APPENDIX M
NOISE DATA AND PHOTOGRAPHIC LOG

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TABLE OF CONTENTS

Appendix M-1 **Field Equipment List and Calibration Certifications**
Appendix M-2 **Field Measurement Data Sheets**
Appendix M-3 **Photographic Log**
Appendix M-4 **Equipment Sound Power Levels**

APPENDIX M-1
FIELD EQUIPMENT LIST AND CALIBRATION CERTIFICATIONS

APPENDIX M-1 – FIELD EQUIPMENT LIST AND CALIBRATION CERTIFICATIONS

The following instruments were used to conduct the field noise measurements:

- **Sound Level Meters -** Larson Davis Model 820, Serial Number 1470 and Serial Number 1323.

- **Acoustical Calibrators** - Larson Davis Model Cal 200 (94 dBA SPL @ 1000 Hz). Serial Number 2794.

- **Psychometric Instruments** Sims Digital, Anemometer Model DIC, Serial Number 95022.

PCB PIEZOTRONICS
A PCB GROUP COMPANY

Certificate of Calibration and Conformance

Certificate Number 2007-91413

Instrument Model 820, Serial Number 1323, was calibrated on 03APR2007. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

Instrument found to be in calibration as received: NO
Date Calibrated: 03APR2007
Calibration due: 03APR2008

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	LDSigGn/2209	0445 / 0111	12 Months	13NOV2007	2006-86046

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 24 ° Centigrade

Relative Humidity: 27 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Provo Engineering & Manufacturing Center. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

See "AS RECEIVED" data.

Signed: E. Olson
Technician: Eric Olson

Provo Engineering and Manufacturing Center, 1681 West 820 North, Provo, Utah 84601
Toll Free: 888.258.3222 Telephone: 716.926.8243 Fax: 716.926.8215
ISO 9001-2000 Certified

Certificate of Calibration and Conformance

Certificate Number 2006-75817

Instrument Model 820, Serial Number 1470, was calibrated on 06JAN2006. The instrument meets factory specifications per Procedure D0001.8160, ANSI S1.4 1983, IEC 651-Type 1 1979, and IEC 804-Type 1 1985.

New Instrument
Date Calibrated: 06JAN2006
Calibration due: 06MAR2007

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Larson Davis	2900 / 2209	0666 / 0123	12 Months	01DEC2006	2005-74684

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Temperature: 24 ° Centigrade

Relative Humidity: 24 %

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

Signed: Keith Driskill
Technician: Keith Driskill

Larson Davis A PCB GROUP CO.

Larson Davis, Inc. is an ISO 9001-2000 Registered Company

1681 West 820 North • Provo, UT 84601 U.S.A. • 801.375.0177 • Fax: 801.375.0182 • www.larsondavis.com

Larson Davis

A PCB Group Co.

Certificate of Calibration and Conformance

Certificate Number 2006-85110

Instrument Model CAL200, Serial Number 2794, was calibrated on 16OCT2006. The instrument meets factory specifications per Procedure D0001.8190.

Instrument found to be in calibration as received: YES
Date Calibrated: 16OCT2006
Calibration due: 16OCT2007

Calibration Standards Used

MANUFACTURER	MODEL	SERIAL NUMBER	INTERVAL	CAL. DUE	TRACEABILITY NO.
Schaevitz	P3061-15PSIA	17588	12 Months	16FEB2007	287327
Larson Davis	2900	0661	12 Months	04APR2007	2006-78704
Larson Davis	2559	2506	12 Months	18APR2007	14031-1
Hewlett Packard	34401A	US36033460	12 Months	02JUN2007	290347
Hewlett Packard	34401A	3146A10352	12 Months	23JUN2007	291010
Larson Davis	MTS1000/2201	0111	12 Months	11SEP2007	2006-0911-2
Larson Davis	PRM915	0112	12 Months	18SEP2007	2006-84212
Larson Davis	PRM902	0480	12 Months	18SEP2007	2006-84211

Reference Standards are traceable to the National Institute of Standards and Technology (NIST)

Calibration Environmental Conditions

Environmental test conditions as shown on calibration report.

Affirmations

This Certificate attests that this instrument has been calibrated under the stated conditions with Measurement and Test Equipment (M&TE) Standards traceable to the U.S. National Institute of Standards and Technology (NIST). All of the Measurement Standards have been calibrated to their manufacturers' specified accuracy / uncertainty. Evidence of traceability and accuracy is on file at Corporate Headquarters. An acceptable accuracy ratio between the Standard(s) and the item calibrated has been maintained. This instrument meets or exceeds the manufacturer's published specification unless noted.

This calibration complies with the requirements of ISO 17025 and ANSI Z540. The collective uncertainty of the Measurement Standard used does not exceed 25% of the applicable tolerance for each characteristic calibrated unless otherwise noted.

The results documented in this certificate relate only to the item(s) calibrated or tested. A one year calibration is recommended, however calibration interval assignment and adjustment are the responsibility of the end user. This certificate may not be reproduced, except in full, without the written approval of the issuer.

"As Received" data is the same as shipped data.

Signed: Scott Montgomery
Technician: Scott Montgomery

CORPORATE HEADQUARTERS
1681 West 820 North
Provo, Utah 84601-1341 USA
Toll Free: 888-258-3222
Tel: 801-375-0177
Fax: 801-375-0182
info@LarsonDavis.com
www.LarsonDavis.com

SALES OFFICE
3425 Walden Avenue
Depew, New York 14043-2495 USA
Toll Free: 888-258-3222
Tel: 716-926-8243
Fax: 716-926-8215
info@LarsonDavis.com
www.LarsonDavis.com

APPENDIX M-2
FIELD MEASUREMENT DATA SHEETS

LT-1

FIELD MEASUREMENT DATA SHEET

URS Project Name: CPV Ocotillo Job # 28067168.20500

ID

SITE IDENTIFICATION: Ocotillo Mondhenk Property LT-1 OBSERVER(s): Rob Greene / Ron Reeves
START DATE & TIME: 5/9/07 13:30 END DATE & TIME: 5/10/07 15:08
ADDRESS: Powerpole # 257756 25:24:15 Duration
GPS coordinates:

Weather

TEMP: 100 °F HUMIDITY: ~~25~~ 15 % R.H. WIND: CALM LIGHT MODERATE (VARIABLE)
WINDSPEED: 11 MPH DIR: N NE E SE S SW (W) NW STEADY GUSTY 15-17 MPH
SKY: (CLEAR) (SUNNY) DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Acoustic Measurements

INSTRUMENT: LD 820 TYPE: (1) 2 SERIAL #: 1323
CALIBRATOR: CAL 200 SW SERIAL #: 2794 Cal 200
CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST 93.9 dBA SPL WINDSCREEN ✓
SETTINGS: (A-WEIGHTED) (SLOW) FAST FRONTAL (RANDOM) ANSI OTHER:

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
1	13:45 / 15:08	59.0	81.4	37.4	44.4	55.4	62.8
/	/						
/	/						
/	/						

COMMENTS: Note: At 17:50 5/9/07 wind noted as sustained @ 17-20 mph gusting to 26 Leq noted at 61.4

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL (INDUSTRIAL) (AMBIENT) OTHER
ROADWAY TYPE: N/A

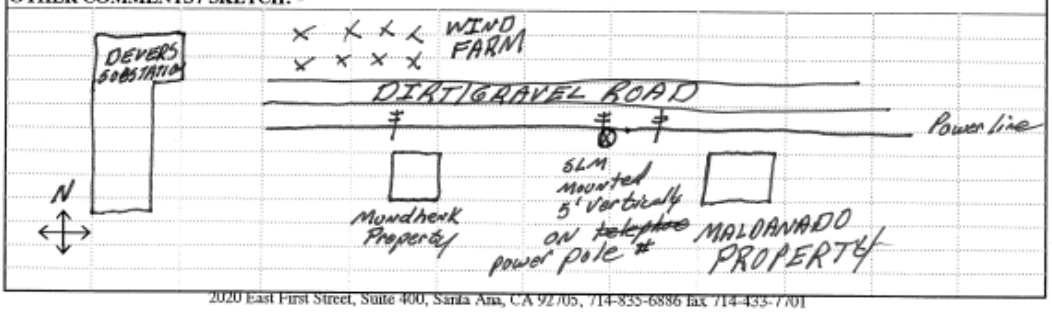
COUNT DURATION: ____-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / (RUSTLING LEAVES) / distant BARKING DOGS / BIRDS distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: Low level mechanical noise from distant wind turbines (slight tonality)

Description / Sketch

TERRAIN: HARD SOFT (MIXED) FLAT OTHER: Flat with shelves
PHOTOS:
OTHER COMMENTS / SKETCH:



ST-1

FIELD MEASUREMENT DATA SHEET

URS Project Name: CPV Ocotillo Job # 28067168.20500

ID

SITE IDENTIFICATION: ST-1 OBSERVER(s): Rob Greek & Ron Reeves
START DATE & TIME: 5/10/07 1030 END DATE & TIME:
ADDRESS: Power pole 257756 Same as LT-1

GPS coordinates:

Weather

TEMP: 97 °F HUMIDITY: 15 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 7-10 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 25 GUST 15 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other: HOT

Acoustic Measurements

INSTRUMENT: LD 820 TYPE: 1 2 SERIAL #: 1470
CALIBRATOR: CAL 200 SERIAL #: 2794

CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST 94.1 dBA SPL WINDSCREEN ✓

SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
1	11:10 / 11:15	47.5	~~54.2~~ 54.2	44.2	45.8	47.0	49.0
2	11:20 / 11:25	50.2	56.4	46.1	47.4	49.8	52.6
/	/						
/	/						

COMMENTS:

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER

ROADWAY TYPE:

COUNT DURATION: ____-MINUTE

	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS / BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS

OTHER: wind turbine gen gear noise (distant (300') (mid frequency)

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:

PHOTOS: ✓ at nearest residences to east approx 50' SLM + SNA

OTHER COMMENTS / SKETCH:

measurms.xls

ST-2

FIELD MEASUREMENT DATA SHEET

URS Project Name: CPV Ocotillo Job # 28067168.20500

ID

SITE IDENTIFICATION: ST-~~3~~2 OBSERVER(s): Rob Greene / Ron REEVES
START DATE & TIME: 5/10/07 END DATE & TIME:
ADDRESS: Intersection of Diablo & Smoketree Rds

GPS coordinates:

Weather

TEMP: 100 °F HUMIDITY: 15 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 5-10 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 15 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Acoustic Measurements

INSTRUMENT: LD 820 TYPE: 1 2 SERIAL #: 1470
CALIBRATOR: LD Cal 200 SERIAL #: 2794
CALIBRATION CHECK: PRE-TEST 94.0 dBA SPL POST-TEST 94.1 dBA SPL WINDSCREEN ✓
SETTINGS: A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}
1	11:45 / 12:00	43.4	60.2	39.0	40.0	41.6	43.9
/	/						
/	/						
/	/						

COMMENTS:

Source Info and Traffic Counts

PRIMARY NOISE(S): TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT OTHER
ROADWAY TYPE:

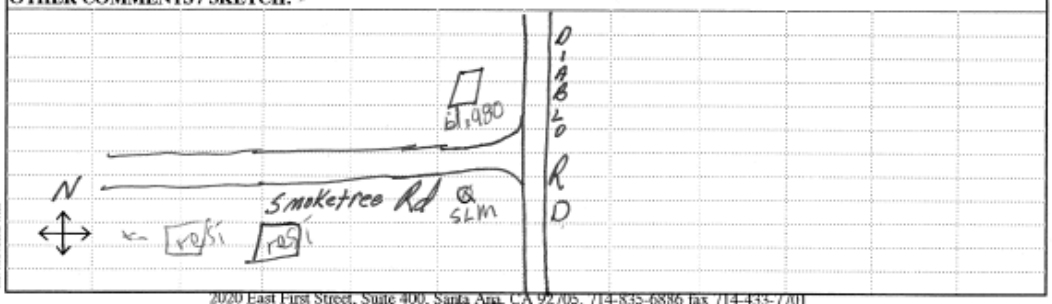
COUNT DURATION: ___-MINUTE	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	1 /			30 /
MED. TRUCKS:	/			/
HVY TRUCKS:	/ 3			32 /
BUSES:	/			/
MOTORCYCLES:	/			/

SPEED ESTIMATED BY: RADAR / DRIVING / OBSERVER

OTHER NOISE SOURCES: distant AIRCRAFT overhead / RUSTLING LEAVES / distant BARKING DOGS BIRDS
distant CHILDREN PLAYING / distant TRAFFIC / distant LANDSCAPING / distant TRAINS
OTHER: Distant hand hammer

Description / Sketch

TERRAIN: HARD SOFT MIXED FLAT OTHER:
PHOTOS: ✓
OTHER COMMENTS / SKETCH:



2020 East First Street, Suite 400, Santa Ana, CA 92705, 714-835-6886 fax 714-435-7701

ST-3

FIELD MEASUREMENT DATA SHEET

URS

Project Name: CPV Ocotillo **Job #** 28067168.20500

SITE IDENTIFICATION: ST-#3 **OBSERVER(s):** Rob Greene & Ron Reeves
START DATE & TIME: 5/10/07 **END DATE & TIME:**
ADDRESS:

GPS coordinates:

ID

TEMP: 102 °F HUMIDITY: 15 % R.H. WIND: CALM LIGHT MODERATE VARIABLE
WINDSPEED: 12-15 MPH DIR: N NE E SE S SW W NW STEADY GUSTY 20 MPH
SKY: CLEAR SUNNY DARK PARTLY CLOUDY OVRCST FOG DRIZZLE RAIN Other:

Weather

INSTRUMENT: LD 820 **TYPE:** 1 2 **SERIAL #:** SA 1470
CALIBRATOR: LD Cal 200 **SERIAL #:** 2794

CALIBRATION CHECK: **PRE-TEST** 94.0 **dBA SPL** **POST-TEST** 94.0 **dBA SPL** **WINDSCREEN** ✓

SETTINGS: **A-WEIGHTED SLOW FAST FRONTAL RANDOM ANSI OTHER:**

Rec #	Start Time / End Time	L_{eq}	L_{max}	L_{min}	L_{90}	L_{50}	L_{10}	
1	14:40 / 14:45	50.2	58.2	45.7	47.9	49.3	52.3	
/	/							
/	/							
/	/							

COMMENTS:

Acoustic Measurements

PRIMARY NOISE(S): **TRAFFIC AIRCRAFT RAIL INDUSTRIAL AMBIENT** OTHER WIND NOISE ONLY
ROADWAY TYPE:

COUNT DURATION: -MINUTE

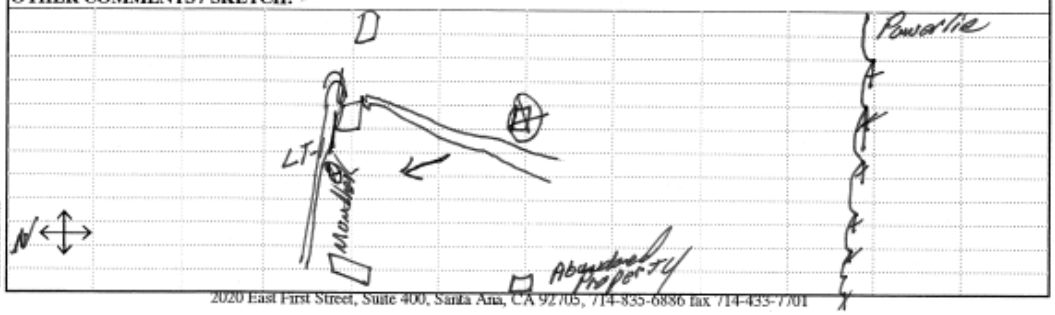
	NB / EB / SB / WB	SPEED (mph) NB EB / SB WB	#2 COUNT: NB / EB / SB / WB	SPEED (mph) NB EB / SB WB
AUTOS:	/	/	/	/
MED. TRUCKS:	/	/	/	/
HVY TRUCKS:	/	/	/	/
BUSES:	/	/	/	/
MOTORCYCLES:	/	/	/	/

SPEED ESTIMATED BY: **RADAR / DRIVING / OBSERVER**

OTHER NOISE SOURCES: distant **AIRCRAFT** overhead / **RUSTLING LEAVES** / distant **BARKING DOGS** / **BIRDS**
distant **CHILDREN PLAYING** / distant **TRAFFIC** / distant **LANDSCAPING** / distant **TRAINS**
OTHER:

Source Info and Traffic Counts

TERRAIN: **HARD SOFT MIXED FLAT OTHER:**
PHOTOS:
OTHER COMMENTS / SKETCH:



Description / Sketch

measform2.xls

APPENDIX M-3
PHOTOGRAPHIC LOG

	LT-1 – View to North
	LT-1 – View to West

	ST-1
	ST-2

	ST-3

APPENDIX M-4
EQUIPMENT SOUND POWER LEVELS

Table M-4-1. Plant Equipment Sound Power Levels

Equipment Name	Number	31.5	63	125	250	500	1000	2000	4000	8000	A	lin
Gas Turbine	8	115	94	96	93	100	92	97	99	89	103.8	115.4
Turbine Generator	8	123	121	118	109	103	100	99	105	99	110.2	126.1
GTG Aux Skid	8	85	87	92	104	106	102	99	101	80	108.1	110.2
Intercooler	8	107	111	107	98	99	93	99	103	101	107.3	114.5
Air Inlet	8	103	96	85	90	97	99	91	79	102.5	104.2	107.6
SCR Duct Walls	8	117	116	118	111	104	99	94	84	72	107.6	122.3
Silenced Exhaust Stack	8	128	121	117	113	103	96	100	108	103	111.8	129.2
Auxiliary Transformer	20	108	111	105	105	100	94	91	88	88	102	114.3
Step Up Transformer	8	95	101	103	98	98	92	87	82	75	98.4	107
5 Cell Cooling Tower	5	116.1	119.2	118.2	115.2	110.5	110.5	107.3	106.1	104.7	115.7	124.1
3 Cell Cooling tower	3	111.8	116.3	114.8	112.5	109	108.7	105	103.4	102.4	113.6	121.1
Fuel Gas Compressor	7	115	116	112	109	110	111	109	109	108	116.5	121.5
Air Compressor Skid	8	95	102	100	100	97	96	95	94	90	102.1	107.4
Cooling/Purge Air Fans	8	51	90	104	96	96	95	85	80	82	98.4	105.8
Circulation Water Pump	6	96	103	101	101	98	97	96	95	91	103.1	108.4
MLO Skid	8	90	107	108	105	106	93	95	91	85	105.2	112.8
GTG Inlet Plenum	8	0	99	96	95	91	92	92	91	82	98.2	103.2