
Appendix E
HRCM Predictive Modeling Input/Output Worksheets

SoCal Gas - Honor Rancho Compressor Modernization Project

Appendix E -- Construction Noise Prediction Model Worksheets

To User: bordered cells are inputs, unbordered cells have formulae
03/17/24, MCS: equipment quantities and ops hours revised per 12/12/2023 update

noise level limit magnitude for construction at residence exterior, per FTA guidance =	80
allowable hours over which Leq is to be averaged =	8

Source, receptor, and barrier all share same reference grade elevation; unless otherwise noted)
 = Barrier of input height inserted between source and receptor

Project/Phase		Compounds/FWMA/RCNM Construction Equipment Type		Quantity	Altitude (ft) from FWMA/RCNM	Reference Lines (ft) from FWMA/RCNM	Client Equipment Description, Data Source and Notes	Source to MSR Distance (ft)	Temporary Barrier Insertion Loss (dB)	Additional Noise Reduction	Distance (ft)	Operation Time (hours)	Altitude (ft) from FWMA/RCNM	Altitude (ft) from FWMA/RCNM	Predicted 5 hour L _{eq}	Source Elevation (ft)	Receiver Elevation (ft)	Barrier Height (ft)	Source to Recv. Dist. (ft)	Source to Recv. Dist. (ft)	Source to Recv. Dist. (ft)	Path Length Dist. (ft)	Abatt. (dB)	Huff (with barrier)	Huff (without barrier)	G (with barrier)	G (without barrier)	L (with barrier)			
1	Demolition, Site Prep & Rough Grading	crane	1	16	81	60-ton or 80-ton crane	2400	0	40.2	3	180	28	180	28	180	28	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		backhoe	2	10	78	Cal backhoe #16-420	2400	0	37.2	6	360	39	360	39	360	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		hydraulic breaker	1	1	50	hydraulic breaker	2400	0	42.2	3	180	37	180	37	180	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		graffiti	1	40	83	reacraft (10k or 12k lb)	2400	0	42.2	3	180	37	180	37	180	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		skidsteer	1	40	80	skidsteer	2400	0	39.2	8	480	39	480	39	480	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		compressor (air)	1	40	78	air compressor	2400	0	37.2	6	480	33	480	33	480	33	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	2	50	70	generator (50kW)	2400	0	29.2	8	480	29	480	29	480	29	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		concrete saw	2	20	90	concrete saw (10 hp)	2400	0	49.2	4	240	42	240	42	240	42	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		pickup truck	24	40	55	pickup truck (0.75-ton)	2400	0	14.2	2	120	18	120	18	120	18	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		flat bed truck	1	40	74	service truck (2 ton)	2400	0	33.2	2	120	23	120	23	120	23	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		flat bed truck	2	40	74	fatbed dump truck (2 ton)	2400	0	33.2	2	120	23	120	23	120	23	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	2	40	76	bus (40 passenger)	2400	0	35.2	2	120	26	120	26	120	26	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	1	40	76	fuel truck	2400	0	35.2	1	60	22	60	22	60	22	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	1	40	76	water truck	2400	0	35.2	5	300	29	300	29	300	29	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	2	40	76	dump truck (10 yd)	2400	0	35.2	4	240	26	240	26	240	26	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		vacuum street sweeper	1	10	80	street sweeper	2400	0	39.2	4	240	26	240	26	240	26	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		tractor	1	40	84	tractor	2400	0	43.2	2	120	36	120	36	120	36	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		skidsteer	2	40	80	skidsteer	2400	0	39.2	2	120	37	120	37	120	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	4	50	70	generator (50kW)	2400	0	29.2	3	180	28	180	28	180	28	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
Total Aggregate Noise Exposure from Demolition, Site Prep & Rough Grading Phase																50															
2	Piles & Foundations	crane	1	16	81	60-ton or 80-ton crane	2400	0	40.2	3	180	31	180	31	180	31	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		backhoe	2	10	78	Cal backhoe #16-420	2400	0	37.2	6	360	34	360	34	360	34	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		excavator	1	40	81	Cal 325	2400	0	40.2	7	420	36	420	36	420	36	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		front end loader	1	40	79	Cal 914G Loader	2400	0	38.2	8	480	34	480	34	480	34	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		skidsteer	1	40	80	skidsteer	2400	0	39.2	8	480	39	480	39	480	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	1	40	80	generator (50kW)	2400	0	39.2	8	480	39	480	39	480	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		compactor (ground)	4	20	80	Ship Loader	2400	0	39.2	6	360	37	360	37	360	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		roller	1	20	80	Rammer Compactor	2400	0	39.2	7	420	32	420	32	420	32	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		graffiti	3	40	83	reacraft (10k or 12k lb)	2400	0	42.2	3	180	39	180	39	180	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		compressor (air)	1	40	78	air compressor	2400	0	37.2	6	480	33	480	33	480	33	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	2	50	70	generator (50kW)	2400	0	29.2	8	480	29	480	29	480	29	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		pumps	3	50	77	trash pump (3" ast)	2400	0	36.2	3	180	34	180	34	180	34	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		pickup truck	24	40	55	pickup truck (0.75-ton)	2400	0	14.2	2	120	18	120	18	120	18	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		flat bed truck	1	40	74	service truck (2 ton)	2400	0	33.2	2	120	23	120	23	120	23	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		flat bed truck	1	40	74	fatbed dump truck (2 ton)	2400	0	33.2	2	120	23	120	23	120	23	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	4	40	76	bus (40 passenger)	2400	0	35.2	2	120	31	120	31	120	31	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	1	40	76	fuel truck	2400	0	35.2	1	60	22	60	22	60	22	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	1	40	76	water truck	2400	0	35.2	5	300	29	300	29	300	29	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		dump truck	1	40	76	dump truck (10 yd)	2400	0	35.2	7	420	31	420	31	420	31	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		vacuum street sweeper	1	10	80	street sweeper	2400	0	39.2	4	240	26	240	26	240	26	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		tractor	1	40	84	tractor	2400	0	43.2	2	120	36	120	36	120	36	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		skidsteer	6	40	80	skidsteer	2400	0	39.2	2	120	37	120	37	120	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	4	50	70	generator (50kW)	2400	0	29.2	3	180	28	180	28	180	28	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
Total Aggregate Noise Exposure from Piles & Foundations Phase																47															
3	Trenching / Undergrounds	crane	1	16	81	60-ton or 80-ton crane	2400	0	40.2	3	180	28	180	28	180	28	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		backhoe	2	10	78	Cal backhoe #16-420	2400	0	37.2	6	360	34	360	34	360	34	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		front end loader	1	40	79	Cal 914G Loader	2400	0	38.2	8	480	34	480	34	480	34	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		skidsteer	1	40	80	skidsteer	2400	0	39.2	8	480	39	480	39	480	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		generator (+25KVA, VMS signs)	1	40	80	generator (50kW)	2400	0	39.2	8	480	39	480	39	480	39	5	5	0	100	2300	2400	100.1	2300.0	2400.0	0.0	0.1	5.0	5.0	0.7	0.1
		compactor (ground)	4	20	80	Rammer Compactor	2400	0	39.2	6	360	37	360	37	360	37	5	5	0	100	2300	2400	100.1	2300.0	2400.0						

Construction Schedule (based on Workforce Projection)

		Year	2025												2026												2027											
		Month	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov			
Construction Phase																																						
Demolition, Site Prep & Rough Grading			✓	✓	✓	✓	✓	✓	✓																													
Piles & Foundations				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																
Trenching / Undergrounds						✓	✓	✓	✓	✓	✓	✓																										
Steel, Pipe, Equipment & Building Erection								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓													
Electrical & Instrument										✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Roadways & Paving																				✓	✓	✓	✓	✓	✓	✓												
Coating/Paint & Insulation																							✓	✓	✓	✓												
Commissioning & Start-up																								✓	✓	✓	✓											
SCE Retention Substation					✓	✓	✓	✓	✓	✓	✓													✓	✓	✓	✓	✓	✓	✓								
SCE Saugus Substation (assessed at Oakmont on Newhall)							✓																			✓	✓	✓	✓	✓								
SCE 66kV Subtransmission Work (assessed at Oakmont on Newhall)								✓	✓	✓	✓																											
SCE Telecom (assessed at Oakmont on Newhall)											✓																											
Combined Construction Noise at Nearest Offsite Receptor:		Oakmont of Santa Clarita (OSC)																																				
Demolition, Site Prep & Rough Grading		49.7	49.7	49.7	49.7	49.7	49.7	49.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Piles & Foundations		0.0	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	47.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Trenching / Undergrounds		0.0	0.0	0.0	0.0	46.1	46.1	46.1	46.1	46.1	46.1	46.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Steel, Pipe, Equipment & Building Erection		0.0	0.0	0.0	0.0	0.0	0.0	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	45.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Electrical & Instrument		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	43.4	0.0	0.0	0.0	0.0	0.0	0.0				
Roadways & Paving		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.4	45.4	45.4	45.4	45.4	45.4	45.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
Coating/Paint & Insulation		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.8	40.8	40.8	40.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Commissioning & Start-up		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.6	40.6	40.6	40.6	40.6	40.6	0.0	0.0	0.0	0.0	0.0				
SCE Retention Substation		0.0	0.0	0.0	41.4	41.4	41.4	41.4	41.4	41.4	41.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
SCE Saugus Substation (assessed at Oakmont on Newhall)		0.0	0.0	0.0	0.0	0.0	24.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.3	24.3	24.3	24.3	24.3	0.0	0.0	0.0	0.0				
SCE 66kV Subtransmission Work (assessed at Oakmont on Newhall)		0.0	0.0	0.0	0.0	0.0	0.0	26.9	26.9	26.9	26.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
SCE Telecom (assessed at Oakmont on Newhall)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
Concurrent Total (dBA)		50	52	52	52	53	53	54	52	52	52	52	50	50	50	50	50	50	50	52	52	52	50	51	49	47	45	41	41	24	0	0	0	0				

		OBCF (Hz):	31	63	125	250	500	1000	2000	4000	8000	PWL	SPL	Ref. Dist. (ft)	Notes & Data Source
Outdoor Equipment	<i>A-weighting adjustments</i>		kw	-39	-26	-16	-9	-3	0	1	1	-1			
	MVA		-3	3	5	0	0	-6	-11	-16	-23				
	Transformer (16.5 kV to 4160 V; 12 MVA)	12	82	88	90	85	85	79	74	69	62	94	85.7	3.28	EEl, EPPENG, Ch. 4.2.5, "standard" (i.e., not "quiet")
		(A-weighted)	43	62	74	76	82	79	75	70	61	85	77.1	3.28	client says should be 95 dBA "to be conservative", so adjust w/ Atten in CadnaA
	Discharge Gas Air Cooler		85	98	96	93	90	87	84	80	75	102	93.6	3.28	client-supplied data (85 dBA SPL at 1m)
		(A-weighted)	46	72	80	84	87	87	85	81	74	93	85	3.28	
	Blower for Gas Compressor electric motor inlet		89	89	87	93	86	84	84	82	74	97	89.1	3.28	client-supplied data; you picked 1" SP (loudest levels on client-provided table) from 225 CPS & CPA 1550 rpm per client direction (but client didn't specify SP)
		(A-weighted)	50	63	71	84	83	84	85	83	73	91	83	3.28	
	Blower for Gas Compressor electric motor outlet		96	96	91	96	90	88	85	83	74	102	93.9	3.28	client-supplied data; you picked 1" SP (loudest levels on client-provided table) from 225 CPS & CPA 1550 rpm per client direction (but client didn't specify SP)
		(A-weighted)	57	70	75	87	87	88	86	84	73	94	86	3.28	
	Gas Engine Exhaust		76	94	95	97	93	93	93	91	81	103	94.6	3.28	client-supplied data
		(A-weighted)	37	68	79	88	90	93	94	92	80	99	91	3.28	
	Gas Engine Compressor Air Intake														
91 dBA PWL (from Feasibility Study)															

Scenario A: EPPENG default ("hard")		% cover	Square Feet (SF)	room dimensions in feet			Vol. (m)	Octave Band Center Frequency (Hz)						NRC	Notes
				L	W	H		125	250	500	1000	2000	4000		
				325	90	50	41389	Acoustical Absorption Coefficients (α)							
Abs. Coeff - walls, treated	0%	0		325	90	50		1.04	1.23	0.91	0.78	0.49	0.28	0.85	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)
Abs. Coeff - walls, untreated	100%	41500						0.55	0.14	0.08	0.04	0.07	0.09	0.08	I
Abs. Coeff - ceiling, treated	0%	0		325	90			0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)
Abs. Coeff - ceiling, untreated	100%	29250						0.05	0.1	0.1	0.07	0.02	0.1	0.07	II
Abs. Coeff - floor, treated	0%	0		325	90			0.01	0.05	0.1	0.2	0.45	0.65	0.20	n/a
Abs. Coeff - floor, untreated	100%	29250						0.01	0.01	0.02	0.02	0.02	0.02	0.02	III
Total Square Footage TREATED	0%	0													
Total Square Footage UNTREATED	100%	100000													
TOTAL SQUARE FOOTAGE		100000						0.25	0.09	0.07	0.04	0.04	0.07	0.06	average absorption coefficient
								Sabins (A)							
Abs. Coeff - walls, treated				0	0	0	0	0	0	0	0	0	0		
Abs. Coeff - walls, untreated				22825	5810	3320	1660	2905	3735						
Abs. Coeff - ceiling, treated				0	0	0	0	0	0	0	0	0	0		
Abs. Coeff - ceiling, untreated				1463	2925	2925	2048	585	2925						
Abs. Coeff - floor, untreated				293	293	585	585	585	585						
Total Sabins per OBCF				24580	9028	6830	4293	4075	7245						
				Notes:						I gypsum board (Egan, p. 52, #8)					
										II steel (Egan, p. 52, #15)					
										III concrete floor (Egan, p. 52, #15)					
										NRC = noise reduction coefficient					
Scenario B: "60% of the internal surfaces = NRC 0.85"		% cover	Square Feet (SF)	room dimensions in feet			Vol. (m)	Octave Band Center Frequency (Hz)						NRC	Notes
				L	W	H		125	250	500	1000	2000	4000		
				Acoustical Absorption Coefficients (α)											
Abs. Coeff - walls, treated	80%	33000		325	90	50		0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)
Abs. Coeff - walls, untreated	20%	8500						0.55	0.14	0.08	0.04	0.07	0.09	0.08	I
Abs. Coeff - ceiling, treated	80%	23500		325	90			0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)
Abs. Coeff - ceiling, untreated	20%	5750						0.05	0.1	0.1	0.07	0.02	0.1	0.07	II
Abs. Coeff - floor, treated	0%	0		325	90			0.01	0.05	0.1	0.2	0.45	0.65	0.20	n/a
Abs. Coeff - floor, untreated	100%	29250						0.01	0.01	0.02	0.02	0.02	0.02	0.02	III
Total Square Footage TREATED	57%	56500													
Total Square Footage UNTREATED	44%	43500													
TOTAL SF		100000						0.41	0.34	0.56	0.46	0.35	0.22	0.43	average absorption coefficient
								Sabins (A)							
Abs. Coeff - walls, treated				20790	18480	31350	26070	19800	11550						
Abs. Coeff - walls, untreated				4675	1190	680	340	595	765						
Abs. Coeff - ceiling, treated				14805	13160	22325	18565	14100	8225						
Abs. Coeff - ceiling, untreated				288	575	575	403	115	575						
Abs. Coeff - floor, treated				0	0	0	0	0	0						
Abs. Coeff - floor, untreated				293	293	585	585	585	585						
Total Sabins per OBCF				40850	33698	55515	45963	35195	21700						
estimated noise reduction (difference between Scenarios A & B in NR, dB)								2.2	5.7	9.1	10.3	9.4	4.8		

Scenario A: no insulation	% cover	Square Feet (SF)	room dimensions in feet			Vol. (m)	Octave Band Center Frequency (Hz)						NRC	Notes	
			L	W	H		125	250	500	1000	2000	4000			
															174
Acoustical Absorption Coefficients (α)															
Abs. Coeff - walls, treated	0%	0	174	2	2	1.04	1.23	0.91	0.78	0.49	0.28	0.85	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)		
Abs. Coeff - walls, untreated	100%	704				0.05	0.1	0.01	0.1	0.07	0.02	0.07	II		
Abs. Coeff - ceiling, treated	0%	0	174	2		0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)		
Abs. Coeff - ceiling, untreated	100%	348				0.05	0.1	0.01	0.1	0.07	0.02	0.07	II		
Abs. Coeff - floor, treated	0%	0	174	2		0.01	0.05	0.1	0.2	0.45	0.65	0.20	n/a		
Abs. Coeff - floor, untreated	100%	348				1	1	1	1	1	1	1.00	III		
Total Square Footage TREATED	0%	0													
Total Square Footage UNTREATED	100%	1400													
TOTAL SQUARE FOOTAGE		1400				0.29	0.32	0.26	0.32	0.30	0.26	0.30	average absorption coefficient		
Sabins (A)															
Abs. Coeff - walls, treated						0	0	0	0	0	0				
Abs. Coeff - walls, untreated						35	70	7	70	49	14				
Abs. Coeff - ceiling, treated						0	0	0	0	0	0				
Abs. Coeff - ceiling, untreated						17	35	3	35	24	7				
Abs. Coeff - floor, untreated						348	348	348	348	348	348				
Total Sabins per OBCF						401	453	359	453	422	369				
Notes:															
						I	painted concrete block (Egan, p. 52, #4)								
						II	steel (Egan, p. 52, #15)								
						III	open								
						NRC = noise reduction coefficient									

Scenario B: with insulation	% cover	Square Feet (SF)	room dimensions in feet			Vol. (m)	Octave Band Center Frequency (Hz)						NRC	Notes	
			L	W	H		125	250	500	1000	2000	4000			
															174
Acoustical Absorption Coefficients (α)															
Abs. Coeff - walls, treated	0%	0	174	2	2	0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)		
Abs. Coeff - walls, untreated	100%	704				0.05	0.1	0.01	0.1	0.07	0.02	0.07	II		
Abs. Coeff - ceiling, treated	100%	348	174	2		0.63	0.56	0.95	0.79	0.60	0.35	0.73	NAIMA MB315 "PSK Standard Duty Facing" (NRC=0.85)		
Abs. Coeff - ceiling, untreated	0%	0				0.05	0.1	0.01	0.1	0.07	0.02	0.07	II		
Abs. Coeff - floor, treated	0%	0	174	2		0.01	0.05	0.1	0.2	0.45	0.65	0.20	n/a		
Abs. Coeff - floor, untreated	100%	348				1	1	1	1	1	1	1.00	III		
Total Square Footage TREATED	25%	348													
Total Square Footage UNTREATED	75%	1052													
TOTAL SF		1400				0.43	0.44	0.49	0.50	0.43	0.35	0.46	average absorption coefficient		
Sabins (A)															
Abs. Coeff - walls, treated						0	0	0	0	0	0				
Abs. Coeff - walls, untreated						35	70	7	70	49	14				
Abs. Coeff - ceiling, treated						219	195	331	275	209	122				
Abs. Coeff - ceiling, untreated						0	0	0	0	0	0				
Abs. Coeff - floor, treated						0	0	0	0	0	0				
Abs. Coeff - floor, untreated						348	348	348	348	348	348				
Total Sabins per OBCF						602	613	686	693	606	484				
estimated noise reduction (difference between Scenarios A & B in NR, dB)							1.8	1.3	2.8	1.8	1.6	1.2			

Sound Levels (local)

Name	ID	Type	Oktave Spectrum (dB)										Source		
			Weight:	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
compressor stn long wall	CSLW	Lw	A	76	80	83	74	67	59	54	54	54	85.7	116	EEI EPPENG calcs
compressor stn short wall	CSW	Lw	A	70	74	77	68	62	53	48	49	49	79.7	110	EEI EPPENG calcs
compressor stn roof area	CSRA	Lw	A	91	95	98	92	87	77	67	66	66	101.1	131	EEI EPPENG calcs
new comp stn bldg window	NCSBW	Lw	A	51	55	58	58	60	59	57	46	46	66.1	91	EEI EPPENG calcs
roll-up access door	RUAD	Lw	A	61	65	68	71	75	69	55	50	50	78	101	EEI EPPENG calcs
bldg personnel access door	BPAD	Lw	A	49	53	55	59	62	59	58	51	51	66.7	89	EEI EPPENG calcs
discharge gas air cooler	DGAC	Lw	A	46	72	80	84	87	87	85	81	74	92.6	101.7	EEI EPPENG calcs
silenced gas engine exhaust	SGEE	Lw	A	37	68	79	88	90	93	94	92	80	99	102.5	based upon client data
transformer 12MVA	XMFR12	Lw	A	43	62	74	76	82	79	75	70	61	85.4	94.1	EEI EPPENG calcs
comp electric motor blower inlet	CEMBI	Lw	A	50	63	71	84	83	84	85	83	73	91	97.1	based upon client data
comp electric motor blower outlet	CEMBO	Lw	A	57	70	75	87	87	88	86	84	73	93.7	101.9	based upon client data
gas engine jacket water cooler	GEJWC	Lw	A	83	96	94	91	88	85	82	78	73	90.7	99.6	client data
electrolyzer area/pad pumps (total)	EAPP	Lw	A	48	62	73	82	88	94	92	88	80	97.5	99.5	previous projects, ENC, EEI EPPENG
water treatment system pumps (total)	WTSF	Lw	A	54	68	79	88	94	100	98	94	86	103.5	105.5	prev projects, ENC, EEI EPPENG
hydrogen compressor	H2C	Lw	A	44	53	68	74	78	84	90	87	78	92.8	93.7	prev projects, ENC, EEI EPPENG
cooling water pump	CWP	Lw	A	43	57	68	77	83	89	87	83	75	92.5	94.5	prev projects, ENC, EEI EPPENG
cooling tower fan (30kW, 16 dB atten)	CTF	Lw	A	55	71	81	85	88	87	85	82	72	93.2	102.5	prev projects, ENC, EEI EPPENG

Point Sources

Name	M.	ID	Result: PWL			Lw / Li	Value	norm. dB(A)	Correction			Sound Reduction R	Attenuatic Area (ft²)	Operating Time			KO	Freq. (Hz)	Direct.	Height (ft)	Coordinates		
			Day (dBA)	Evening (dBA)	Night (dBA)	Type			Day dB(A)	Evening dB(A)	Night dB(A)			Day (min)	Special (min)	Night (min)					X (ft)	Y (ft)	Z (ft)
gas engine exhaust port 1	+	GEEP1	99	99	99	Lw	SGEE		0	0	0						0	(none)		1 g	3086.14	1853.4	211.8
gas engine exhaust port 2	+	GEEP2	99	99	99	Lw	SGEE		0	0	0						0	(none)		1 g	3086.14	1814.77	211.8
gas engine exhaust port 3	+	GEEP3	99	99	99	Lw	SGEE		0	0	0						0	(none)		1 g	3086.14	1772.23	211.79
gas engine exhaust port 4	+	GEEP4	99	99	99	Lw	SGEE		0	0	0						0	(none)		1 g	3086.14	1731.43	211.79
SCE Retention Substation XMFR (28MVA)	+	SCEX	81.4	81.4	81.4	Lw	XMFR12		0	0	0			4			0	(none)		8 r	3550.36	1213.01	113
ARE H2 diaphragm compressor 1	+	AREDC1	92.8	92.8	92.8	Lw	H2C		0	0	0						0	(none)		6 r	2130.93	2036.15	176
ARE H2 diaphragm compressor 2	+	AREDC2	92.8	92.8	92.8	Lw	H2C		0	0	0						0	(none)		6 r	2119.86	2025.49	176
ARE H2 diaphragm compressor 3	+	AREDC3	92.8	92.8	92.8	Lw	H2C		0	0	0						0	(none)		6 r	2108.37	2014.82	176
ARE electrolyzer	+	AREE	97.5	97.5	97.5	Lw	EAPP		0	0	0						0	(none)		6 r	2049.31	2075.4	169
ARE water treatment	+	AREWT	103.5	103.5	103.5	Lw	WTSF		0	0	0						0	(none)		6 r	2056.96	2059.54	169
deoxo-dryer regen compressor	+	DDRC	92.8	92.8	92.8	Lw	H2C		0	0	0						0	(none)		6 r	2126.37	2030.72	176
H2 gas storage compressor	+	H2GSC	92.8	92.8	92.8	Lw	H2C		0	0	0						0	(none)		6 r	2151.69	1991.28	176
liquifier cooling tower fan(s)	+	LCTF	93.2	93.2	93.2	Lw	CTF		0	0	0						0	(none)		6 r	2146.78	1996.53	176
electrolyzer cooling tower fan(s)	+	ECTF	93.2	93.2	93.2	Lw	CTF		0	0	0						0	(none)		6 r	2157.89	1986.28	176
liquifier cooling water pump	+	LCWP	92.5	92.5	92.5	Lw	CWP		0	0	0						0	(none)		6 r	2164.69	2004.28	176
liquid H2 dispenser pump	+	LCWP	92.5	92.5	92.5	Lw	CWP		0	0	0						0	(none)		6 r	2601.63	1585.43	149.33

Area Sources

Name	M.	ID	Result: PWL			Result: PWL*			Lw / Li	Value	norm. dB(A)	Correction			Sound Reduction Area (ft²)	Attenuatic R	Operating Time			KO	Freq. (Hz)	Direct.	Moving Pt. Src	
			Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)				Day dB(A)	Evening dB(A)	Night dB(A)			Day (min)	Special (min)	Night (min)				Number	Day
silenced gas engine intake and jacket cooler 1	+	SGEJUC1	93.9	93.9	93.9	81.9	81.9	81.9	Lw	GEJWC++81.5	0	0	0	0	0	0	0	0	0	0	(none)	Day	Evening	
silenced gas engine intake and jacket cooler 2	+	SGEJUC2	93.9	93.9	93.9	81.9	81.9	81.9	Lw	GEJWC++81.5	0	0	0	0	0	0	0	0	0	0	(none)			
silenced gas engine intake and jacket cooler 3	+	SGEJUC3	93.9	93.9	93.9	81.9	81.9	81.9	Lw	GEJWC++81.5	0	0	0	0	0	0	0	0	0	0	(none)			
silenced gas engine intake and jacket cooler 4	+	SGEJUC4	93.9	93.9	93.9	81.9	81.9	81.9	Lw	GEJWC++81.5	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8001	+	CT8001	92.6	92.6	92.6	80.6	80.6	80.6	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
cooling tower 8002	+	CT8002	92.6	92.6	92.6	78.4	78.4	78.4	Lw	DGAC	0	0	0	0	0	0	0	0	0	0	(none)			
electric motor cooling blower 1	+	EMCB1	95.6	95.6	95.6	89.3	89.3	89.3	Lw	CEMBI++CEMBO	0	0	0	0	0	0	0	0	0	0	(none)			
electric motor cooling blower 2	+	EMCB2	95.6	95.6	95.6	89.3	89.3	89.3	Lw	CEMBI++CEMBO	0	0	0	0	0	0	0	0	0	0	(none)			
electric motor cooling blower 3	+	EMCB3	95.6	95.6	95.6	89.3	89.3	89.3	Lw	CEMBI++CEMBO	0	0	0	0	0	0	0	0	0	0	(none)			
transformer 1	+	XFMR1	85.4	85.4	85.4	76.1	76.1	76.1	Lw	XMFR12	0	0	0	0	0	0	0	0	0	0	(none)			
transformer 2	+	XFMR2	85.4	85.4	85.4	76.1	76.1	76.1	Lw	XMFR12	0	0	0	0	0	0	0	0	0	0	(none)			
transformer 3	+	XFMR3	85.4	85.4	85.4	76.1	76.1	76.1	Lw	XMFR12	0	0	0	0	0	0	0	0	0	0	(none)			
transformer 4	+	XFMR4	85.4	85.4	85.4	76.1	76.1	76.1	Lw	XMFR12	0	0	0	0	0	0	0	0	0	0	(none)			
new compressor stn bldg roof surface	+	NCSBRS	101.1	101.1	101.1	67.3	67.3	67.3	Lw	CSRA	0	0	0	0	0	0	0	0	0	0	(none)			

Vertical Area Sources

Name		M.	ID	Result: PWL			Result: PWL*			Lw / Li		Value	norm. dB(A)	Correction			Sound Reduction		Attenuatic Area (ft²)	Operating Time			KO	Freq. (Hz)	Direct.
				Day (dBA)	Evening (dBA)	Night (dBA)	Day (dBA)	Evening (dBA)	Night (dBA)	Type	Day dB(A)			Evening dB(A)	Night dB(A)	R	Day (min)	Special (min)		Night (min)					
new comp stn bldg south wall	+		NCSBSW	79.7	79.7	79.7	53.6	53.6	53.6	Lw	CSSW	0	0	0	0	0	0						3	(none)	
new comp stn bldg north wall	+		NCSBNW	79.7	79.7	79.7	53.6	53.6	53.6	Lw	CSSW	0	0	0	0	0	0						3	(none)	
new comp stn bldg east wall	+		NCSBEW	85.7	85.7	85.7	54	54	54	Lw	CSLW	0	0	0	0	0	0						3	(none)	
new comp stn bldg west wall	+		NCSBWW	85.7	85.7	85.7	54	54	54	Lw	CSLW	0	0	0	0	0	0						3	(none)	
new comp stn west rollup door	+		NCSBWRD	75.7	75.7	75.7	60.8	60.8	60.8	Lw	RUAD	0	0	0	0	0	0						3	(none)	
bldg access door	+		BAD	65.3	65.3	65.3	62.8	62.8	62.8	Lw	BPAD	0	0	0	0	0	0						3	(none)	
bldg access door	+		BAD	65.3	65.3	65.3	62.8	62.8	62.8	Lw	BPAD	0	0	0	0	0	0						3	(none)	
bldg access door	+		BAD	65.3	65.3	65.3	62.8	62.8	62.8	Lw	BPAD	0	0	0	0	0	0						3	(none)	
bldg access door	+		BAD	65.3	65.3	65.3	62.8	62.8	62.8	Lw	BPAD	0	0	0	0	0	0						3	(none)	
bldg access door	+		BAD	65.3	65.3	65.3	62.8	62.8	62.8	Lw	BPAD	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	
bldg window	+		BW	65.1	65.1	65.1	60.8	60.8	60.8	Lw	NCSBW	0	0	0	0	0	0						3	(none)	

															31	63	125	250	500	1000	2000	4000	8000	PWL	SPL	OASPL	Ref. Dist. (ft)	Qty	Notes & Data Source	
Electrolyzer Area/Pad Pumps																														
A-weighting adjustments															-39	-26	-16	-9	-3	0	1	1	-1							
pump noise OBCF adjustments															kW	13	12	11	9	9	6	9	13	19						ENC (Bies & Hansen, 2nd ed.)
Polishing Loop Pump															17	82	83	84	86	86	89	86	82	76	95					
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1	assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)	
Recirculation Pump															17	82	83	84	86	86	89	86	82	76	95					
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1	assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)	
Electrolyzer Cooling Water Pump															17	82	83	84	86	86	89	86	82	76	95					
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1	assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)	
total sound power level (dBA)																48	62	73	82	88	94	92	88	80	98					
Water Treatment System Pumps																														
															kW															
Feed Water Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Bisulfite Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Antiscalant Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
RO Unit Pumps															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Caustic Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Brine Transfer Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Brine Antiscalant Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Brine RO Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Distribution Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Booster Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
Waste Removal Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		
total sound power level (dBA)																54	68	79	88	94	100	98	94	86	103					
Hydrogen and Ancillary Compressors																														
															kW	11	15	10	11	13	10	5	8	15					EEl EPPENG Section 4.3.6	
Hydrogen Compressor															17	99	95	100	99	97	100	105	102	95	110					assume rotary or reciprocating, EEl EPPENG Section 4.3.6
(A-weighted)																44	53	68	74	78	84	90	87	78	93	85	16	3.28	1	quantity shown is one, but onsite are 3 (thus dB are for individual unit)
Deoxo-Dryer Regen Compressor															17	99	95	100	99	97	100	105	102	95	110					assume rotary or reciprocating, EEl EPPENG Section 4.3.6
(A-weighted)																44	53	68	74	78	84	90	87	78	93	85	16	3.28	1	
Hydrogen Gas Storage Compressor															17	99	95	100	99	97	100	105	102	95	110					assume rotary or reciprocating, EEl EPPENG Section 4.3.6
(A-weighted)																44	53	68	74	78	84	90	87	78	93	85	16	3.28	1	
Cooling Fans																														
															kW	9	6	6	9	12	16	19	22	30					EEl EPPENG Table 4.14 (rated speed of fan)	
Liquefier Cooling Tower Fan															30	110	113	113	110	107	103	100	97	89	118					
(A-weighted)																55	71	81	85	88	87	85	82	72	93	85	16	3.28	1	
Electrolyzer Cooling Tower Fan															30	110	113	113	110	107	103	100	97	89	118					
(A-weighted)																55	71	81	85	88	87	85	82	72	93	85	16	3.28	1	
Liquefier Cooling Water Pump															17	82	83	84	86	86	89	86	82	76	95					assume 1800 rpm, ENC (Bies & Hansen, 2nd ed.)
(A-weighted)																43	57	68	77	83	89	87	83	75	93	85	3.28	1		

Building						
Name	M.	ID	RB	Residents	Absorptior Height	
					Begin	
					(ft)	
new compressor bldg		NCB		0	0.2	53 r
PDC bldg 3		PDCB3		0	0.2	20 r
PDC bldg 1		PDCB1		0	0.2	20 r
PDC bldg 2		PDCB2		0	0.2	20 r
ARE PDC bldg 1		AREPDCB1		0	0.2	20 r
ARE unknown bldg/pad		AREUB		0	0.2	20 r
ARE unknown bldg/pad		AREUB		0	0.2	20 r
ARE unknown bldg/pad		AREUB		0	0.2	20 r
ARE unknown bldg/pad		AREUB		0	0.2	30 r
ARE unknown bldg/pad		AREUB		0	0.2	30 r
ARE unknown bldg/pad		AREUB		0	0.2	20 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	10 r
new comp stn unknown bldg		NCSUB		0	0.2	20 r
H2 filling stn		H2FS		0	0.2	10 r

Cylinder							
Name	M.	ID	Absorptior Center		Radius	Height	
			x	y			
			(ft)	(ft)	(ft)	(ft)	
gas engine exh stack 1		GEES1	0.1	3086.79	1853.62	5.52	60 r
gas engine exh stack 2		GEES2	0.1	3086.79	1814.99	5.52	60 r
gas engine exh stack 3		GEES3	0.1	3086.79	1772.45	5.52	60 r
gas engine exh stack 4		GEES4	0.1	3086.79	1731.65	5.52	60 r
gas blowdown stack		GBDS	0.1	3200.48	2228.11	5.52	60 r

Contour Line						
Name	M.	ID	OnlyPts	Height		
				Begin	End	
				(ft)	(ft)	
southern CL		SCL				
western CL		WCL				
northern CL		NCL				
eastern CL		ECL				
southeastern ridgeline 1		SERL01				
southeastern ridgeline 2		SERL02				
northeastern ridgeline 1		NERL01				
new comp stn grade		NCSG				
Brady Pkwy CL		BPCL				
Company Road E CL		CRECL				
middle ridge east CL		MRECL				
middle ridge north CL		MRNCL				
middle fence line CL		MFLCL				
southwest ridge line CL		SWRLCL				
southern ridge line CL		SRLCL				
Brady Pkwy west CL		BPWCL				
Kelly Johnson Pkwy CL		KJPCL				
Newhall Ranch Rd CL		NRRCL				
SCE substation grade CL		SCESGCL				
msl1151						
msl1149						
msl1146						
msl1147						
msl1163						
msl1170						

Receivers (all equipment [NCS+ARE+H2+SCE])

Name	M.	ID	Level Lr		Limit. Value		Land Use		Height		Coordinates		
			Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Type	Auto	Noise Type (ft)		X (ft)	Y (ft)	Z (ft)
Trinity Classical Academy		TCA	27	27	0	0	0	x	Total	5 r	5031.49	3359.7	200.32
McRory Pediatric Services		McRPS	30	30	0	0	0	x	Total	5 r	4722.43	2238.11	188.91
Oakmont of Santa Clarita		OSC	36.8	36.8	0	0	0	x	Total	5 r	1125.05	158.19	124.73
			60.5	60.5	0	0	0	x	Total	13.12 r	2885.54	1557.56	161.73
Homewood Suites by Hilton		HSH	33.2	33.2	0	0	0	x	Total	5 r	725.74	245	124.02

Receivers (only SCE Substation)

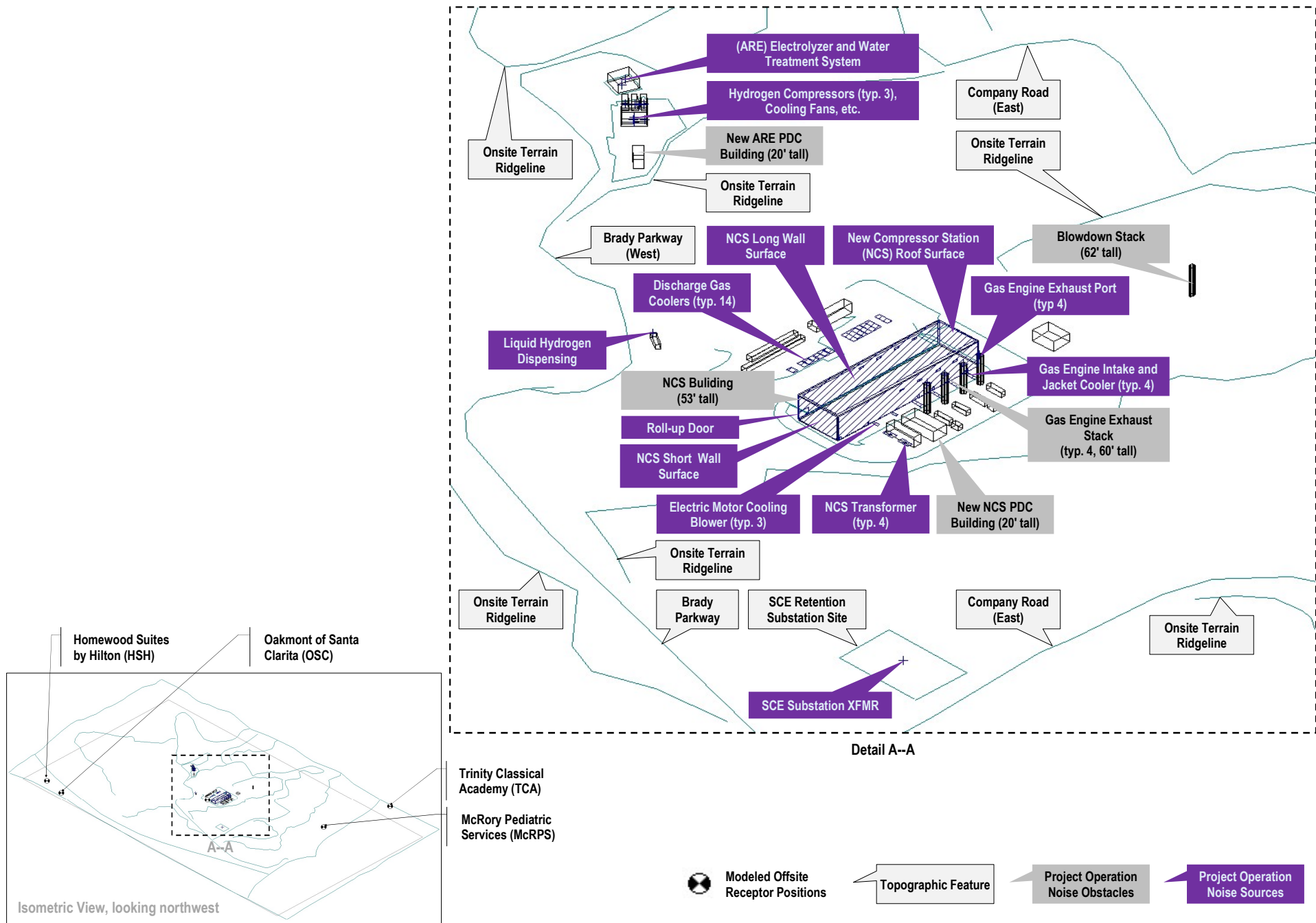
Name	M.	ID	Level Lr		Limit. Value		Land Use		Height		Coordinates		
			Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Type	Auto	Noise Type (ft)		X (ft)	Y (ft)	Z (ft)
Trinity Classical Academy		TCA	2.9	2.9	0	0	0	x	Total	5 r	5031.49	3359.7	200.32
McRory Pediatric Services		McPS	-2.2	-2.2	0	0	0	x	Total	5 r	4722.43	2238.11	188.91
Oakmont of Santa Clarita		OSC	4.8	4.8	0	0	0	x	Total	5 r	1125.05	158.19	124.73
			5.3	5.3	0	0	0	x	Total	13.12 r	2885.54	1557.56	161.73
Homewood Suites by Hilton		HSH	3.5	3.5	0	0	0	x	Total	5 r	725.74	245	124.02

Receivers (only NCS)

Name	M.	ID	Level Lr		Limit. Value		Land Use		Height		Coordinates		
			Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Type	Auto	Noise Type (ft)		X (ft)	Y (ft)	Z (ft)
Trinity Classical Academy		TCA	26.3	26.3	0	0	0	x	Total	5 r	5031.49	3359.7	200.32
McRory Pediatric Services		McRPS	29.7	29.7	0	0	0	x	Total	5 r	4722.43	2238.11	188.91
Oakmont of Santa Clarita		OSC	35.7	35.7	0	0	0	x	Total	5 r	1125.05	158.19	124.73
			60.5	60.5	0	0	0	x	Total	13.12 r	2885.54	1557.56	161.73
Homewood Suites by Hilton		HSH	32.7	32.7	0	0	0	x	Total	5 r	725.74	245	124.02

Receivers (only ARE)

Name	M.	ID	Level Lr		Limit. Value		Land Use		Height		Coordinates		
			Day (dBA)	Night (dBA)	Day (dBA)	Night (dBA)	Type	Auto	Noise Type (ft)		X (ft)	Y (ft)	Z (ft)
Trinity Classical Academy		TCA	18.5	18.5	0	0	0	x	Total	5 r	5031.49	3359.7	200.32
McRory Pediatric Services		McPS	17.2	17.2	0	0	0	x	Total	5 r	4722.43	2238.11	188.91
Oakmont of Santa Clarita		OSC	30.4	30.4	0	0	0	x	Total	5 r	1125.05	158.19	124.73
			37.3	37.3	0	0	0	x	Total	13.12 r	2885.54	1557.56	161.73
Homewood Suites by Hilton		HSH	23.5	23.5	0	0	0	x	Total	5 r	725.74	245	124.02

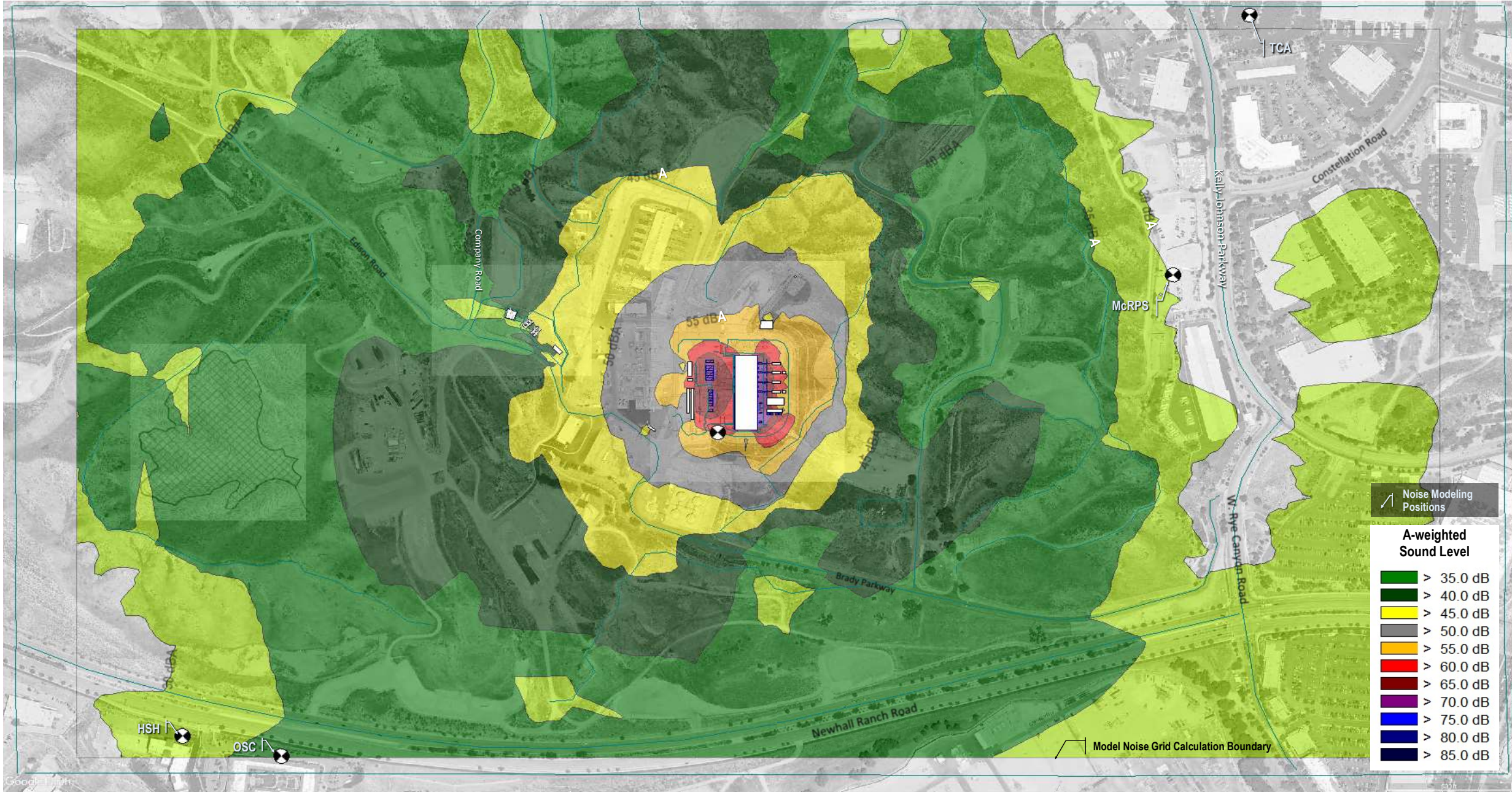


SOURCE: Dudek 2024

DUDEK

FIGURE 1
Isometric Views of Project Operations Sound Propagation Model Space

SoCal Gas - Honor Rancho Compressor Station Modernization Project SEIR (Dudek Project No. 13161.03)



SOURCE: Google 2024; Dudek 2024

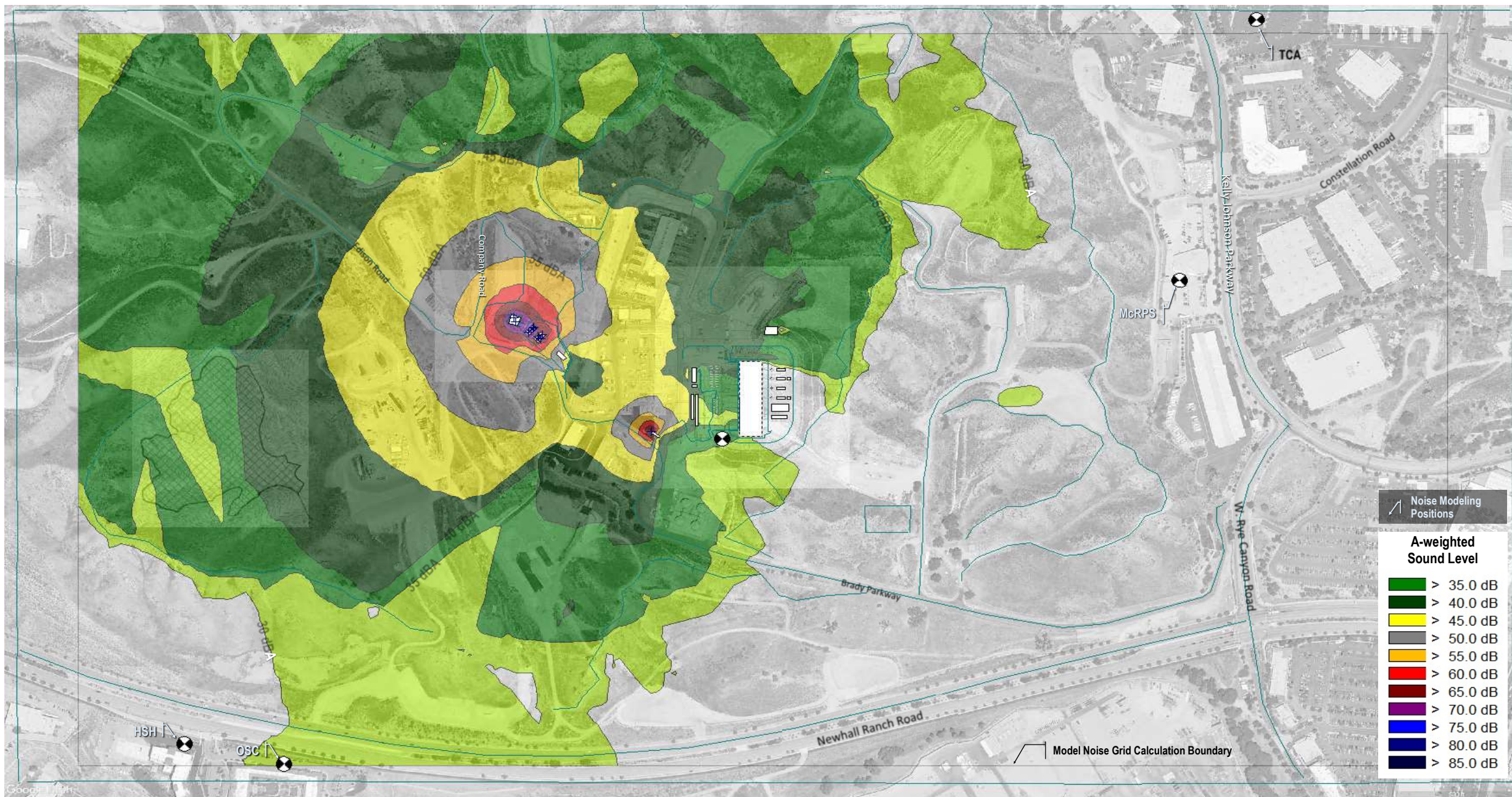
DUDEK



0 190.5 381 Feet

FIGURE 2
Predicted Stationary Source Operation Noise from Proposed Project -- Four Engine-Driven and Two Motor-Driven Compressors from New Compressor Station only

SoCal Gas - Honor Rancho Compressor Station Modernization Project SEIR (Dudek Project No. 13161.03)



SOURCE: Google 2024; Dudek 2024

DUDEK

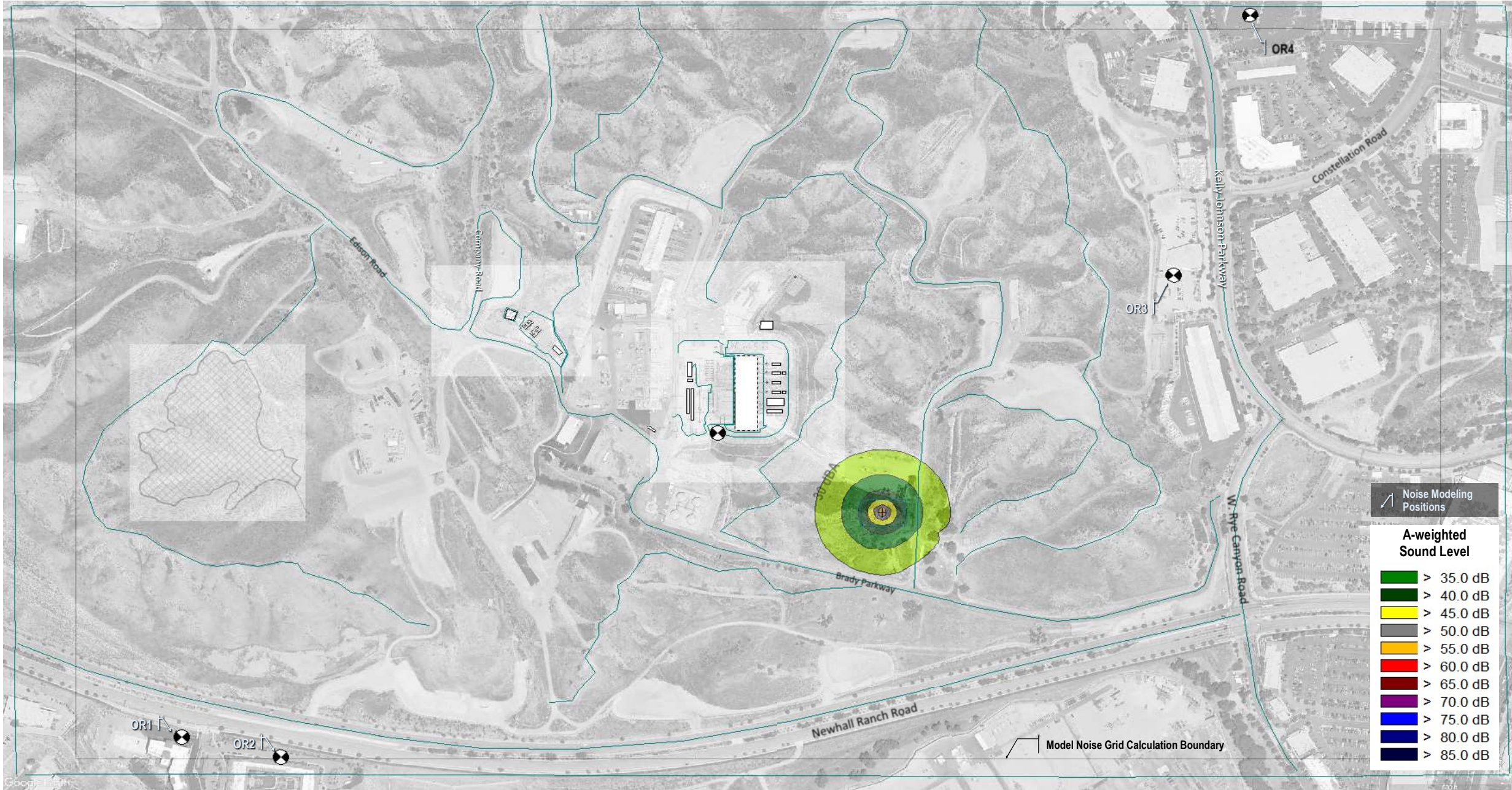


0 190.5 381 Feet

FIGURE 3

Predicted Stationary Source Operation Noise from Proposed Project -- ARE (Hydrogen Production) only

SoCal Gas - Honor Rancho Compressor Station Modernization Project SEIR (Dudek Project No. 13161.03)



SOURCE: Google 2024; Dudek 2024

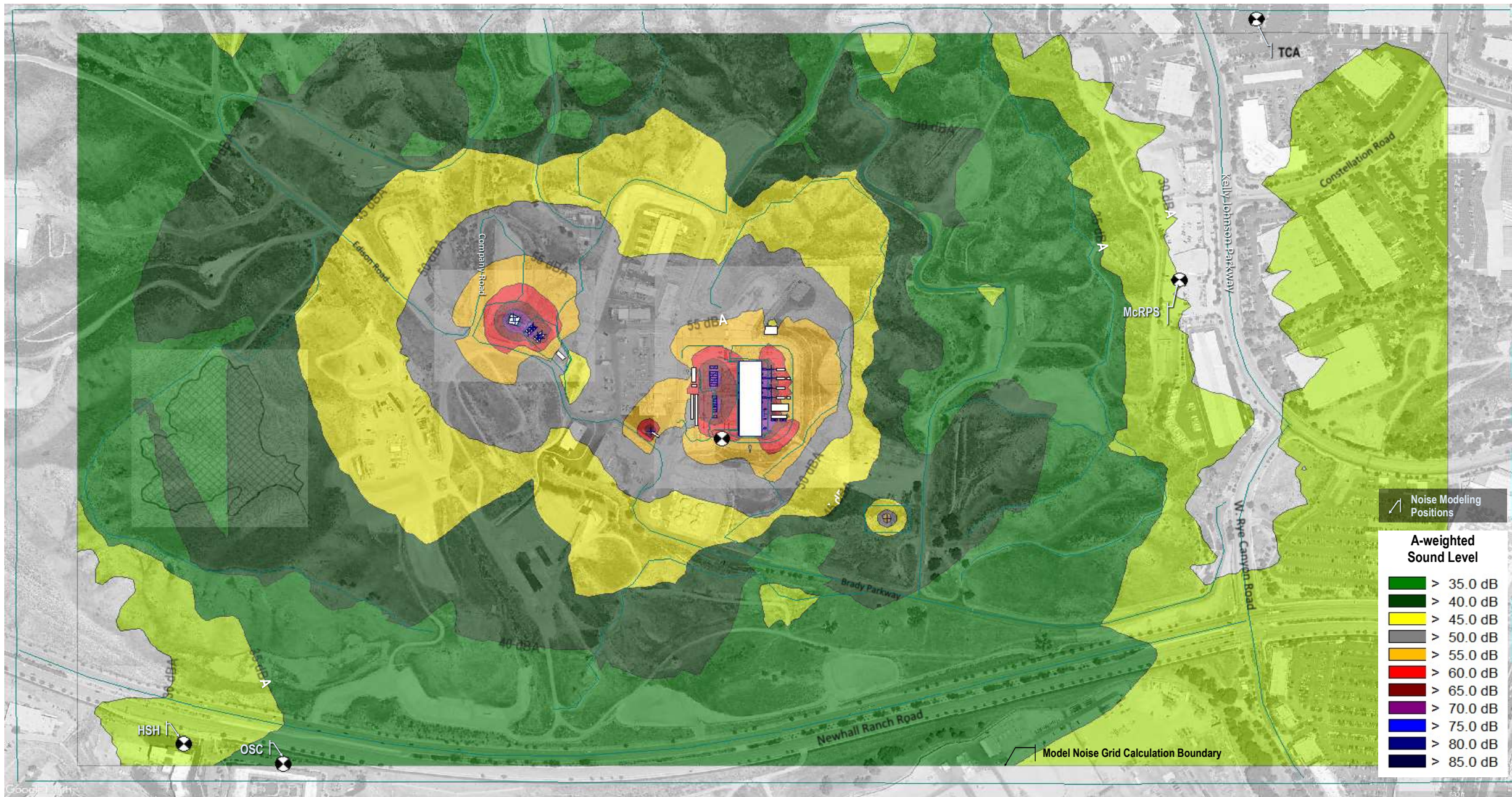
DUDEK



0 190.5 381 Feet

FIGURE 4
Predicted Stationary Source Operation Noise from Proposed Project -- SCE Retention Substation only

SoCal Gas - Honor Rancho Compressor Station Modernization Project SEIR (Dudek Project No. 13161.03)



SOURCE: Google 2024; Dudek 2024

DUDEK



0 190.5 381 Feet

FIGURE 5
Predicted Stationary Source Operation Noise from Proposed Project -- All Sources (NCS+ARE+SCE)

SoCal Gas - Honor Rancho Compressor Station Modernization Project SEIR (Dudek Project No. 13161.03)