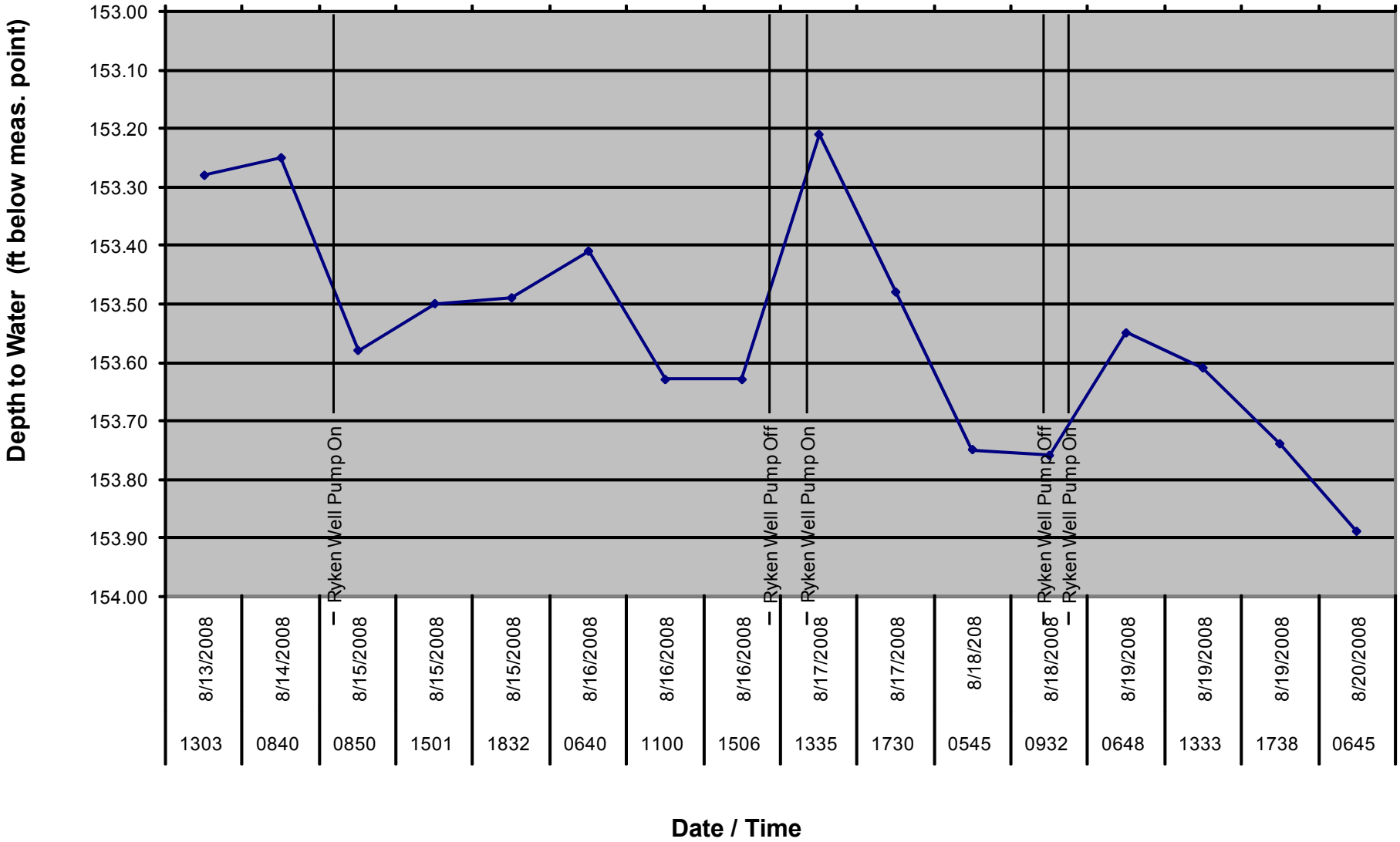
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-9_Myrob_Well_7-28_through_8-29-08
PROJECT	Mojave Solar LLC
TITLE	Graph 2-9: Myrob Well Hydrograph

Inactive Green House Well (manual dtw measurements)

(Ryken Well Discharge = 1,143gpm) (r = 2,095 ft.)



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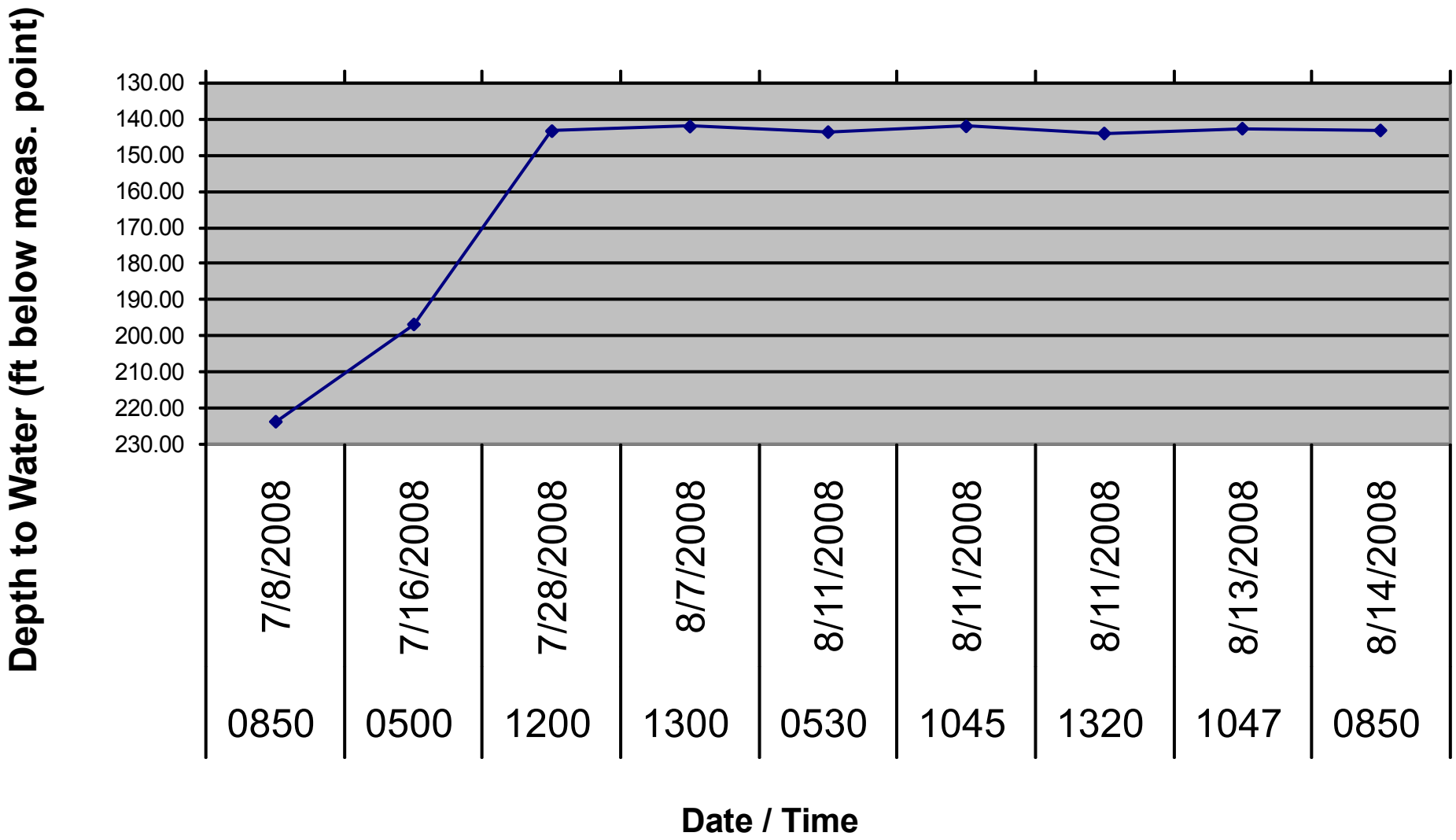
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-10_ Greenhouse_Well_DTW_Graph
PROJECT	Mojave Solar LLC
TITLE	Graph 2-10: Green House Well Hydrograph

Ryken Well (manual dtw measurements)

(Ryken Well Discharge = 1,143gpm) (r = 0.58 ft)



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PHONE: (909) 390 - 2833
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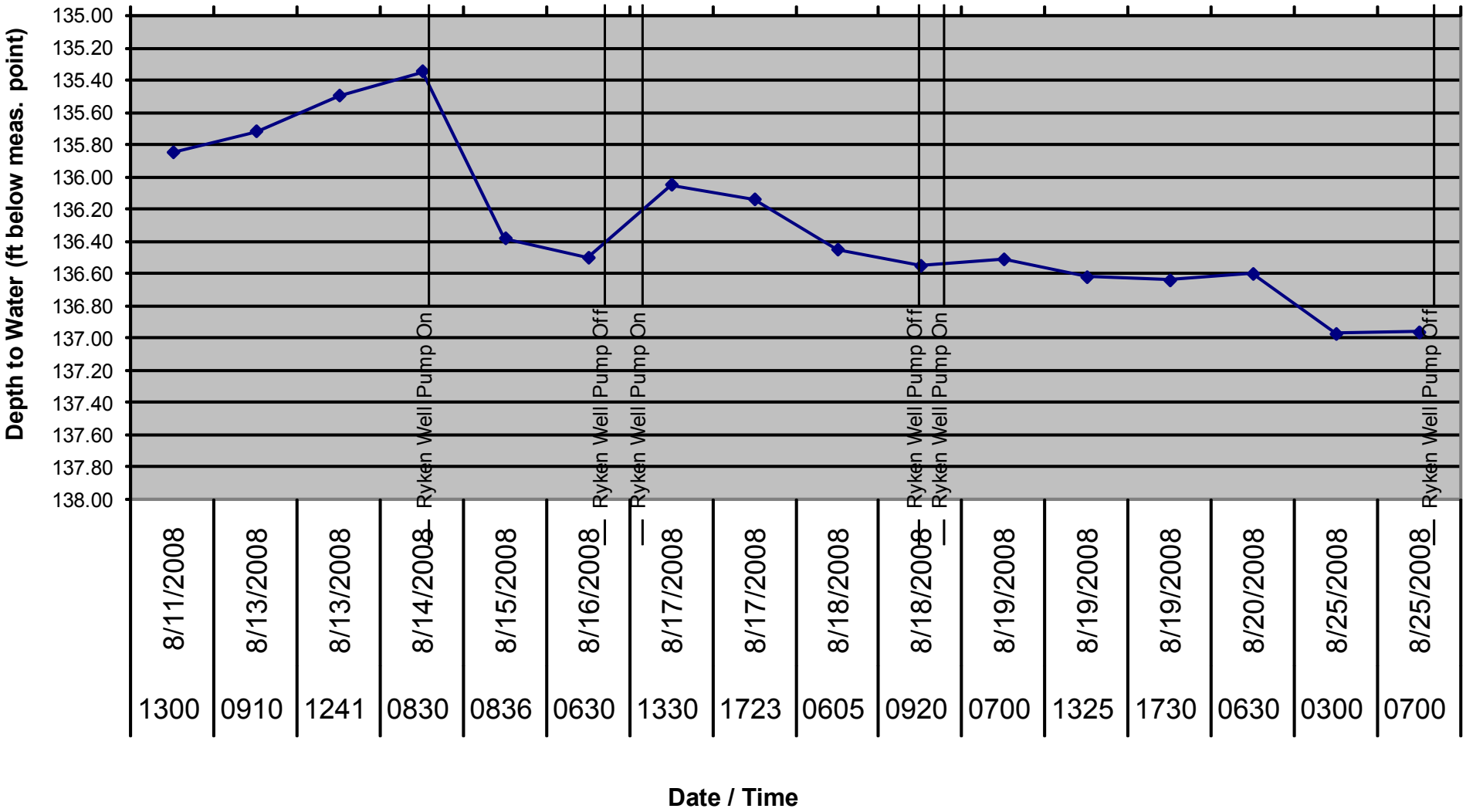
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-11_Ryken_Well_DTW_Graph
PROJECT Mojave Solar LLC
TITLE Graph 2-11: Ryken Well Hydrograph

Wetland Supply Well (manual dtw measurements)

(Ryken Well Discharge = 1,143gpm) (r = 3,149 ft.)



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PHONE: (909) 390 - 2833
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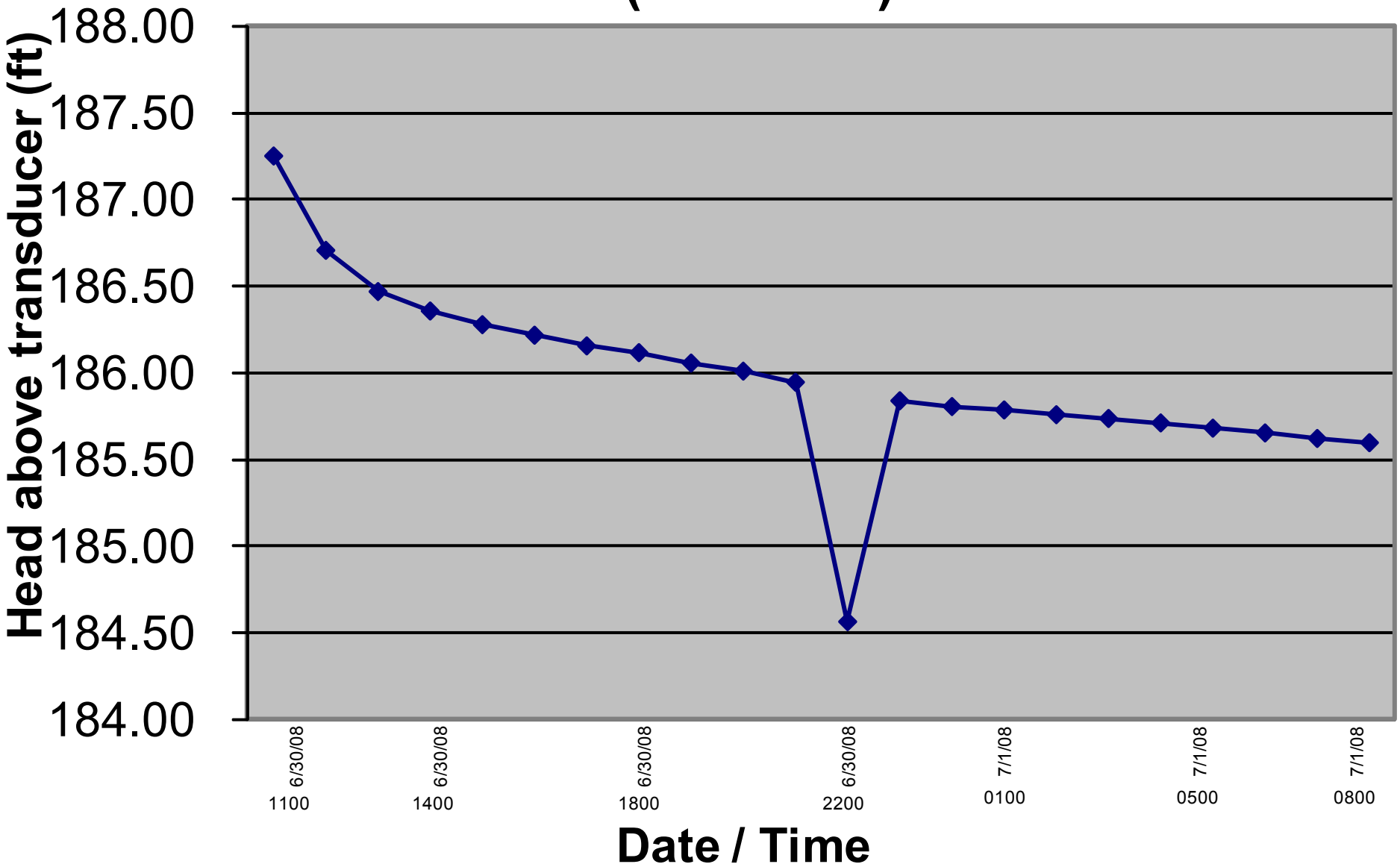
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-12_Wetland Supply_Well_DTW_Graph
PROJECT	Mojave Solar LLC
TITLE	Graph 2-12: Wetland Supply Well Hydrograph

Hayfarm Well

Compensated

(6/30 - 7/1)



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PHONE: (909) 390 - 2833
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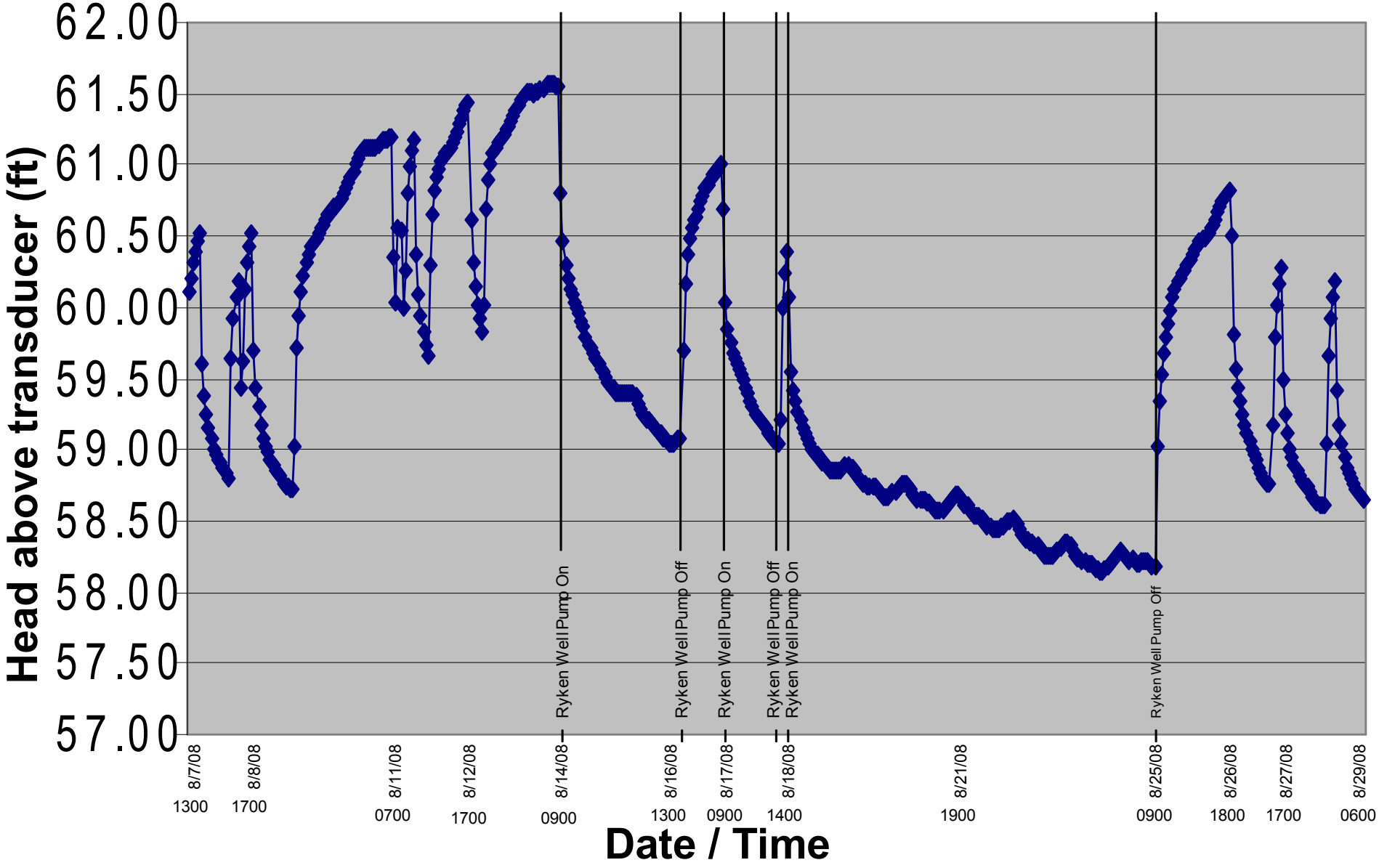
JOB NO:	271643
DATE:	June 2009
FILE:	HL_BCM_Graph2-13_Hay_Farm_Well_6-30_through_7-1-08
PROJECT:	Mojave Solar LLC

TITLE: Graph 2-13: Hay Farm Well Hydrograph

Hayfarm Well

Compensated

(8/7 - 8/29)



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PHONE: (909) 390 - 2833
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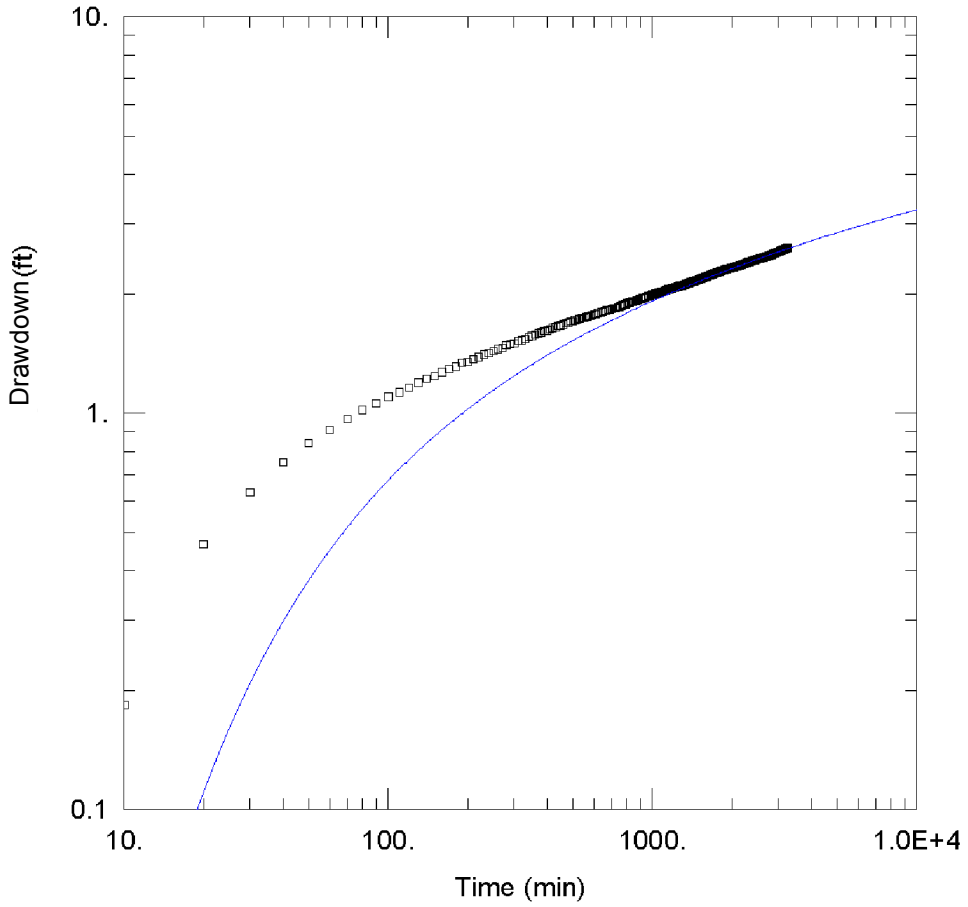
JOB NO.	271643
DATE	June 2009
FILE	HL_BCM_Graph2-14_Hay_Farm_Well_8-7_through_8-29-08
PROJECT	Mojave Solar LLC

TITLE: Graph 2-14: Hay Farm Well Hydrograph



PUMPING PERIOD 2

Data Set: I:\...\HF T1 Theis.aqt
Pump on: Aug 14, 2008 Pump off: Aug 16, 2008

PROJECT INFORMATION

Company: Layne GeoSciences
Client: Mojave Solar LLC
Project: 271643.02.20
Location: Harper Lake
Test Well: Ryken Well

Q = 1,143 gpm
r = 759 ft
Solution based on observation well transducer data
Observation well swl: 145.50 ft below measuring pt.
Observation well groundwater static elevation: 1,895.84 ft amsl

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Ryken Well	2	2

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Hay Farm Well	663	380

SOLUTION

Aquifer Model: Unconfined
Solution Method: Theis

T = 2.234E+5 gal/day/ft
Kz/Kr = 0.003942
S = 0.003121
b = 267 ft

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PHONE: (909) 390 - 2833
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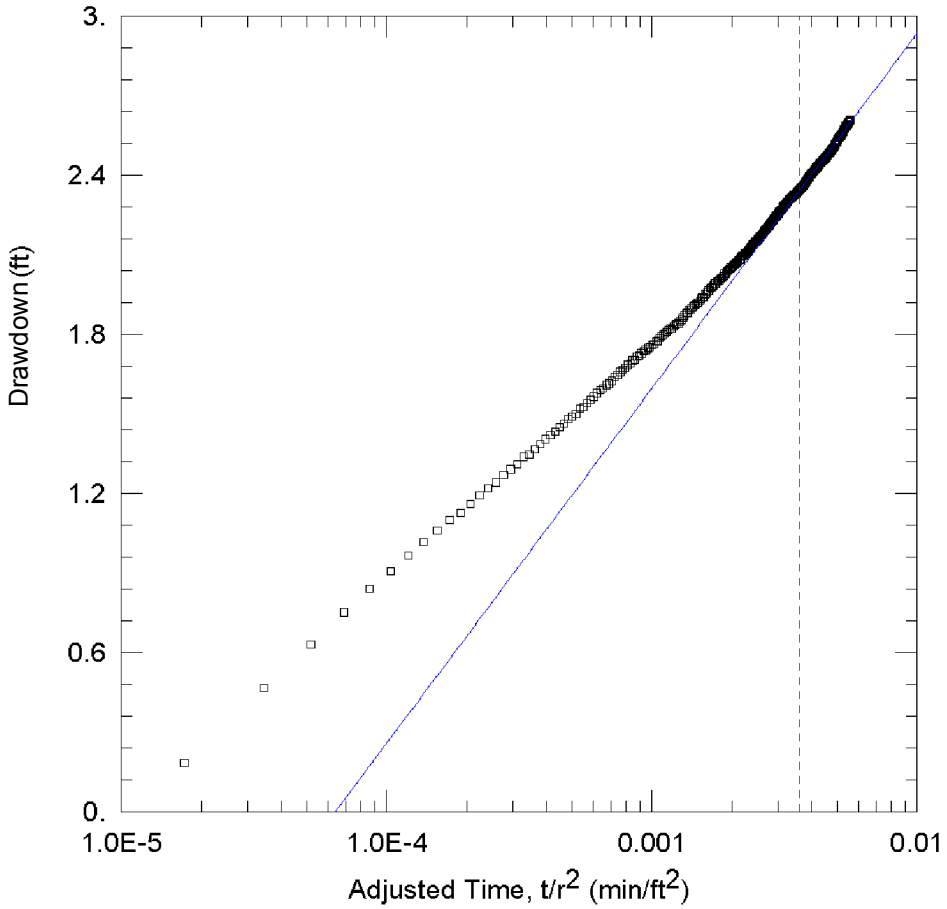
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph 2-15_HF_T1_Theis
PROJECT Mojave Solar LLC
TITLE Graph 2-15: Time - Drawdown Theis



PUMPING PERIOD 2

Data Set: I:\...\HF T1 Cooper-Jacob.aqt
Pump on: Aug 14, 2008 Pump off: Aug 16, 2008

PROJECT INFORMATION

Company: Layne GeoSciences
Client: Mojave Solar LLC
Project: 271643.02.20
Location: Harper Lake
Test Well: Ryken Well

Q = 1,143 gpm
r = 759 ft
Solution based on observation well transducer data
Observation well swl: 145.50 ft below measuring pt.(near ground surface)
Observation well groundwater static elevation: 1,895.84 ft amsl

AQUIFER DATA

Saturated Thickness: 267. ft Anisotropy Ratio (Kz/Kr): 0.003942

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Ryken Well	2	2

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Hay Farm Well	663	380

SOLUTION

Aquifer Model: Unconfined Solution Method: Cooper-Jacob

T = 2.253E+5 gal/day/ft S = 0.003009

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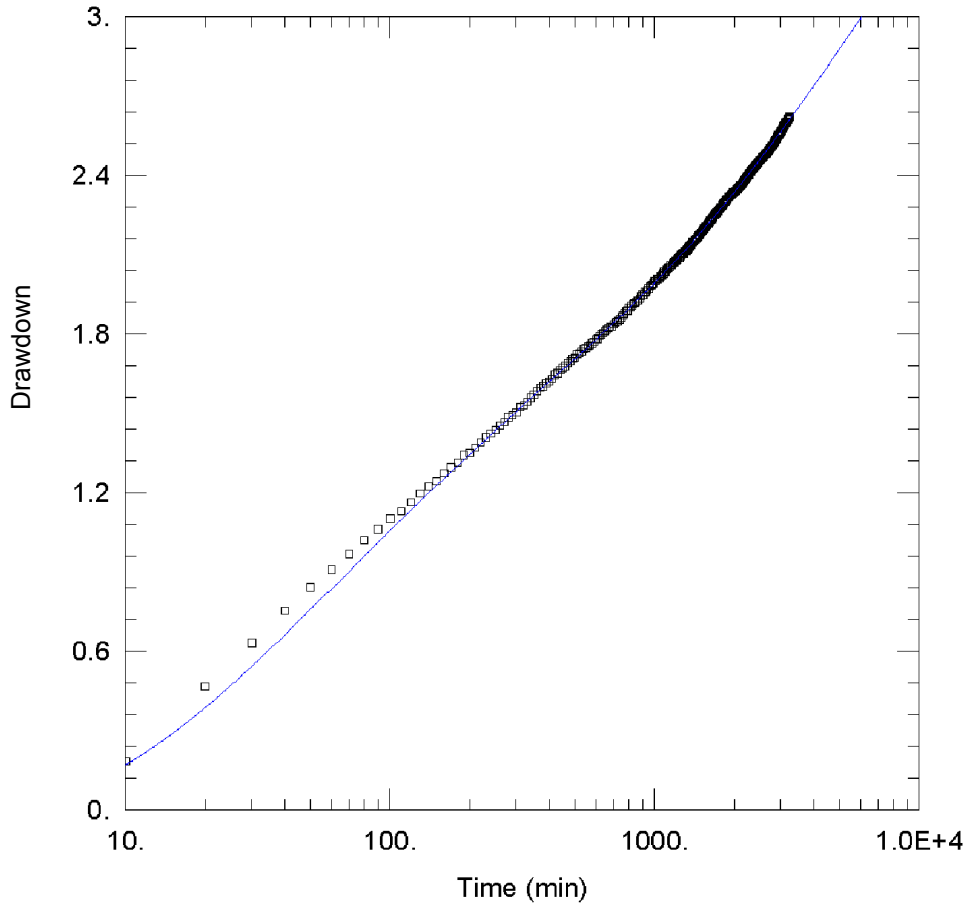
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-16_HF_T1_Cooper_Jacob
PROJECT Mojave Solar LLC
TITLE Graph 2-16: Time - Drawdown Cooper - Jacob



PUMPING PERIOD 2

Data Set: I:\...\HF T1 Neuman.aqt
Pump on: Aug 14, 2008 Pump off: Aug 16, 2008

PROJECT INFORMATION

Company: Layne GeoSciences
Client: Mojave Solar LLC
Project: 271643.02.20
Location: Harper Lake
Test Well: Ryken Well

Q = 1,143 gpm
r = 759 ft
Solution based on observation well transducer data
Observation well swl: 145.50 ft below measuring pt.(near ground surface)
Observation well groundwater static elevation: 1,895.84 ft amsl

AQUIFER DATA

Saturated Thickness: 267 ft

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Ryken Well	2	2

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Hay Farm Well	663	380

SOLUTION

Aquifer Model: Unconfined
Solution Method: Neuman

T = 1.992E+5 gal/day/ft
Sy = 0.003532
S = 0.001084
ß = 0.03287

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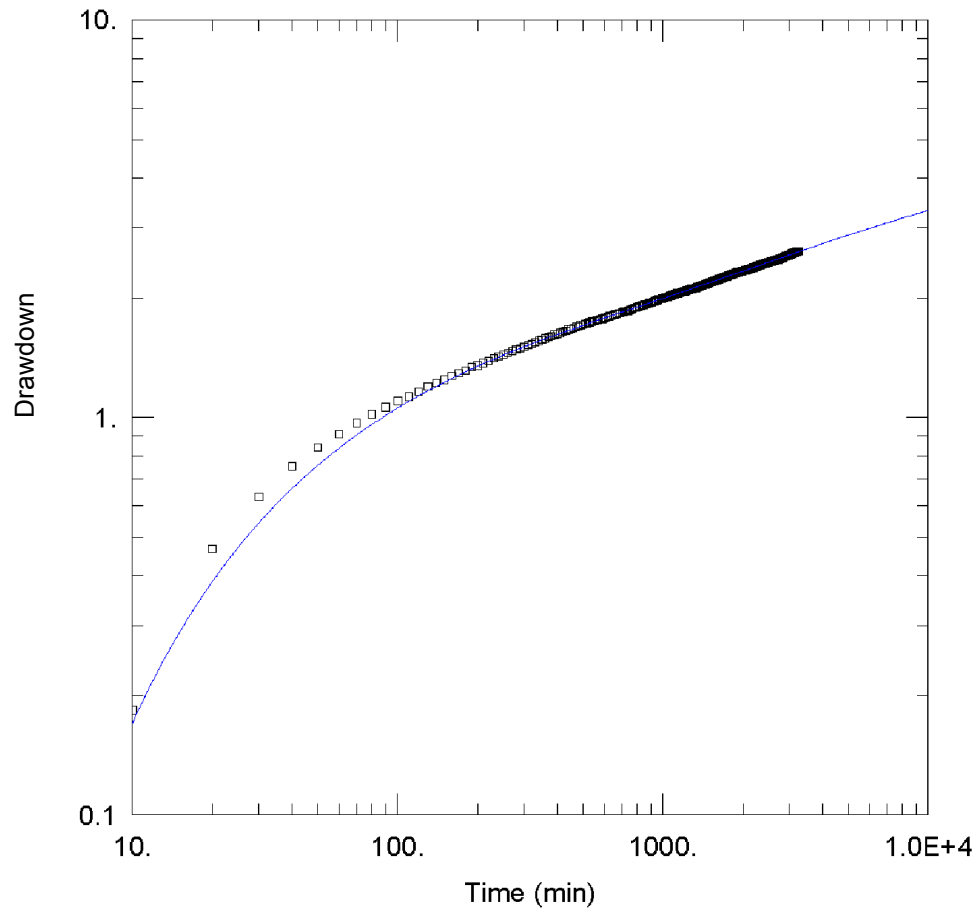
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-17_HF_T1_Newman
PROJECT Mojave Solar LLC
TITLE Graph 2-17: Time - Drawdown Neuman



PUMPING PERIOD 2

Data Set: I:\...\HF T1 Moench.aqt
Pump on: Aug 14, 2008 Pump off: Aug 16, 2008

PROJECT INFORMATION

Company: Layne GeoSciences
Client: Mojave Solar LLC
Project: 271643.02.20
Location: Harper Lake
Test Well: Ryken Well

Q = 1,143 gpm
r = 759 ft
Solution based on observation well transducer data
Observation well swl: 145.50 ft below measuring pt.(near ground surface)
Observation well groundwater static elevation: 1,895.84 ft amsl

AQUIFER DATA

Saturated Thickness: 267 ft Anisotropy Ratio (Kz/Kr): 0.004042

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Ryken Well	2	2

Observation Wells

Well Name	X (ft)	Y (ft)
Hay Farm Well	663	380

SOLUTION

Aquifer Model: Unconfined Solution Method: Moench

T = 1.992E+5 gal/day/ft
Sy = 0.003532
Sw = 0.

S = 0.001084
ß = 0.03287
r(w) = 0.58 ft

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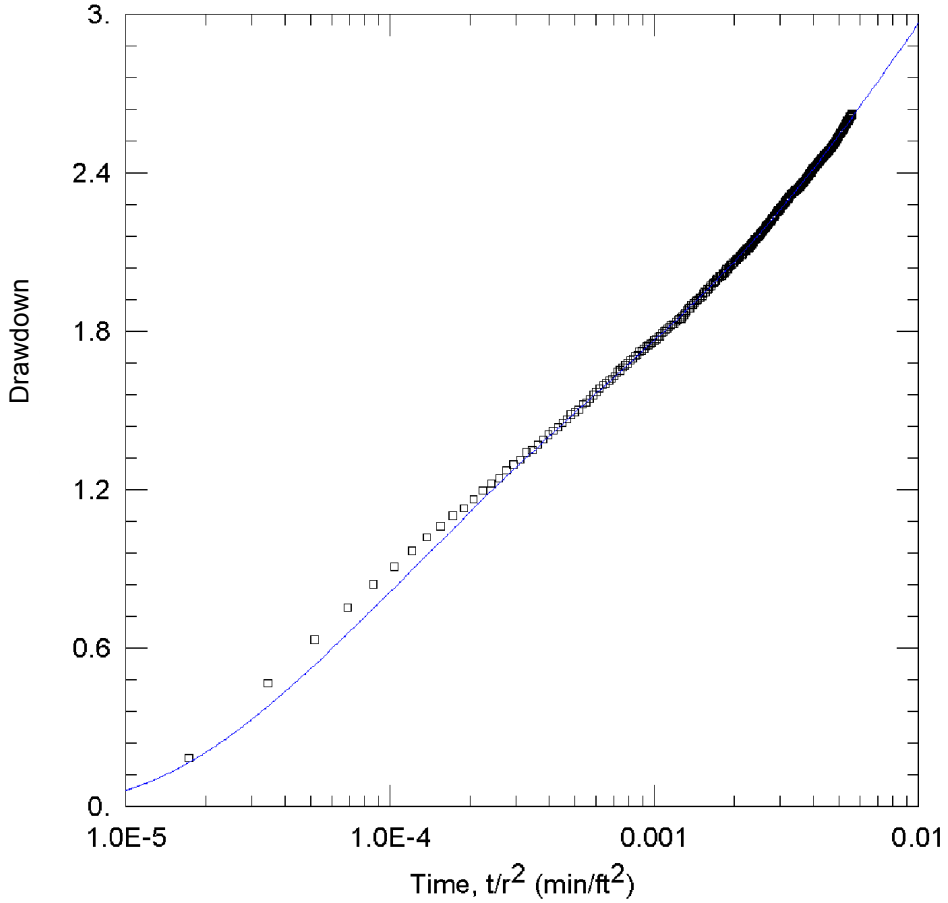
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph 2-18_HF_T1_Moench
PROJECT Mojave Solar LLC
TITLE Graph 2-18: Time - Drawdown Moench



PUMPING PERIOD 2

Data Set: I:\...\HF T1 Tartakovsky-Neuman.aqt
Pump on: Aug 14, 2008 Pump off: Aug 16, 2008

PROJECT INFORMATION

Company: Layne GeoSciences
Client: Mojave Solar LLC
Project: 271643.02.20
Location: Harper Lake
Test Well: Ryken Well

Q = 1,143 gpm
r = 759 ft
Solution based on observation well transducer data
Observation well swl: 145.50 ft below measuring pt.(near ground surface)
Observation well groundwater static elevation: 1,895.84 ft amsl

AQUIFER DATA

Saturated Thickness: 267 ft
Anisotropy Ratio (Kz/Kr): 0.003942

WELL DATA

Pumping Wells

Well Name	X (ft)	Y (ft)
Ryken Well	2	2

Observation Wells

Well Name	X (ft)	Y (ft)
▫ Hay Farm Well	663	380

SOLUTION

Aquifer Model: Unconfined
Solution Method: Tartakovsky-Neuman

T = 1.996E+5 gal/day/ft
Sy = 0.003488
kD = 1000.

S = 0.001108
Kz/Kr = 0.003942

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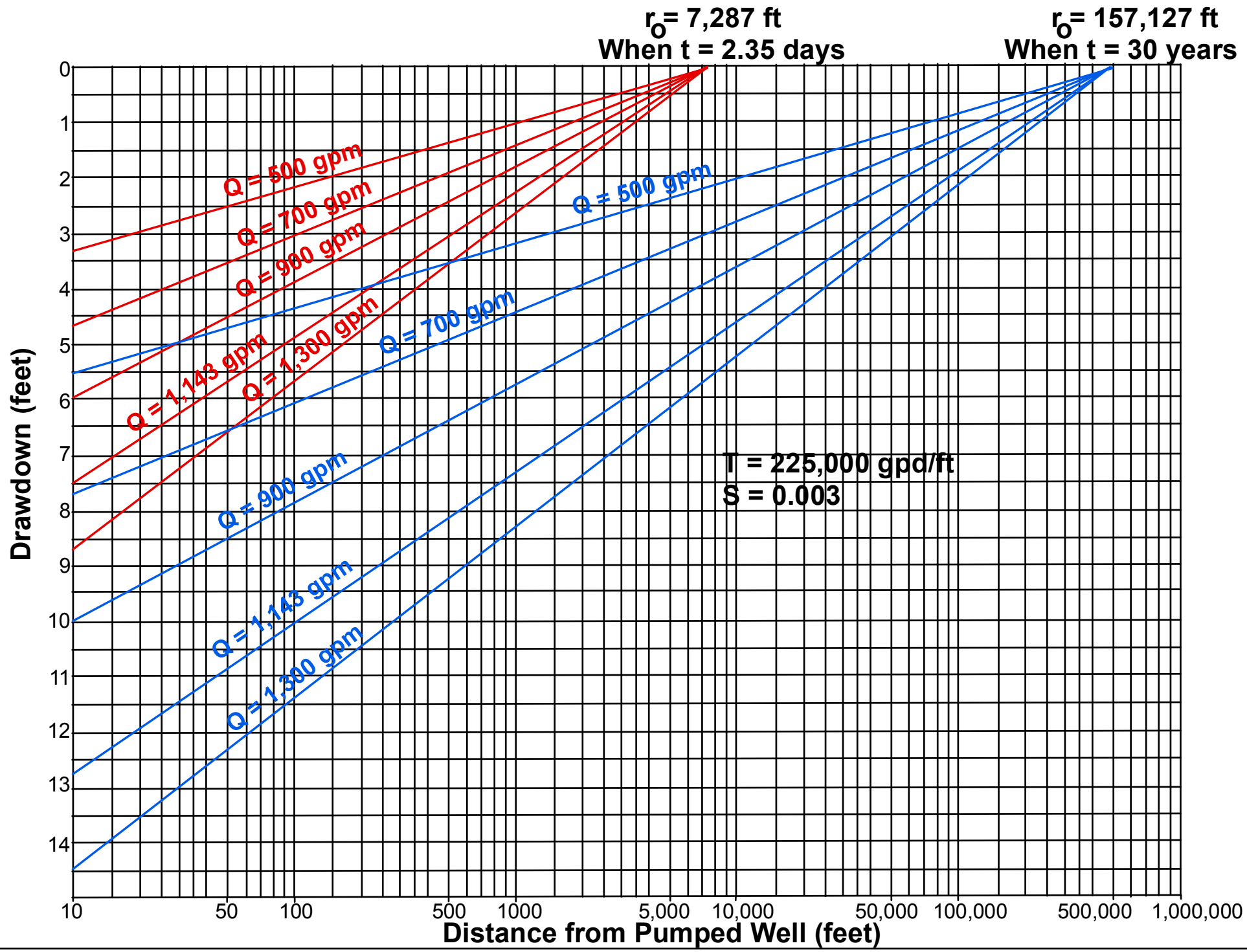
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-19_HF_T1_Tartakovsky_Neuman
PROJECT Mojave Solar LLC
TITLE Graph 2-19: Time - Drawdown Tartakovsky Neuman



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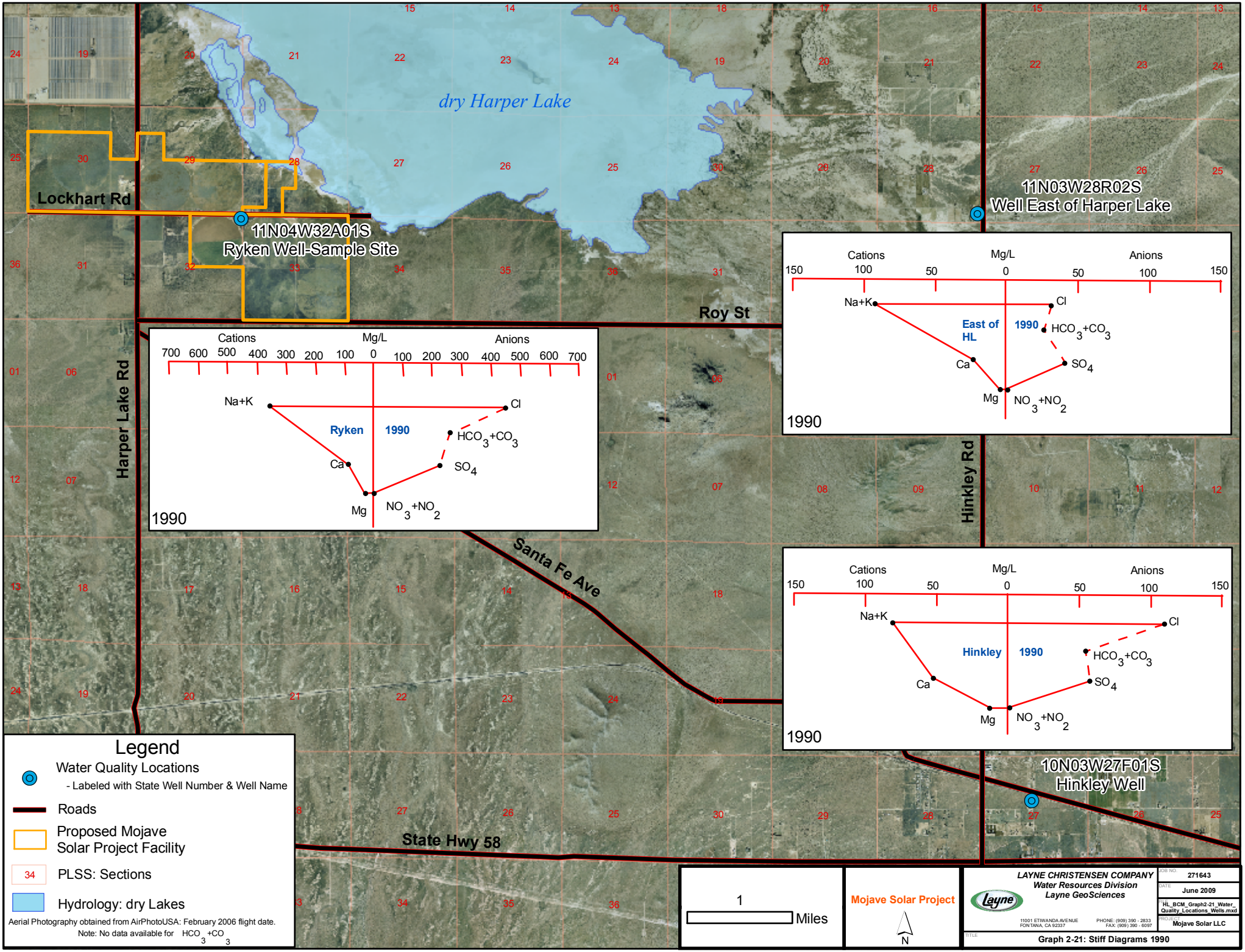
JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-20_dd
PROJECT Mojave Solar LLC
TITLE Graph 2-20: Distance - Drawdown


dry Harper Lake
Lockhart Rd
11N04W32A01S
Ryken Well-Sample Site
11N03W28R02S
Well East of Harper Lake
Roy St
Harper Lake Rd
Hinkley Rd
Santa Fe Ave
State Hwy 58
10N03W27F01S
Hinkley Well
Cations
Mg/L
Anions
Na+K
Cl
Ca
Mg
HCO3+CO3
SO4
NO3+NO2
Ryken
1990
East of HL
Hinkley
Legend
Water Quality Locations
- Labeled with State Well Number & Well Name
Roads
Proposed Mojave Solar Project Facility
PLSS: Sections
Hydrology: dry Lakes
Aerial Photography obtained from AirPhotoUSA: February 2006 flight date.
Note: No data available for HCO3+CO3
1
Miles
Mojave Solar Project
N
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Water Resources Division
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11001 ETIWANDA AVENUE
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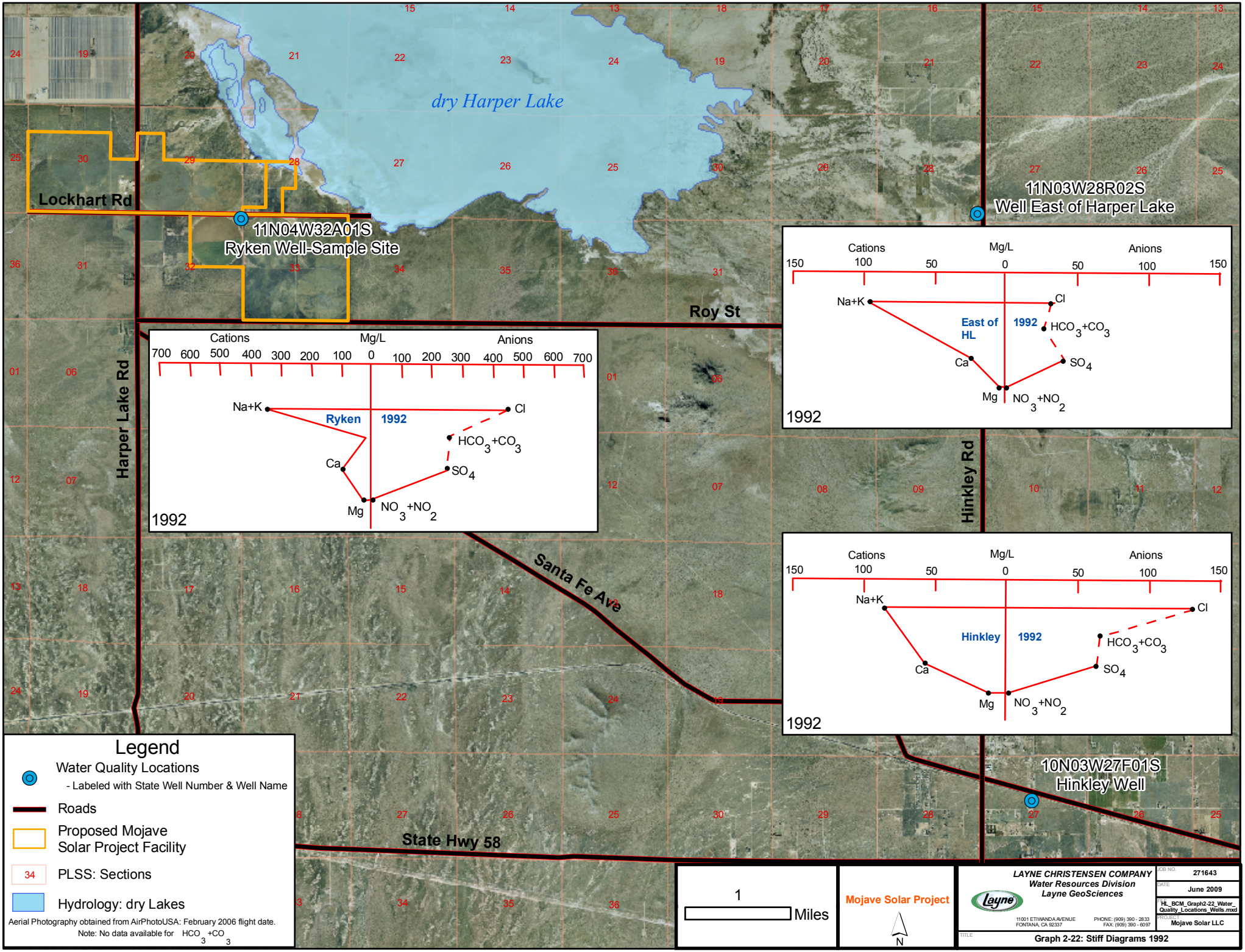
PHONE: (909) 390 - 2833
FAX: (909) 390 - 6097
JOB NO. 271643
DATE June 2009
HL_BCM_Graph2-21_Water_Quality_Locations_Wells.mxd
PROJECT Mojave Solar LLC
TITLE Graph 2-21: Stiff Diagrams 1990


dry Harper Lake
Lockhart Rd
11N04W32A01S
Ryken Well-Sample Site
11N03W28R02S
Well East of Harper Lake
Roy St
Harper Lake Rd
Hinkley Rd
Santa Fe Ave
State Hwy 58
10N03W27F01S
Hinkley Well
Cations
Mg/L
Anions
Na+K
Cl
Ryken
1992
HCO3+CO3
Ca
SO4
Mg
NO3+NO2
East of HL
Hinkley
Legend
Water Quality Locations
- Labeled with State Well Number & Well Name
Roads
Proposed Mojave Solar Project Facility
PLSS: Sections
Hydrology: dry Lakes
Aerial Photography obtained from AirPhotoUSA: February 2006 flight date.
Note: No data available for HCO3+CO3
1
Miles
Mojave Solar Project
N
LAYNE CHRISTENSEN COMPANY
Water Resources Division
Layne GeoSciences
11001 ETIWANDA AVENUE
FONTANA, CA 92337
PHONE: (909) 390 - 2833
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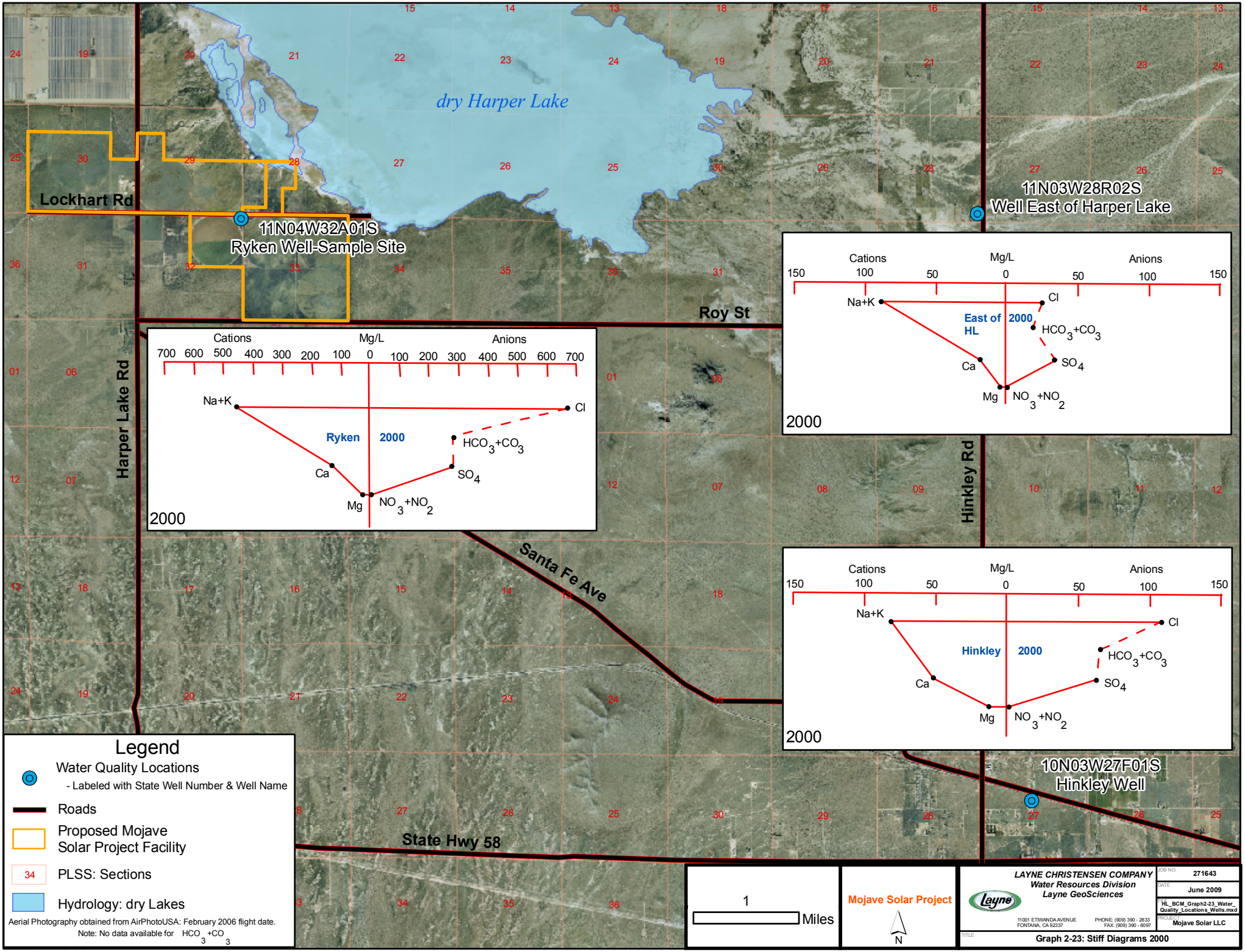
JOB NO. 271643
DATE June 2009
HL_BCM_Graph2-22_Water_Quality_Locations_Wells.mxd
PROJECT Mojave Solar LLC
TITLE Graph 2-22: Stiff Diagrams 1992


dry Harper Lake
Lockhart Rd
11N04W32A01S
Ryken Well-Sample Site
11N03W28R02S
Well East of Harper Lake
Roy St
Harper Lake Rd
Hinkley Rd
Santa Fe Ave
State Hwy 58
10N03W27F01S
Hinkley Well
Cations
Mg/L
Anions
Na+K
Cl
Ca
Mg
HCO_3+CO_3
SO_4
NO_3+NO_2
Ryken 2000
East of HL 2000
Hinkley 2000
2000
Legend
Water Quality Locations
- Labeled with State Well Number & Well Name
Roads
Proposed Mojave Solar Project Facility
PLSS: Sections
Hydrology: dry Lakes
Aerial Photography obtained from AirPhotoUSA: February 2006 flight date.
Note: No data available for HCO_3+CO_3
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Miles
Mojave Solar Project
N
LAYNE CHRISTENSEN COMPANY
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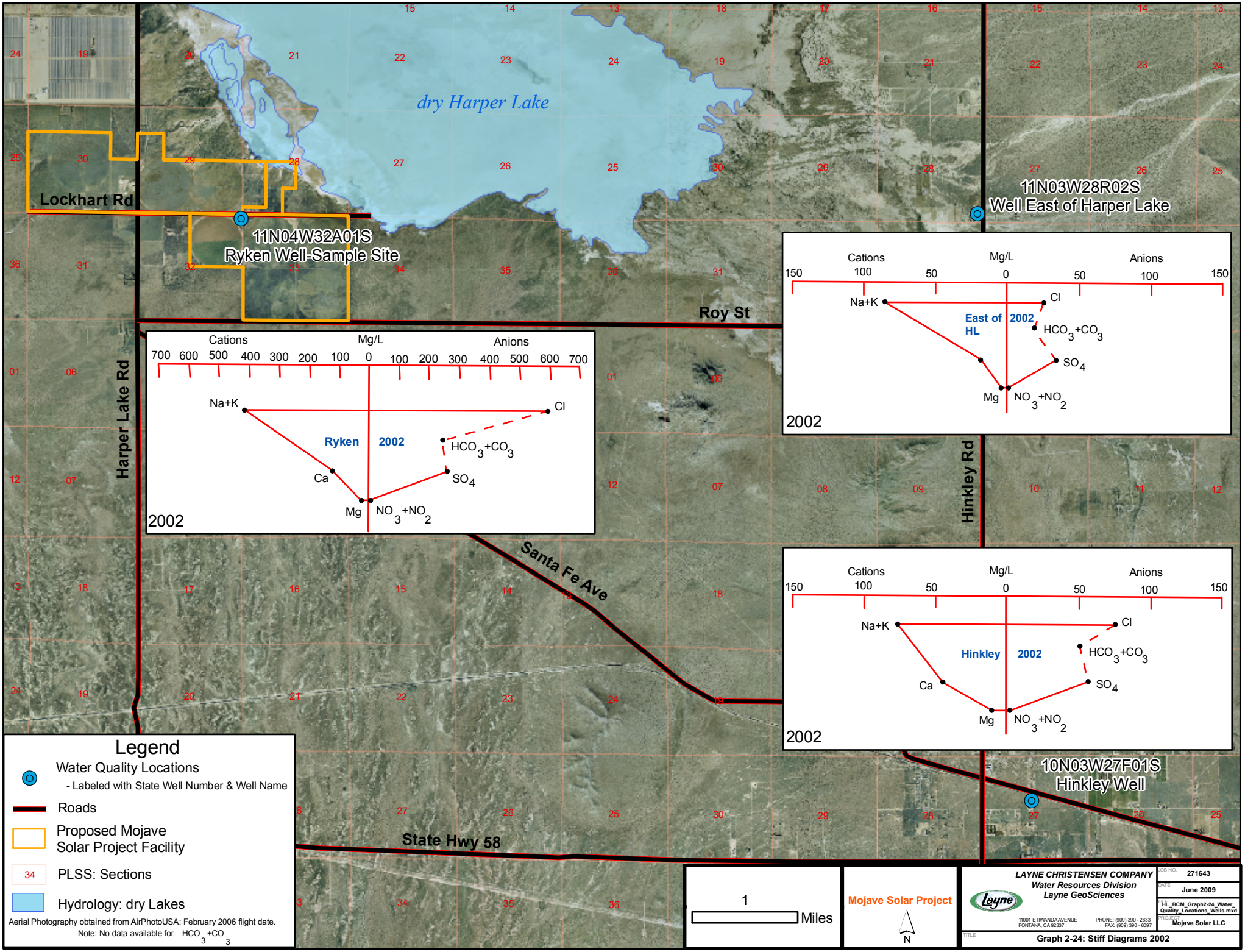
JOB NO. 271643
DATE June 2009
HL_BCM_Graph2-23_Water_Quality_Locations_Wells.mxd
PROJECT Mojave Solar LLC
TITLE Graph 2-23: Stiff Diagrams 2000


dry Harper Lake
Lockhart Rd
11N04W32A01S
Ryken Well-Sample Site
11N03W28R02S
Well East of Harper Lake
Roy St
Harper Lake Rd
Hinkley Rd
Santa Fe Ave
State Hwy 58
10N03W27F01S
Hinkley Well
Cations
Mg/L
Anions
Na+K
Cl
Ca
Mg
HCO3+CO3
SO4
NO3+NO2
Ryken 2002
East of HL 2002
Hinkley 2002
2002
Legend
Water Quality Locations
- Labeled with State Well Number & Well Name
Roads
Proposed Mojave Solar Project Facility
PLSS: Sections
Hydrology: dry Lakes
Aerial Photography obtained from AirPhotoUSA: February 2006 flight date.
Note: No data available for HCO3+CO3
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Miles
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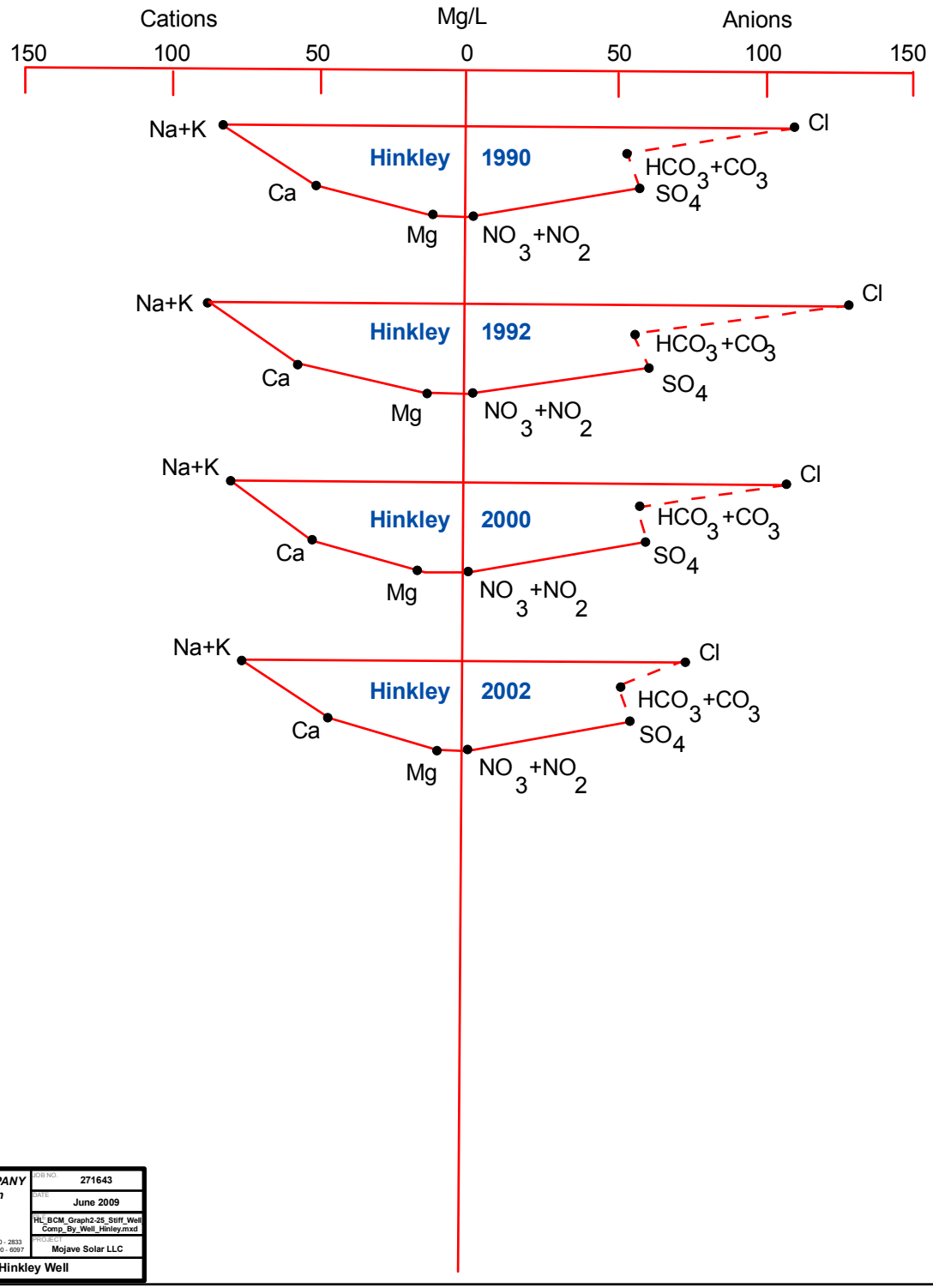
DATE June 2009
FILE HL_BCM_Graph2-24_Water_Quality_Locations_Wells.mxd
PROJECT Mojave Solar LLC
TITLE Graph 2-24: Stiff Diagrams 2002

HINKLEY WELL



Note: No data available for HCO_3+CO_3

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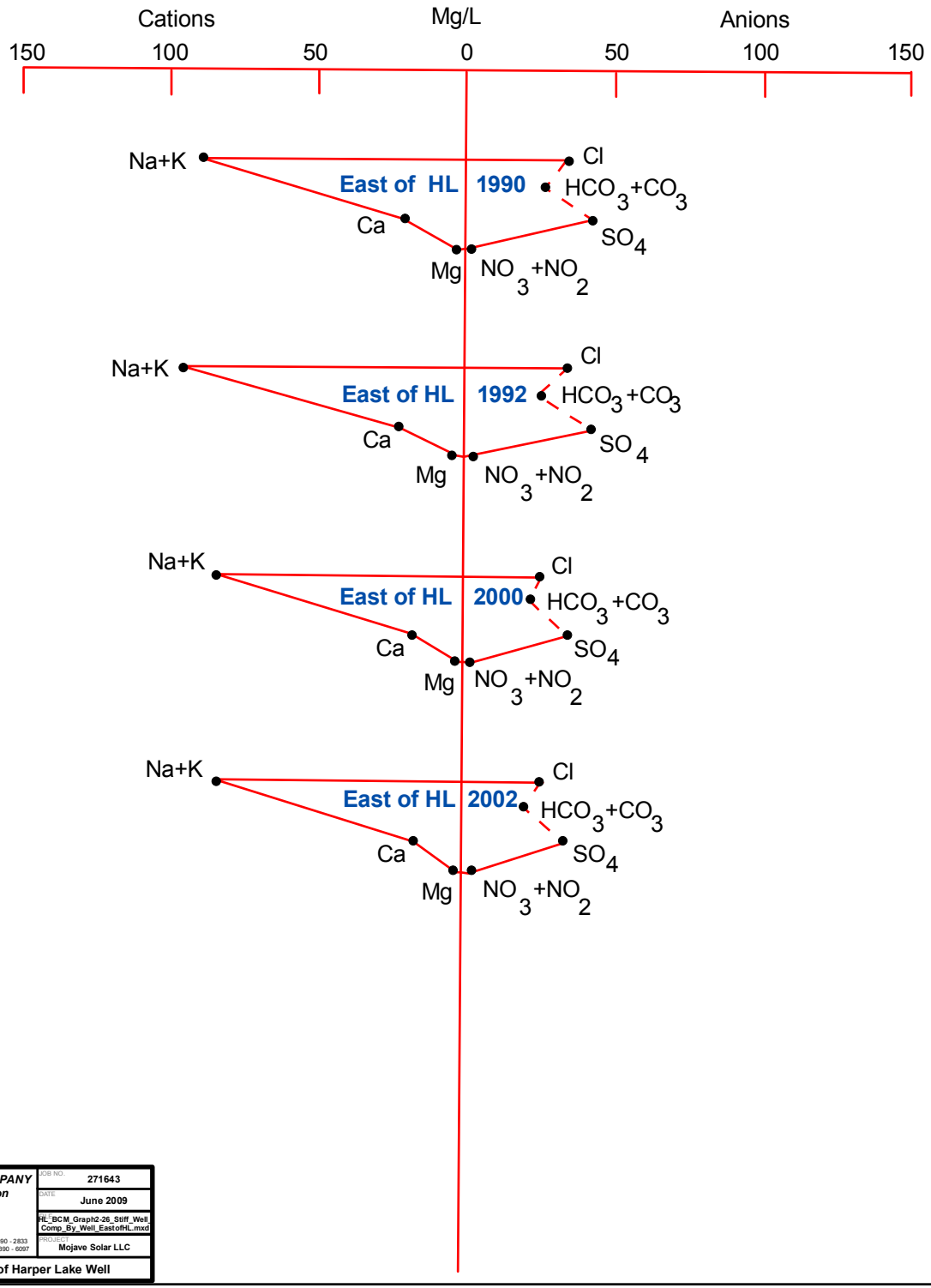
	TITLE Graph 2-25: Stiff Diagrams-Hinkley Well	

EAST OF HARPER LAKE WELL



Note: No data available for HCO_3+CO_3

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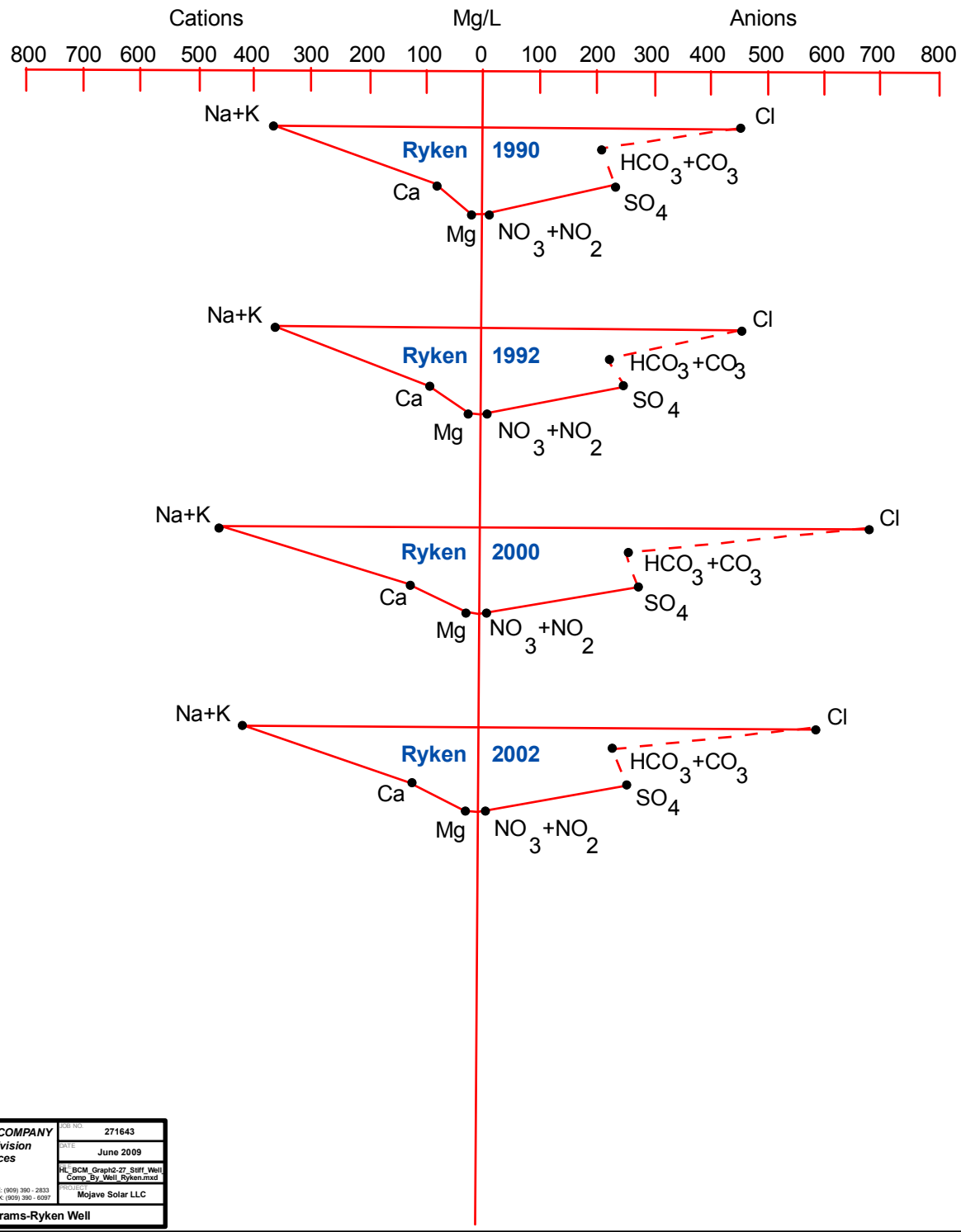
	TITLE Graph 2-26: Stiff Diagrams-East of Harper Lake Well	

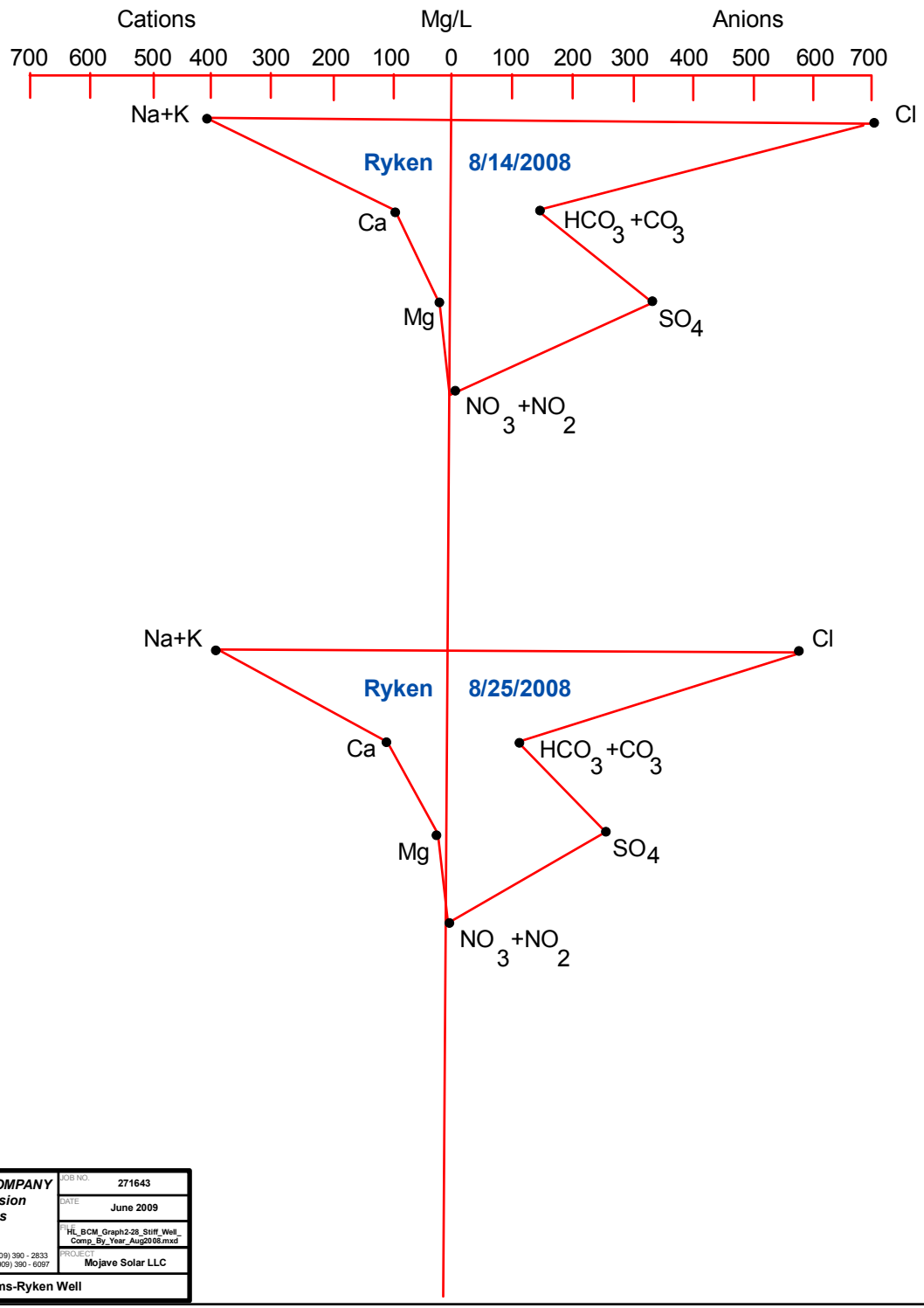
RYKEN WELL



Note: No data available for HCO_3+CO_3

Mojave Solar Project	LAYNE CHRISTENSEN COMPANY Water Resources Division Layne GeoSciences 11001 ETIWANDA AVENUE FONTANA, CA 92337 PHONE: (909) 390 - 2833 FAX: (909) 390 - 6097	JOB NO.: 271643 DATE: June 2009 HL_BCM_Graph2-27_Stiff_Well_Comp_By_Well_Ryken.mxd PROJECT: Mojave Solar LLC
	TITLE: Graph 2-27: Stiff Diagrams-Ryken Well	

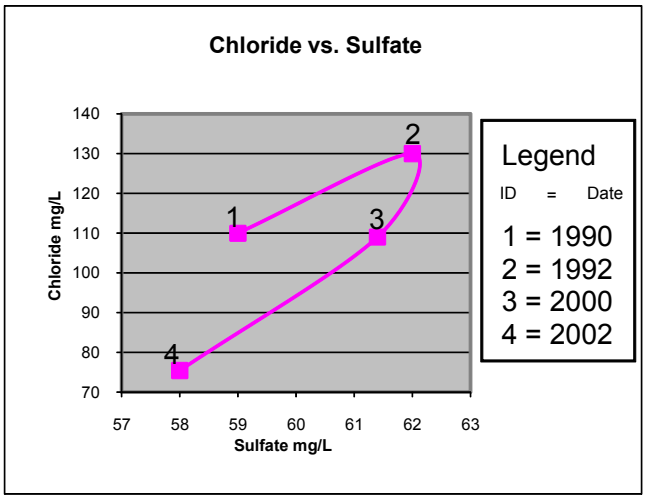
RYKEN WELL - AUGUST 14 & 25, 2008



Mojave Solar Project	LAYNE CHRISTENSEN COMPANY Water Resources Division Layne GeoSciences 11001 ETIWANDA AVENUE FONTANA, CA 92337 PHONE: (909) 390 - 2833 FAX: (909) 390 - 6097	JOB NO. 271643 DATE June 2009 FILE HL_BCM_Graph2-28_Stiff_Well_Comp_By_Year_Aug2008.mxd PROJECT Mojave Solar LLC
	TITLE Graph 2-28: Stiff Diagrams-Ryken Well	

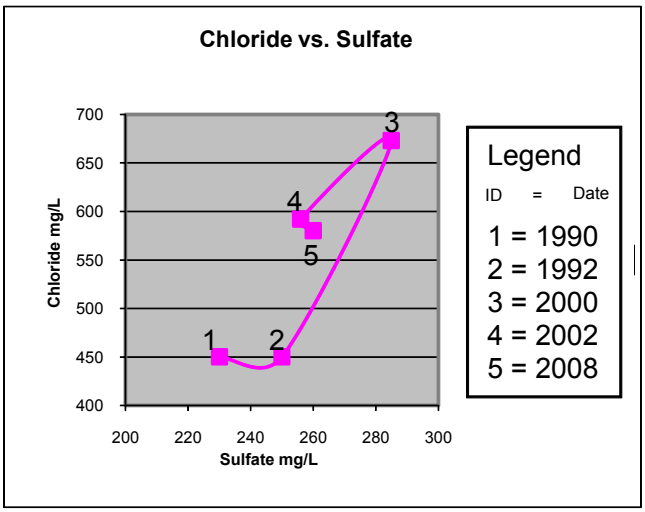
Hinkley Well - Chloride vs. Sulfate

Year	Sulfate (mg/L)	Chloride (mg/L)
1990	59	110
1992	62	130
2000	61.4	109
2002	58	75.4



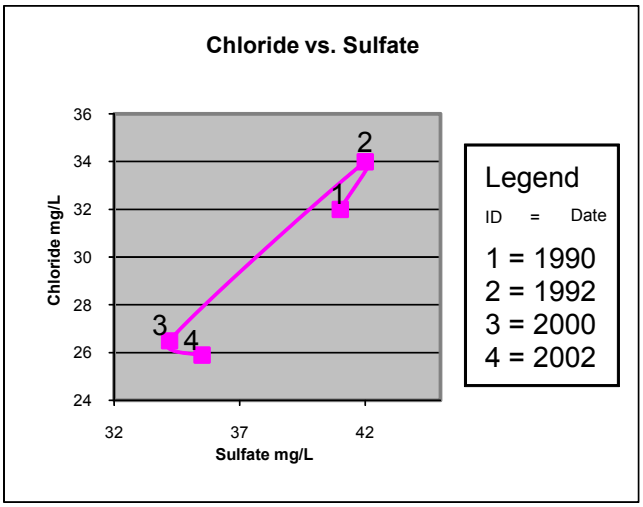
Ryken Well- Chloride vs. Sulfate

Year	Sulfate (mg/L)	Chloride (mg/L)
1990	230	450
1992	250	450
2000	285	673
2002	256	592
2008	260	580



East of Harper Lake - Chloride vs. Sulfate

Year	Sulfate (mg/L)	Chloride (mg/L)
1990	41	32
1992	42	34
2000	34.2	26.5
2002	35.5	25.9



Mojave Solar Project

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JOB NO. 271643
DATE June 2009
FILE HL_BCM_Graph2-29_Chloride_vs._Sulfate_graphs
PROJECT Mojave Solar LLC
TITLE Graph 2-29: Chloride vs. Sulfate