Appendix D

Noise Modeling Outputs

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Appendix D - 1

Traffic Noise Model Calculations

Project: 12287 SCWD - Newell Creek Pipeline

Noise Level Descriptor: Ldn
Site Conditions: Soft
Traffic Input: ADT
Traffic K-Factor: 10

	Segment Description and Location			Input										Output				
						Distance to Directional Centerline, (feet)$_4$		Traffic Distribution Characteristics					Ldn,	Distance to Contour, (feet)$_3$				
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Med	% Hvy	% Day	% Night	(dBA)$_{5,6,7}$	70 dBA	65 dBA	60 dBA	55 dBA
Existing Conditions																		
1	GRAHAM HILL RD	HWY 9	MT HERMON Rd	27,896	35	100	100	97.0%	2.0%	1.0%	80.0%	20.0%	65.4	49	107	230	495
2	GRAHAM HILL RD	MT HERMON Rd	LOCKWOOD LN	6,749	35	100	100	97.0%	2.0%	1.0%	80.0%	20.0%	59.3	19	41	89	192
3	GLEN ARBOR RD	HWY 9	GLEN ARBOR RD	4,337	30	100	100	99.0%	1.0%	0.0%	80.0%	20.0%	54.5	9	20	43	93
4	SR 9	GRAHAM HILL	GLEN ARBOR RD	21,727	35	100	100	97.0%	2.0%	1.0%	80.0%	20.0%	64.3	42	90	194	419

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Appendix D

Project-Generated Construction Source Noise Prediction Model

Newell Creek Pipeline Project - Conventional Open-Cut Trenching

Pipeline - Road Removal/Pipe Installation

Location	Distance to Nearest Receiver in feet	Combined Predicted Noise Level (L_{eq} dBA)
Threshold*	470	60.0
	124	75.0
	100	77.4
	150	72.8
	200	69.6
	250	67.1
	300	65.1
	350	63.3
	400	61.8
	450	60.5
	500	59.3
	550	58.3

Equipment Assumptions	Qty.	Reference Emission Noise Levels (Lmax) at 50 feet[1]	Usage Factor[1]
Excavator	**1**	85	0.4
Tractor	**1**	84	0.4
Tractor	**1**	84	0.4

Ground Type	Soft
Source Height	5
Receiver Height	5
Ground Factor	0.58

Predicted Noise Level[2]	L_{eq} dBA at 50 feet[2]
Excavator	81.0
Tractor	80.0
Tractor	80.0

Predicted Combined Noise Level (L_{eq} dBA at 50 feet)
85.2

Sources:

1 - Obtained from the FHWA Roadway Construction Noise Model, January 2006.

2 - Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006.

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects; and

D = Distance from source to receiver.

*Project specific threshold