

# Light Department Database History / Situation



First a bit of history



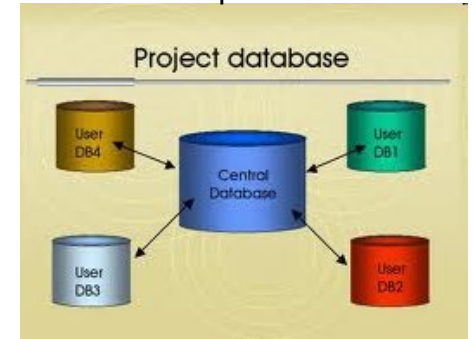
1



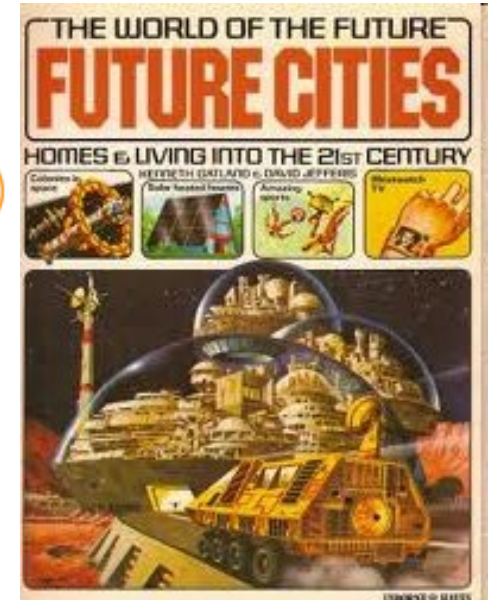
2

The current status at this time

Closer to a perfect world



3



Recommendations for the future



## The Light & water yard Computer / Software History



Back in 1985 the light department kept their records in a card file (hard copy). At the office, data was stored on a main frame type system. Work orders from the office (general work orders & meter changes & new installs) were sent out as hard copies.

By 1989 personal computers started showing up and we started keeping data in spread sheets & word processor formats. The spread sheets of the day were Lotus 1-2-3 and Quattro Pro. For word processing we used Word Perfect & Word Star. The OS was DOS in 1985 and Windows 3.1 around about 1991.

In the early days we used sneaker net to move data around. About the time Windows 3.1 came out we started Novell network lite. That was a coaxial cable system that took care of the Light & water yard and the Substation at the Angeleno yard.

By about 1995 the city started using a database named Paradox database. That's because the word-processor at the time was Word Perfect which was owned by Borland software company. This was Borland's first public offering of a database at that time.

By 1998 the City started to set up software support in an attempt to standardize the hardware & software that was being used by all City departments. As time went by the Office and the Light & Water yard were connected to an Ethernet network.

Currently the various databases are running on a server based at the construction yard on 10th street.

Because of the work we do as a utility it was difficult to buy a software package that did all the things you needed. At first there were no all in one Utility software packages you could buy. Then when they did come on the scene they cost an arm & a leg. So we tried our hand at low end software development (on the down low) [Click here for more info](#). Software & hardware are changing at a rapid rate. As a result software & hardware can get out dated quickly. Fortunately at this time (2011) there many tools available for a small utility as we are.

***Now lets review how the Electric Test Shop have managed this information over the last 22 YEARS! Here are some screen shots with a short description***

The next 13 slides show some of the programs we have used over the years that relate to the kind of work that we do for the Light Dep

This program tracks the outages that happen in the City. This data is included when considering the power quality report.

One of the nice features about this program is that it prints the data out to a word document .

A recommendation would be to use a web browser to display this data.

[Click here for an example](#)

The URL link examples take a little to fire off so please be patient, also these links only work from within the City's network.

**Azusa Light Outage Database 10/25/2004 CRG** *This is the outage report program*

File View Arc View Splash Screen Options Updates

Interruption first reported DATE	Last service restored DATE	Total Cust effected	Total Outage Time (min)	Total Cust. Min.	261:261 Record
8/29/2011	8/29/2011	33	65	2145	270

Over Current Function Time  
 Over Current Function Inst 1  
 Over Current Function Inst 2

Over Current ele A  
 Over Current ele B  
 Over Current ele C  
 Over Current ele N

INST  
 1  
 Relay failed led  
 LOCKOUT

Momentary  
 Sustained

Major Event Yes  
 Major Event No

Scheduled  
 Non-Scheduled

Azusa Failure  
 SCE Failure  
 Customer Failure

Overhead  
 Underground

Industrial  
 Commercial  
 Residential  
 1 Phase  
 3 Phase

**Location of incident**  
1160-1170 E. Alosta Ave.

**Cause of interruption**  
Burnt transformer fuse. Unknown cause, transformer probably over heated due to recent heat wave.

**Service restoration**  
8/29/11 @ approx. 6 PM, answering service reported no lights @ 1160, 1170 E. Alosta Ave. & 1157 E. Hollyvale Ave. Standby arrived @ approx 6:30 PM & observed a burnt transformer fuse on Pole # 3734 MA. Standy returned with a bucket truck to replace the fuse, power was restored to the 33 affected customers @ approx 7:05 PM.

**Cause**  
 Fire  
 Tree growth  
 Tree other  
 Rain  
 Wind  
 Dig in  
 Animal  
 Vehicle  
 Lightning  
 Balloons  
 Equipment  
 Other

**Azusa Substation**  
 VERNON  
 CONEY  
 BREWERY  
 TODD  
 OWL  
 ALAMEDA  
 ANGELENO  
 HILLTOP  
 SIERRA MADRE  
 ROCKVALE  
 PASADENA  
 IRWINDALE  
 PARAMOUNT  
 CERRITOS  
 AZUSA  
 AMFORGE  
 N/A

**Kirkwall Substation**  
 Arrow  
 Gladstone  
 Jackson  
 Vincent  
 N/A

**Foreman/Standby Man** A. Solis **Date** 8/29/2011 **Cust. out** 33 **Out time** 65 **Cust. min.** 2145

**Report prepared by** D. Crapo **Date** **Cust. out** **Out time** **Cust. min.**

⏪ ⏩ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ ⏺ ⏻ ⏼ ⏽ ⏾ ⏿

Edit Mode

Record_num	CIRCUIT	KVA	INSTALL DT	Z	SEC VOLTS	Phase	Map Grid	PCB TST DT	TAPS	PUR DATE	Cost
57		25	1957 ?		120/240	1		10/31/07			
101	Cerritos	15	05-05-73		120/240	1	569-B7	12-05-90	YES	1959	\$299.52
102	Cerritos	25	05-05-73		120/240	1	569-B7	12-05-90	YES	1972	\$222.71
103		25	09-08-97		120/240	1		12-05-90	NO	1963	\$258.96
104		100	1957	2.1	240/480	1		2005			
105		100		2.1	240/480	1					
106		100		2.1	240/480	1					
108		15	05-05-73		120/240	1		12-05-90	NO	1972	
109		25			120/240	1					
112	JACKSON	15	05-05-73		120/240	1	599-C1	12-05-90	NO	1963	\$210.00
113	JACKSON	15	05-05-73		120/240	1	599-B1	12-05-90	NO	1971	\$182.00
114	JACKSON	25	05-05-73		120/240	1	599-B1	12-05-90	NO	1972	\$251.00
115	JACKSON										\$396.60
116	JACKSON										\$229.00
119	JACKSON										\$197.00
136											\$219.00
137	JACKSON										\$219.00
140	ALAMITOS										\$210.00
143	JACKSON										\$373.46
145											\$219.00
146											
150											\$300.56
151											\$188.24
154											
341											
361											
362											
363											
365											
366											
449											\$666.75
450											\$666.75
486											
487											
488											
593	ANGELENO	25	01-31-78		120/240	1	568-J6	11-16-90	NO	??	
594	CERRITOS	25			120/240	1	569-B7				
645	None Yard	37.5			240/480	1		11-21-90	YES	1951	\$666.75
646		37.5			240/480	1		11-21-90	YES	1951	\$666.75
647	JACKSON	25			120/240		569-A7				
649	JACKSON	25	11-06-70		120/240	1	569-B7	12-05-90	YES		
651		25			120/240	1		12-05-90	YES		

**Azusa Light Department Transformer Database 3/31/04 CRG 0.1.1.09**

File Options Reports Help Live Update

Search

Notes Press F1 at any time for Help Record 2 Of 2422

Rec #	KVA	Circuit	Pri volts	Sec volts	Impedance	Type	Install Dt	Taps
57	25		12000	120/240	2	POLE	1957 ?	

MFG Name	Serial	Gals oil	Weight	Pur Date	Cost	Phase	PCB Tst Dt
MOLONEY ELECTRIC	1967757	16	505			1	10/31/07

Location PCB ppm

Pole >> ND

Struct >>

Map Grid

Yard >> SHIPPED

New Notes Below Edit Mode

Pole # 4440MA. GLADSTONE ST PL/N 237' E/O FAIRVALE AV.  
 Removed to replace pole. W.O. # L.T.2101. 4/5/07.  
 CP/A  
 SHIPPED 12/5/07

Tran Maint PMH UG Structs Pole Switch Poles

*This and many of the following programs were compiled from Pascal source code using what they call RAD (rapid application development). It cuts down on the amount of manual coding that needed to be done. The application development system used to make these programs was called Delphi.*

This database is for the distribution transformers.

These include the overhead & underground facilities in the field.

Notice the date on the window bar. *This refers to the last time the was updated not when it was created.*

City Of Azusa Capacitor Bank Database 09/13/07 CRG

File Splash

<b>Bank#</b>	<b>KVAR</b>	<b>Swiched/Fixed</b>	<b>Circuit</b>	<b>Rack S/N</b>	<b>Control Modle#</b>	<b>Pole #</b>
CB #: 1	900	SW	BREWERY	351140	IC-50-61	4848MA

**Location** TODD AV W/S 1004' N/O TENTH ST

**Trans S/N** 5757974

**Oil Switch S/N** 366183  
366675  
366178

**Controller S/N** ACC200008012553

**Controller Ordering Information**

Rack Report      Cel Table

CAPACITOR S/N	BANK#	MANUFACTURER	KVAR	VOLTAGE
95G26056	1	Cooper	150	7200
95H27031	1	Cooper	150	7200
95H27034	1	Cooper	150	7200
95H27042	1	Cooper	150	7200

**General Notes**

1 4 This is a jack named 'JA' located on the left side under the metal cover next to the 'OK' LED.  
By removing the  
o o jumper from position 1 & 2 and placing it accross positions 1 & 4 clears all data from the  
unit.  
o o

**Controller History Log**

Search [Print] [Back] [Forward] [Refresh] [Home] [Left] [Right] [Close] [Reset]

Edit Mode

This database is for the capacitors.

These include the overhead & pad mount facilities in the field.



Under ground structures Elect Test Shop 3/15/04

Structure # 2 ID PB Station Azusa Grid D 2 1:368

Location 1873 MIRADOR DR. 650' S/O SAN GABRIEL CYN. RD.

Amps 200 Voltage 12000 Connection Type LB Elbow Install Date

Circuit(s) Owl Last Inspected 3/8/1999

Equipment Type(s) 3-Junction

Transformer Links *Edit Mode*

Record_num	CIRCUIT	KVA	INSTALL DT	Z	SEC VOLTS	PH

PMH Elect Test Shop 3/15/04

File

Record number 301 Install date Map grid A12 Pur.date Cost Inspection date Type Pad

Location Alosta N/S 30' W/O Calera MFG name Malton Equip. Co.

Serial W.D. 75960 Weight StrucNum Max KV B.I.L. KV Date of MFG.

Compartment 1 circuit Rockvale ckt. Open from vault # ? Compartment 2 circuit Cerritos ckt. Closed from riser pole.

Compartment 3 C.J.E. # ? to 300kva PMT - 30A fuse Compartment 4 1500kva PMT - 100 A fuse *Edit Mode*

Notes PME 9 ---A.P.U. CAMPUS

1:26

These databases are for the underground structures & the PMH databases.

Detail View
\_ □ ×

Azusa Pole Data

POLE_REC	JPA	WORK_NUM	INSTALL_DT	Cost	LENGHT	LOCATION
▶ 10382GT	GT476341168194	BLANK	BLANK	\$0.00	40	SAN GABRIEL AV A/W E
10384GT	GT476441168035	BLANK	BLANK	\$0.00	35	INDUSTRIAL ST P/L 50'S
1041MA	EY90563303	BLANK	1956	\$0.00	35	AZUSA E/S 270' N/O 131
1045992E		EDISON	1956	\$0.00	60	THIRD ST N/S AT NAW

Azusa Light Department Power Pole Database
3/16/04 CRG
\_ □ ×

File Reports Info JPA File

◀ ◁ ▷ ▶ ⏪ ⏩ ⏴ ⏵ ⏶ ⏷ ⏸ ⏹ ⏺ ⏻ ⏼ ⏽ ⏾ ⏿
 
Search 
Table View

GTE
Record 12 Of 3992

POLE NUMBER	CLASS	SPECIES	POLE TEST	W/O #	Map Grid		Trans1
<input type="text" value="10382GT"/>	<input type="text"/>	<input type="text" value="DF"/>	<input type="text" value="//"/>	<input type="text" value="BLANK"/>	<input type="text"/>	<input type="text"/>	Trans2
INSTALL DT	LENGTH	TREATMENT	CONDITION	\$ COST \$	JPA #	<input type="text"/>	Trans3
<input type="text" value="BLANK"/>	<input type="text" value="40"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="\$0.00"/>	<input type="text" value="GT476341168194"/>	<input type="text"/>	Edit Mode
LOCATION							
<input type="text" value="SAN GABRIEL AV A/W E/S 35' N/O S F R R/W"/>							

This databases is for the power poles databases. It has linked fields to the transformer database.

1073822E		EDISON	1956	\$0.00	60	HALTERN ST P/LN - 465
1073823E		EDISON	1956	\$0.00	60	HALTERN AVE. P/LN - 36

**Pole Switch** Elect Test Shop 7/17/06

File

Table View Search

P.S. #	CIRCUIT	POLE #	AMP. RATING	SERVICE DATE	INSPECT DATE
2	TODD	4324MA			
LOCATION				OP/CL	CIRCUIT TIE
TODD W/S S/O SIERRA MADRE				OP	BREWERY
LB/NLB	INSTALL DATE	MAP GRID	PURCHASE DATE	COST	
MAX. KV	B.I.L.	MANUFACTURE	SERIAL	WEIGHT	

1:92 Edit Mode

This database is for the pole switch databases.



*This application was ahead of its time. The management at the time did not appreciate it .*

*It covered all the types of work that was done by the Light Crews & the Electric Meter Test Shop.*

*I suspect it would be valued now.*

City Of Azusa Light Department 04/01/02

06/01/2003 [IS] TO 08/31/2011 [IS] [Go]

BANNERS ----->	19	OVER HEAD POLES INSTALLED ----->	8
TREES INSPECT ----->	48	OVER HEAD POLES REMOVED ----->	4
TREES TRIM ----->	34	OVERHEAD CONDUCTORS INSTALLED ---->	1
STREET LIGHTS REPAIR ---->	302	OVERHEAD CONDUCTORS REMOVED ----->	4
STREET LIGHTS INSTALL -->	9	OVERHEAD CONDUCTORS REPAIRED ----->	2
STREET LIGHT STANDARD INSTALLED -->	0	OVERHEAD TRANSFORMER INSTALLED ---->	8
STREET LIGHT LUMINAIRE INSTALLED -->	16	OVERHEAD TRANSFORMER REMOVED ----->	4
STREET LIGHT CABLE INSTALLED OH -->	0	OVERHEAD SWITCHES INSTALLED ----->	3
STREET LIGHT CABLE INSTALLED UG -->	8	OVERHEAD SWITCHES REMOVED ----->	0
SERVICES INSTALL OH ---->	28	OVERHEAD CAPACITORS INSTALLED ----->	2
SERVICES INSTALL UG ---->	85	OVERHEAD CAPACITORS REMOVED ----->	0
SERVICES CHANGE OH ---->	95	OVERHEAD GUYS & ANCHORS INSTALLED -->	13
SERVICES CHANGE UG ---->	1	OVERHEAD GUYS & ANCHORS REMOVED -->	0
SERVICES REMOME OH ---->	62	OVERHEAD FUSES INSTALLED ----->	2
SERVICES REMOVE UG ---->	0	OVERHEAD FUSES CHANGED ----->	0
SERVICES TPP IN ----->	0	UNDERGROUND PRIMARY CABLE INSTALLED ----->	1
SERVICES TPP OUT ----->	1	UNDERGROUND PRIMARY CABLE REMOVED ----->	0
POWER QUALITY NO LIGHTS ----->	5	UNDERGROUND SECONDARY CABLE INSTALLED -->	24
POWER QUALITY PARTIAL LIGHTS -->	12	UNDERGROUND SECONDARY CABLE REPAIRED ---->	1
POWER QUALITY FLICKER ----->	10	UNDERGROUND TRANSFORMER INSTALLED ----->	2
POWER QUALITY VOLTAGE HI ----->	0	UNDERGROUND TRANSFORMER REMOVED ----->	0
POWER QUALITY VOLTAGE LOW ---->	0	UNDERGROUND SWITCHES INSTALLED ----->	0
POWER QUALITY LOAD CHECK ----->	19	UNDERGROUND SWITCHES REMOVED ----->	0
DIG ALERT ----->	0	UNDERGROUND CAPACITORS INSTALLED ----->	0
Meters Turned On ----->	81	UNDERGROUND STRUCTURES BUILT ----->	3
Meters Turned Off ----->	154		
Meters Installed New ----->	540		
Meters Installed Used ----->	157		
Meters Changed ----->	786		
Meters Removed ----->	79		
METERS TESTED IN SHOP ----->	0		
METERS TESTED IN SHOP ----->	0		

Send Data To Word

Total records In Sets -----> 2278

This was a report that could be generated over a range of dates. It was linked to many other database sources to show overall work done by All in the light department.

It also printed out a nice form using "Word".

**CITY OF AZUSA SWITCH MAINTENANCE / INSPECTION RECORDS Ver 0.0.0.3**

Files Other Forms Options Printing Program Improvements

DATE: 2005.6.30:7:42:47 << REPORT # Gen Date INSPECTED BY: DC MAP GRID: 593A1

CITY # 43 TYPE: KPF LOAD BREAK: Y N VAULT OR POLE # 3948MA

LOCATION: PASADENA AVE W/S N/D RUSSELL Search

STREET ADDRESS: CIRCUIT: Arrow

RATING	DESCRIPTION	RESPONSE PERIOD
1	Requires urgent or immediate corrective action.	1-9 Days
2	Requires timely corrective action.	Within 6 mos.
3	No emergency repair action.	Within 2 yrs.
4	Good condition; no action required.	
0	Not applicable.	

**CITY OF AZUSA CAPACITOR MAINTENANCE / INSPECTION RECORDS Ver 0.0.0.3**

Files Other Forms Options Printing Program Improvements

DATE: 2005.6.16:10:57:58 << REPORT # Gen Date INSPECTED BY: EJB 3-24-06 MAP GRID: 568H4

CITY # 31 KVAR: 450 TYPE: POLE PAD SWITCH/FIXED S F VAULT OR POLE # 4610MA

LOCATION: HIDDEN VALLEY S/S P/P 1040' W/O SUNSET Search

STREET ADDRESS: 604 HIDDEN VALLEY DR. CIRCUIT: Owl

RATING	DESCRIPTION	RESPONSE PERIOD
1	Requires urgent or immediate corrective action.	1-9 Days
2	Requires timely corrective action.	Within 6 mos.
3	No emergency repair action.	Within 2 yrs.
		No response

**INSPECTION**

- Operation check
- Condition of rods & handles
- Condition of blades
- Temperature (bushings & elbows)
- Load check
- Leaking oil
- Rusted
- Grounded, bonded
- Condition of pad or pole
- Barriers in place (live parts above 750V)
- Cables tagged (over 750 V)
- Secured, locked & bolted down
- High Voltage signs (on exposed parts above 750 V.)
- Ownership sign
- PCB's
- Drainage

REFERENCE WORK ORDER #

COMPLETED BY: DC

CROSS ARM / TIMBER IS DETERATED, NEEDS TO BE RE SUGGESTION IS TO REMOVE THIS SWITCH.  
PS 43 Removed 12-13-05

1 of 167 records

**CITY OF AZUSA TRANSFORMER MAINTENANCE / INSPECTION RECORDS Ver 0.0.0.3**

Files Other Forms Options Printing Program Improvements

DATE: 2005.1.11:2:42:29 << REPORT # Gen Date INSPECTED BY: KCVP MAP GRID: 568J7

CITY # 2705 KVA: 50 TYPE: Pole Pad Burd PHASE: 1 3 VAULT OR POLE # 4204MA

LOCATION: AZUSA AV A/E W/S 350' S/D SECOND ST Search

STREET ADDRESS: 150 N. AZUSA CIRCUIT: Alameda

RATING	DESCRIPTION	RESPONSE PERIOD
1	Requires urgent or immediate corrective action.	1-9 Days
2	Requires timely corrective action.	Within 6 mos.
3	No emergency repair action.	Within 2 yrs.
4	Good condition; no action required.	No response
0	Not applicable.	

INSPECTION	RATING #
Temperature (bushings & elbows)	4
Over loaded	4
Leaking oil	4
Rusted	4
Grounded, bonded	4
Condition of pad or pole	4
Barriers in place (live parts above 750V.)	0
Cables tagged (over 750 V.)	0
Secured, locked & bolted down	0
High Voltage signs (on exposed parts above 750 V.)	4
Ownership sign	0
PCB's	0
Drainage	0

REFERENCE WORK ORDER #  Follow Up

COMPLETED BY: DATE // / 19

1 of 2294 records

ION	RATING #
	0
	0
	4
	4
	4
	4
	4
	4
	0
	4
750 V.)	4
	4
	0
	0

Follow Up

DATE 04/14/2010 19

These 3 databases are used for the GO165 inspections

**GO165 Stats** 3/6/2007

Trans | Switch | Caps | **Inspections** | Querys | Need To Do

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**PATROL Transformers DETAILED**

Overhead	<input type="text" value="1317"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="109"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="36.5"/>
Underground	<input type="text" value="131"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="10.9"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="10.9"/>
Pad Mounted	<input type="text" value="706"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="58.8"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="19.6"/>

Total Transformers In field 2154      Total Transformers In database 2422      NOTE: This data comes from the transformer database

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**PATROL Switching / Protection Devices DETAILED**

Overhead	<input type="text" value="92"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="7.66"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="2.55"/>
Underground	<input type="text" value="0"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="0"/>	Years Per Cycle ->	<input type="text" value="5"/>	Unit Per Month ->	<input type="text" value="0"/>
Pad Mounted	<input type="text" value="26"/>	Years Per Cycle ->	<input type="text" value="1"/>	Unit Per Month ->	<input type="text" value="2.16"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="0.72"/>

Total Transformers In field 118      NOTE: This data comes from the Pole Switch and PMH databases

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**PATROL Capacitors / Regulators DETAILED**

Overhead	<input type="text" value="29"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="0.80"/>	Years Per Cycle ->	<input type="text" value="3"/>	Unit Per Month ->	<input type="text" value="0.80"/>
Pad Mounted	<input type="text" value=""/>	Years Per Cycle ->	<input type="text" value=""/>	Unit Per Month ->	<input type="text" value=""/>	Years Per Cycle ->	<input type="text" value=""/>	Unit Per Month ->	<input type="text" value=""/>

Total Caps In Database 36      NOTE: This data comes from the capacitor database

---

3711      **PATROL**  
 3123      **INTRUSIVE**  
**Poles Under 15 Years**   
**Poles Over 15 Years without Intrusive test**

Gen Rpt In Word   Run Que   Gen Html

This was a report from the three GO165 databases. You would enter in your numbers  
 Then push the "Run Que" button



**GO165 Stats** 3/16/2007

Trans | Switch | Caps | Inspections | Queries | Need To Do

NOTE: This data comes from the GO 165 transformer maintenance database

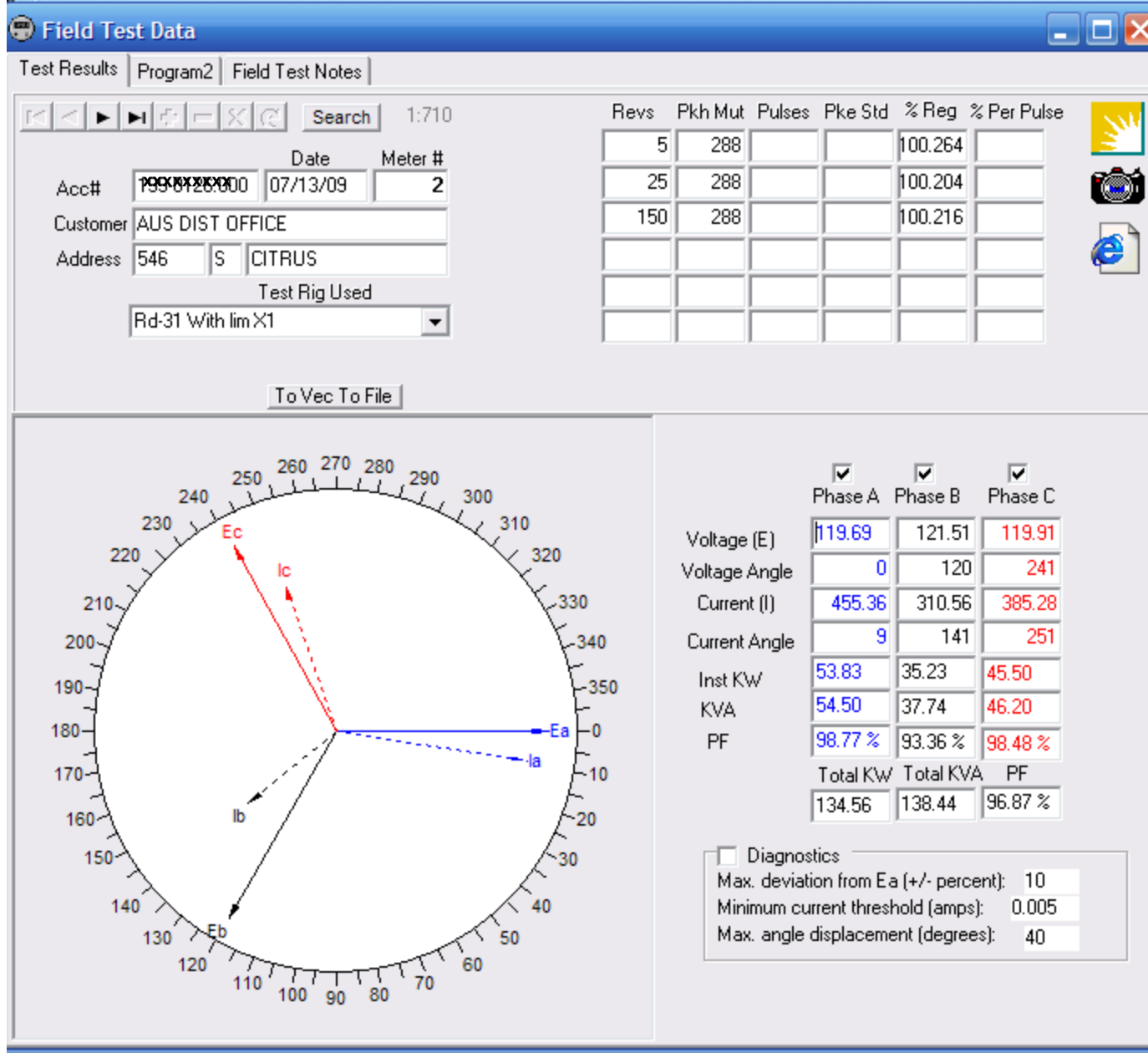
<u>RATING</u>	<u>DESCRIPTION</u>	<u>RESPONSE PERIOD</u>
1)	Requires urgent or immediate corrective action. ....	1 -9 Days
2)	Requires timely corrective action. ....	Within 6 mos.
3)	No emergency repair action. ....	Within 2 yrs.
4)	Good condition; no action required. ....	No response
0)	Not applicable.	

### GO165 Transformer Information

	Rating 1 =	Rating 2 =	Rating 3 =	OH	PAD	UG
Temperature (bushings _elbows)	0	0	3			
Over loaded ----->	0	0	4			
Leaking oil ----->	2	10	9			
Rusted----->	1	9	49			
Grounded, bonded----->	1	1	1			
Condition of pad or pole----->	4	22	22			
Barriers in place ----->	0	1	1			
Cables tagged (over 750 V.)---->	0	2	33			
Secured, locked _bolted down-->	2	16	6			
High Voltage signs----->	0	5	6			
Ownership sign----->	1	50	52			
PCB's ----->	0	0	0			
Drainage ----->	0	0	2			
<b>Total Records</b>	<b>2294</b>					
<b>Follow Up Check</b>	<b>= 120</b>					

RunQue ?

This is the same report as above showing the results tab.  
 The report also printed a nice report using "Word"



This is the database we currently keep our electric meter field test in.

This is the original meter card database. It only stores in it the electric meters that are field tested.

Because the current Enquesta database dose not have all the fields in this record that we require and making changes to the Enquesta database are costly so we still use this one.

All the meters that we don't field test (mainly residential) are stored in the Enquesta system.

Even though we are not allowed to edit the residential meters stored in the Enquesta system we have been able to export the data for our needs.

March 8, 2003 Last Rev

Files Search Edit Options Reports Views Enter Test Data

Get Rec

Rec #	Rr	Form	Kh	Test Amps	Volts	Class	Dial Const		
1	SS	9S	1.8	2.5	120	20	80		
MFG Name		Mtr Type	Serial	Install Dt	Test Dt	Ser Type			
LANDIS & GYR		RXRS4E	98918451		931007	S			
Spell check	Location		Building	Unit					
	SHOP 8/10/2010								

Pro Notes O:\data\E\_METER\mtrs.DB Record 1 Of 2086

Removed from 1501 W GLADSTONE on 8/10/2010 By 205 7/2010  
Installed at 1501 W GLADSTONE on 06/04/08 MSO 5868  
Meter needs to be upgraded to Reactive. has default program awaiting upgrade to re-program. 06/09/08  
Metrum Card  
S/N: 0709C3316110  
Carrier: Verizon  
ESN# HEX 6C34D2CE DEC 10803461838

Note Edit Mode

File Actions

- Install OH Service
- Install UG Service
- Change Existing Ser
- Remove Service
- Remove Mtr
- Install New Mtr
- Install Old Mtr
- Change Mtr
- Meter Left On
- Meter Left Off

## Browse Mode

MSO #

Account #  Date Issued  Date Required

Customer Name

Service Address

Inspected By  Issued By

Completed By  Completion Date

Reason For Change

### Meter Set

Rec #	Read	Dial	Cons #	Dial	Ser	Typ
23482	7227	1	5	R		

Dem Mtr  Yes  No

Rr	Form	Kh	T A	Volts	Class
SS	2S	1	30	240	200

Mtr Type	MFG Name	Serial
C1SR	SCHLUMBERGER	25010085

### As Left Test Results

Full Load	Power Factor	Light Load	Test Date
100.05	100.02	99.99	5/23/2003

- 1Phase 2w
- 1Phase 3 w
- 3Phase 3wD
- 3Phase 4wD
- 3Phase 4wY

### Meter Removed

Rec #	Read	Dial	Cons #	Dial	Ser	Typ	Dem Rd

Rr	Form	Kh	T A	Volts	Class

Mtr Type	MFG Name	Serial

### As Found Test Results

Full Load	Power Factor	Light Load	Test Date

- 1Phase 2w
- 1Phase 3 w
- 3Phase 3wD
- 3Phase 4wD
- 3Phase 4wY

**S/W on front house.**

**ERT# = 35243093**

The is the program the electric test shop uses to keep track of the electric meters installed or changed by Ed & Clark.

All of these print out using Word templates that we made

1:4763

Administrator

Spell Check



This is free and open source forum software.


It has many, many features and levels of security.

It's a bit of over kill for what I'm using it for but it works very well and I haven't had any problems with it so I still use it.

It's free flowing. For example I'll track a customer, any thing done on this account I keep track of. I can attach files, images, urls pretty much what ever I want.

A lot of the electric meter test shop information is stored here.

***Now lets switch gears and consider the billing system and our interface to it. (at least from my perspective).***



# clarkgetty/index.htm

The City Of Azusa Electric Test Shop













Search... Search  
Advanced search

[Board index](#) v A ^

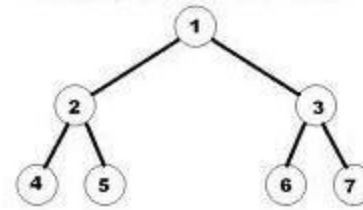
[User Control Panel \(0 new messages\)](#) • [View your posts](#) [FAQ](#) [Members](#) [Logout \[ cgetty \]](#)

It is currently Thu Aug 25, 2011 9:38 pm  
[ Moderator Control Panel ] Last visit was: Thu Aug 25, 2011 5:13 pm

[View unanswered posts](#) • [View new posts](#) • [View active topics](#) [Mark forums read](#)

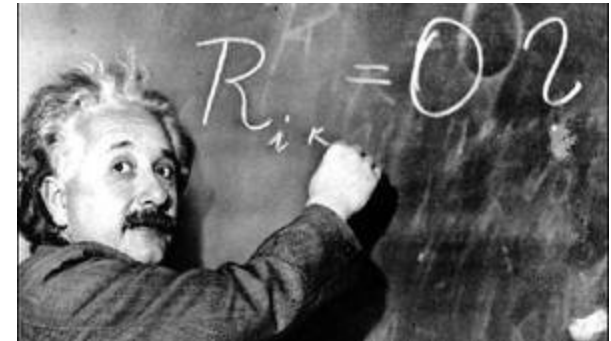
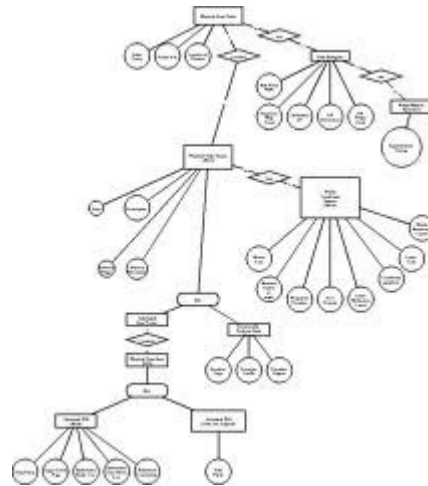
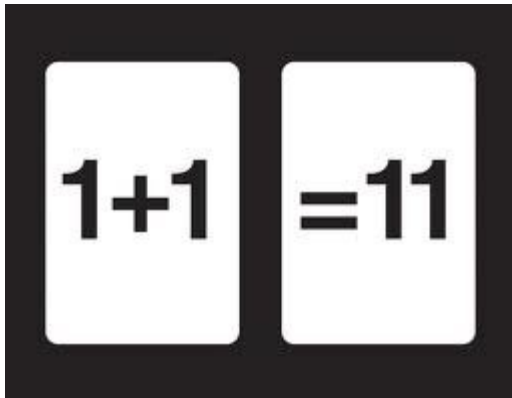
FORUM	TOPICS	POSTS	LAST POST
 <b>G1 Tracking</b>	77	77	by <b>cgetty</b>  on Wed Aug 17, 2011 11:12 pm
 <b>G2 Tracking</b>	96	96	by <b>cgetty</b>  on Thu Aug 25, 2011 9:22 pm
 <b>TOU Tracking</b> To keep track of things that happen that effect customer accounts. Emails sent back & forth, reasons explaining changes made to meter programs, things like that.  So that two years after some shit hits the fan & splatters all over the place I can review what I did & why I did it!	50	97	by <b>cgetty</b>  on Tue Jul 05, 2011 11:41 pm
 No new posts <b>Elect Meter Test Shop</b>	27	41	by <b>cgetty</b>  on Wed Jul 06, 2011 4:16 pm
 <b>Elect Test Shop Weekly Activity List</b>	6	6	by <b>cgetty</b>  on Tue Jan 04, 2011 5:14 pm
 <b>Substations</b> Substation Tracking Files	3	3	by <b>cgetty</b>  on Thu Nov 19, 2009 10:30 pm

Before S&S the billing system had a data structure like this.



After S&S we now have a data structure worse than the one below! We went from about 100 tables to what seems like a 1000 tables of data.

In many cases the tables are almost identical. This structure smacks of “I need job security” or if you give S&S the benefit of the doubt, very poor database structure design. You could hire a consultant to tell you what you want to hear. I’m just telling YOU straight up as one who has tried to extract data from this morass.



Although I don't appreciate the need for this kind of data structure keep in mind I don't get to see the whole picture. Maybe this type of structure is necessary .



***Now lets talk about how the test shop has been handling Data since the S&S billing Software came on the screen***

The white palace 701 N Azusa



Data Dump From enQuesta server



enQuesta server data via Impromtu was gathered by the electrical test shop and displayed using a web browser.

No need to load software on client PCs, No license issues to be concerned with, easy access to all who cared to use it.

All other data resides here, transformers capacitors, meter records...

Construction yard at 1020 W 10th



Because data can not easily be imported into enQuesta the meter records are entered in by the office via hard copy. The electric test shop keeps separate databases because of the inflexibility & cost issues that would be involved importing this data into enQuesta .

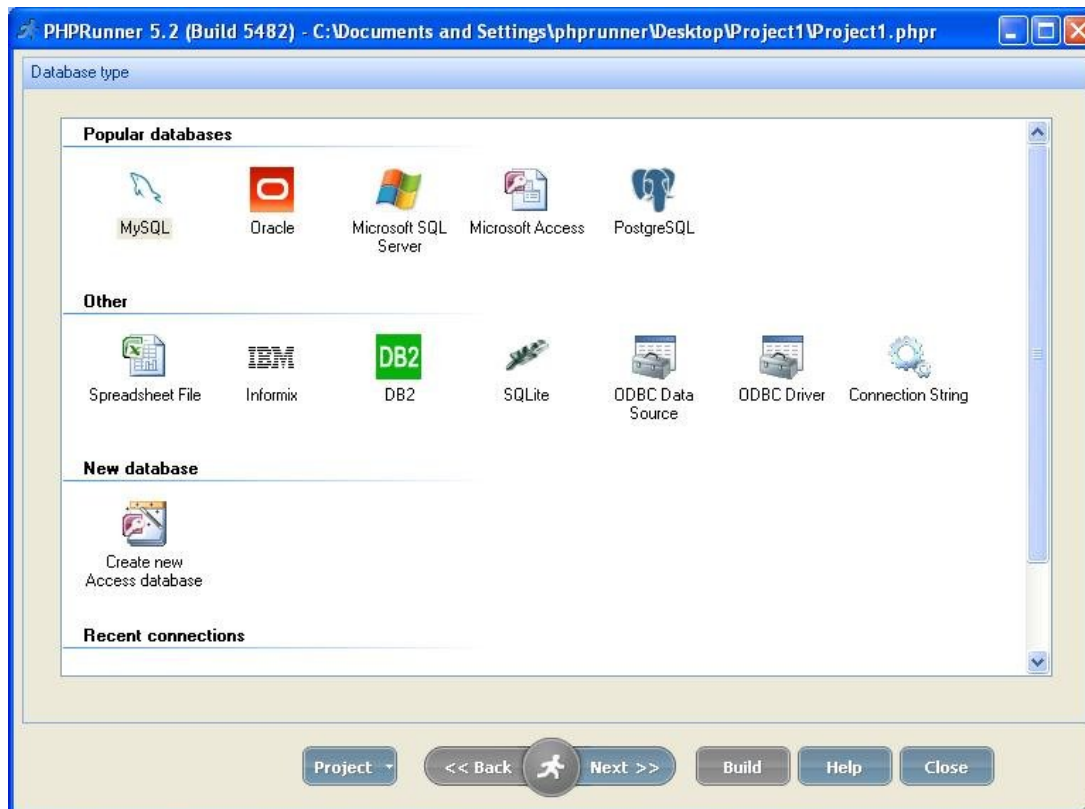
*Now lets talk about what we would like to do*

When S&S came on line the desire of the Test Shop was to query the database directly. The vendor S&S was not in favor of this. Impromptu was the vendor recommended interface.

With out complaining too much we went along with Impromptu and cobbled a system together to get the data we need (Thank you for your help Margret).

Now the S&S vendor recommended interface has changed. And we are back to where we started.

The City owns a software program that will allow us to query data right out of the database. The program is Phprunner. With out the need to know how to program you can make tools to get the data that you need with out a bunch of fluff. This program only cost \$600.00. No special hardware to run it. No maintenance contract required to keep it going.



*The next few slides show some examples with URLs that you can try for yourself*

Logged on as Guest [Log out](#) [Advanced search](#)

[Linktable](#) [Partstracking](#) [T Mtrs](#)

search     [Flash Demo](#) Details found: 4 Page 1 of 1 Records Per Page:

	<u>Job Num</u>	<u>Account Num</u>	<u>Note</u>	<u>Dt</u> ↓	<u>Link Rec</u>
<a href="#">Linktable (1)</a> <a href="#">T Mtrs (1)</a>	2327	0	FINAL DISC INC 970 W Foothill	8/18/2011	1

[Proceed to Linktable](#) Details found: 1 Page 1 of 1

<u>JB Num</u>	<u>Parts Order</u>	<u>Link Rec</u> ↑																												
<b>Electric Test Shop Metering components</b>																														
<del>XXXXXXXXXXXXXXXX</del>																														
<del>XXXXXXXXXXXXXXXX</del>																														
2327	<table border="1"> <thead> <tr> <th>Unit</th> <th>Description</th> <th></th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>KWH meter ITRON Type S5452L FM 95</td> <td>989.00</td> <td>989.00</td> </tr> <tr> <td>3</td> <td>Current Transformers ITRON Type R6P 400:5</td> <td>\$102.95</td> <td>308.85</td> </tr> <tr> <td>1</td> <td>10 Pole Test Switch</td> <td>63.83</td> <td>63.83</td> </tr> <tr> <td>2</td> <td>Man Hours crg Hr Rate = \$44.34 + BP X 40% \$17.74</td> <td>62.08</td> <td>124.15</td> </tr> <tr> <td><b>Flat rate</b></td> <td>Truck 701 Time</td> <td>25.00</td> <td>25.00</td> </tr> <tr> <td><a href="#">Link</a></td> <td></td> <td>Total-&gt;</td> <td><b>1510.83</b></td> </tr> </tbody> </table>	Unit	Description		Total	1	KWH meter ITRON Type S5452L FM 95	989.00	989.00	3	Current Transformers ITRON Type R6P 400:5	\$102.95	308.85	1	10 Pole Test Switch	63.83	63.83	2	Man Hours crg Hr Rate = \$44.34 + BP X 40% \$17.74	62.08	124.15	<b>Flat rate</b>	Truck 701 Time	25.00	25.00	<a href="#">Link</a>		Total->	<b>1510.83</b>	1
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<a href="#">Linktable (1)</a> <a href="#">T Mtrs (1)</a>	2323	<del>XXXXXXXXXX</del>	Lock Ridge Tools 1001 W Kirkwall	8/11/2011	4																									
<a href="#">Linktable (1)</a> <a href="#">T Mtrs (1)</a>	2314	<del>XXXXXXXXXX</del>	APPLEBEE RESTAURANT 377 N Citrus	7/13/2011	2																									
<a href="#">Linktable (1)</a> <a href="#">T Mtrs (1)</a>	2307	<del>XXXXXXXXXX</del>	SO CALIF GAS CO 950 W Todd	7/5/2011	3																									

This database keeps track of the electric metering equipment used for new electrical services.

This is an example of the model the we (Clark) prefers today. A web browser is used instead of An OS based front end (zero configuration). The database is a true SQL / client server model It is recommended that all the databases be converted over into this format. [Try it](#)

Try It

Advanced search

Export results

Print this page

Print all pages

Import

T Mtrs

Hamburger

Wk Or

search



Details found: 4375 Page 1 of 44 Records Per Page: 100

Delete selected

Export selected

Print selected

<input type="checkbox"/>	Acc#	Cust Name	W/O #	Descrip	What Was Done	W/O Code	DT Done	DT Sent Out
<input type="checkbox"/>	XXXXXXXX0	ISAIAS HERRERA	114898	MTR INVESTIGATION LA	SPECIFICALLY LINE FROM POLE TO WEATHERHEAD. CUST SAID LAST NIGHT THERE WERE	1201	0/0/0000	0/0/0000
<input type="checkbox"/>	XXXXXXXX0	ISAIAS			SPECIFICALLY LINE FROM POLE TO WEATHERHEAD. CUST SAID LAST NIGHT THERE WERE	1201	0/0/0000	0/0/0000
<input type="checkbox"/>	1XXXXXXXX3	SEALINE			SPARKS COMING FROM TOP OF HOUSE AND POWER WOULD COME AND GO. THEIR ELECTRICIAN TOLD HIM TO CALL US. CUST'S CELL # XXXXXXXX	1210	0/0/0000	0/0/0000
<input type="checkbox"/>	XXXXXXXX4	JANET W				1210	8/18/2011	8/18/2011
<input type="checkbox"/>	XXXXXXXX2	ROBERT CONNER				1210	8/18/2011	8/18/2011
						1201	0/0/0000	0/0/0000
						1201	8/23/2011	0/0/0000

SPECIFICALLY LINE FROM POLE TO WEATHERHEAD. CUST SAID LAST NIGHT THERE WERE  
 SPARKS COMING FROM TOP OF HOUSE AND POWER WOULD COME AND GO. THEIR ELECTRICIAN TOLD HIM TO CALL US.  
 CUST'S CELL # XXXXXXXX

Close window

Advanced search

Export results

Print this page

Print all pages

Import

T Mtrs

Hamburger

Wk Or

27031



Show all



Details found: 1 Page 1 of 1 Records Per Page: 100

Delete selected

Export selected

Print selected

HERE FOR RELEASE BUT STILL NEEDING TO RE

<input type="checkbox"/>	Acc#	Mtr#	Cust Name	Address	Mtr Make	Mi	Am	Mfr	Mtr Kind	ERT #	For	Kh	Rate
<input type="checkbox"/>	XXXXXXXX3	27031	NEDAL BARAKAT	601 N AZUSA AVE	ITRON	1	200	58231783	CP15DR3	11518011	165	1.00	

Today is August 31, 2011

# City Of Azusa



# Electric Test Shop

Search for   
 
 Details found: 138 Page 1 of 2  
 Records Per Page:

<input type="checkbox"/>	<u>account</u>	<u>mtr#</u>	<u>address</u>	<u>date</u> ↓	<u>dem</u>	<u>fce</u>
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	8/4/2011	6,641.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	7/11/2011	7,866.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	6/7/2011	5,848.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	5/5/2011	6,092.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	4/7/2011	4,784.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	3/7/2011	4,107.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	2/7/2011	4,118.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	1/10/2011	4,711.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	12/8/2010	5,165.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	11/4/2010	4,294.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	10/7/2010	6,787.00	1
<input type="checkbox"/>	78124000 XXXXXXXXXX	16690	817 W GLADSTONE ST	9/8/2010	6,841.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	8/5/2010	7,263.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	7/8/2010	5,819.00	1
<input type="checkbox"/>	XXXXXXXXXX	16690	817 W GLADSTONE ST	6/7/2010	5,156.00	1



## Do you ever get this feeling ?

S&S



The City wants something



We need to make some  
Changes to our software

S&S after receiving payment

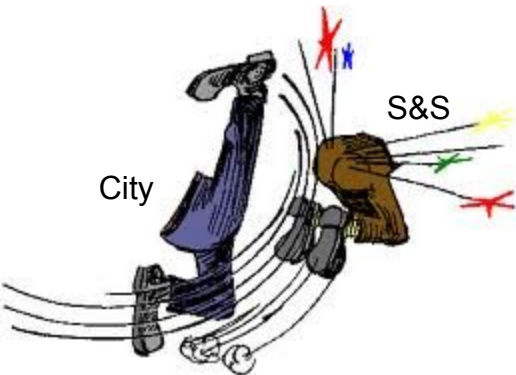


## Lets Try Something New

For the Test Shop the new reporting tool dose not get the job done.

To the extent that we can we should avoid using the services of S&S if we are able. We should the use the tools & knowledge we already have in house.

Mike said technically what we are asking is not an issue. We could read the data directly with out needing to export data. **Click For Next**





*In a perfect world*

- \* All the databases could reside in one common location.
- \*The people making the hardware & software would not always be adding a bunch of fluff to their products just to keep the business rolling in.
- The training & software support would be reasonably priced.
- \* Software integration between software systems would be easier (its getting there).



*We don't live in a perfect world*



*But there is still hope*

- Use opensource software whenever possible.
- Start using a real SQL client / server database.
- A OS independent front end and back end should be used (like a web browser for the front end).
- Discussion about how the databases should be structured, linked fields, consolidating common fields...
- A yearly amount should be budgeted put in place for software upgrades and for using contractors as needed.
- Train your people in house and retain them! When your in a pinch its nice to have some locally to fix you problem.

# The End