

Brittney Rourke

From: Camie Anderson
Sent: Monday, August 15, 2011 11:07 AM
To: Reid Shockey
Cc: Brittney Rourke
Subject: Iron Mountain - Noise and Air Quality Peer Review
Attachments: Air Analysis Review.pdf; Noise Analysis Review.pdf *See Noise Tab

Reid,

Attached are two memorandums from Michael Minor & Associates, Inc. They reviewed the studies associated with noise and air quality and have some comments that need to be addressed prior to the issuance of SEPA.

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Prepared for: Brittney Rourke
 Prepared by: Carl Bloom
 Date: Monday, August 15, 2011
 Subject: Review of Iron Mountain Quarry Air Quality Study
 Project: Iron Mountain Quarry

At the request of the Shockey Planning Group, we have performed a review of the Technical Air Quality Study of the proposed Iron Mountain Quarry. We were provided with copies of reports dated January 4, 2011 and February 28, 2011 as produced by Envirometrics, Inc. of Seattle Washington. We reviewed this material and discussed this project with the Olympic Region Clean Air Agency. In general, we found that the report's estimation of dust concentrations was insufficient and was not performed using the standard data sources and dispersion models. Therefore, the estimation of dust concentrations should be reanalyzed. Also, the report would be more understandable if it contained a site plan of the project, showing the pollution sources, and a map of the vicinity with the locations of sensitive properties and model receptors.

In addition, the following detailed comments are provided:

Page & Chapter/Section Title	Comments
Page 1- Introduction	The report of Feb. 28 2011 states "Because of the extensive controls imposed on quarry operations and motor vehicles by the U.S. Environmental Protection Agency (hereafter "EPA") and local clean air agencies it is highly unlikely that there will be significant adverse air quality effects." <i>This statement needs to be backed up with modeled results.</i>
Page 1- Composition of Dust	This discussion was adequate
Page 2- Trace Chemicals in Dust and Air Quality	This discussion was adequate
Page 3 Dust and Air Quality	The procedure recommended by ORCAA is to use EPA's AP-42 to develop the emissions to be used in the Screen3 model. The calculations should have been done to develop emission rates and pollution concentrations for the New Shine Quarry rather than extrapolate it from the Haller Quarry. <i>Recommend using ORCAA methods.</i>
Page 4- Emissions from Vehicles	Good analysis
Page 4- Effects on Wind Speed	Interesting discussion & analysis.
Page 6- Greenhouse Gas Emissions	Good & thorough analysis

Reid Shockey

From: Brent Carson <bcarson@GordonDerr.com>
Sent: Monday, August 29, 2011 10:06 AM
To: Reid Shockey; Harper, Kenneth W.; Johnson, David Wayne
Cc: Dale N. Johnson
Subject: Response to Peer Review Comments on Air Analysis
Attachments: Air Emissions Inventory and Results.pdf; Ruby Response to Peer Review Comments.pdf; Air SCREEN3 results.pdf

Attached please find a memorandum and attachments from Envirometrics, Inc., responding to the peer review comments on his prior air quality analysis for the New Shine Quarry.


If you want hard copies, please let me know. Otherwise, please consider this part of the record for Iron Mountain Quarry's supplemental SEPA analysis.

Brent Carson

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Maximum Production	200 tph
# Transfer Points	12
# Crushers	3
Hours per Day	12 0.5
Days per Year	166.67 0.45663014

	PM10 lbs/ton	PM10 lbs/hr	PM10 tpy	PM10 g/sec	PM10 Total	Per unit
Screening	0.00074	0.15	0.15	0.018648	0.07308	0.02436
Primary Crushing	0.00054	0.11	0.11	0.013608		
Secondary Crushing	0.00054	0.32	0.32	0.040824		
Conveyor Transfers	0.000046	0.11	0.11	0.0139104		0.0011592
Truck Loading	0.0001	0.02	0.02	0.00252		0.00252
Total		0.7	0.7			

	PM25 lbs/ton	PM25 lbs/hr	PM25 tpy	PM25 g/sec	PM25 Total	Per unit
Screening	0.00005	0.01	0.01	0.00126	0.00378012	0.00126004
Primary Crushing	0.0001	0.02	0.02	0.00252		
Secondary Crushing	0.0001	0.00	0.00	1.1592E-07		
Conveyor Transfers	0.000013	0.00	0.00	1.769E-07		1.4742E-08
Truck Loading	0.000028	0.01	0.01	0.0007056		0.0007056
Total		0.0	0.0			

All emission factors from Chapter 11.19.2, "Crushed Stone Processing and Pulverized Mineral Processing" 8/04

Pollutant	Model out	1-hr	8-hr	24-hr	Annual
PM10	124.693		125	87	19 4.6
NAAQS					150
SIL					5
Source	Model out	Number	Total at 260m		
Screen/Crushing	35.6		3	106.8	
Transfer point	1.22		12	14.64	
Truck loading	3.253		1	3.253	
			Total	124.693	

Pollutant	Model out	1-hr	8-hr	24-hr	Annual
PM25	6.43708624		6	5	0.97 0.24
NAAQS					35.00 15.00
SIL					none none
Source	Model out	Number	Total at 260m		
Screen/Crushing	1.842		3	5.526	
Transfer point	1.55E-05		12	0.00018624	
Truck loading	0.9109		1	0.9109	
			Total	6.43708624	

**Response to Peer Review Comments on Air Quality Effects of New Shine Quarry
Mike Ruby**

Introduction and Conclusions

Jefferson County submitted an earlier document prepared by Envirometrics, Inc., “Potential Air Quality and Wind Effects of New Shine Quarry Operations”, to peer review to assist in evaluating the submission in support of a SEPA determination. In general, the peer reviewer found the document to be a fair presentation of the best available information. However, the peer reviewer raised a question on the use of a comparison to another, nearby quarry operation as the only way to illustrate the impact of the proposed New Shine quarry. The reviewer requested a direct computation of the possible air quality impact of particulate matter emissions by development of an emission inventory and completion of a dispersion modeling exercise. This report provides the requested computation. The results continue to support the conclusion reached earlier, that “it is highly unlikely that there will be significant adverse air quality effects”.

Particulate Matter Air Quality Effects

This report, as the earlier evaluation of the Haller Quarry, focuses only on particulate matter emissions and air quality effects. Public exposure to the air quality effects of carbon monoxide are more related to transportation emissions, which were described in the prior document and accepted by the peer reviewer. Similarly, potentially toxic compounds in the quarry emissions were described earlier as inconsequential, which was also accepted by the peer reviewer.

The earlier report utilized a comparison to the Haller Quarry in Sequim, WA permitted by the Olympic Region Clean Air Agency (ORCAA) under permit 09NOC664 as best evidence for a SEPA finding of no significant adverse air quality impact. This was done in order to present the responsible officials with a real world comparison rather than a hypothetical one. The Haller Quarry is a significantly larger operation than the proposed New Shine quarry so would be a conservative comparison of potential effects.

In order to present a comparison that continues to be comparable to something the responsible officials can see and personally evaluate, the requested computation uses the same procedure for air quality evaluation as was employed in the approved ORCAA NOC permit application for the Haller Quarry but with more detailed and updated elements. In this case the proposed 3 crushers, 12 transfer points and truck loadout are separately modeled and the results added together rather than lumped into a single point source with greater plume rise. The points of impact for the separate sources would more likely be at different locations, so placing them all at the same location makes this analysis very conservative. The emissions inventory is based on updated emission factors from the U.S. Environmental Protection Agency (EPA) document *AP-42* (Chapter

11.19.2, “Crushed Stone Processing and Pulverized Mineral Processing” 8/04). And results are presented here for both the National Ambient Air Quality Standards (NAAQS) for less than 10 micrometer particulate matter (PM₁₀) and fine airborne particulate matter (PM_{2.5}). The distance to the nearest receptor is based on the proposed location of the processing equipment and property lease boundary shown in the New Shine General Site Plan of 2/22/10. Simple terrain was assumed as a highly stable atmosphere at the modeled wind speed would only marginally allow pollutant rise to the elevated terrain above the quarry pit, again making the analysis very conservative. Other details of the point source emissions are based on actual equipment similar to those that would be utilized at the quarry.

The results of this modeling analysis are presented in the table below. The model (EPA’s SCREEN3) results are for a one-hour maximum impact period. In this case the maximum is for very stable atmospheric conditions and a 4 meter/second wind speed. This result is then adjusted by a standard EPA factor to account for wind direction variance for the 24-hour and annual periods. A further adjustment is made to the 24-hour results to account for the daylight hours operations limitation and to the annual results to account for the projected 2000 hours per year operation. (Modeling submitted for a permit application would not include these reductions in order to avoid additional permit conditions. However such an adjustment is appropriate for a SEPA analysis.)

	24-hr	Annual	
PM ₁₀	19		µg/m ³
NAAQS	150		µg/m ³
PM _{2.5}	0.97	0.24	µg/m ³
NAAQS	35	15	µg/m ³

Both the PM₁₀ and the PM_{2.5} results reported here are significantly less than their corresponding NAAQS. It is important to note that the requirement in federal law for the level of the NAAQS is to protect the public health with “an adequate margin of safety” (42 USC 7409). The previous report described the likely PM_{2.5} impacts as less than 1 µg/m³. That estimate still holds.

The projected air quality impacts are sufficiently less than their respective ambient air quality standards that it is reasonable to conclude that “it is highly unlikely that there will be significant adverse air quality effects”, in this case from particulate matter, from the proposed project.

Copies of the spreadsheet of the emissions inventory and modeling results and the output files of the SCREEN3 model are provided separately.

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

PM10 Crushers

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.243600E-01
STACK HEIGHT (M) = 4.0000
STK INSIDE DIAM (M) = 1.3500
STK EXIT VELOCITY (M/S) = 2.0000
STK GAS EXIT TEMP (K) = 293.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 1.823 M**4/S**2.

*** FULL METEOROLOGY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
260.	35.60	6	2.5	2.5	10000.0	5.35	9.89	5.11	NO
300.	31.69	6	1.0	1.0	10000.0	9.64	11.35	5.85	NO
400.	30.42	6	1.0	1.0	10000.0	9.64	14.73	7.23	NO
500.	26.72	6	1.0	1.0	10000.0	9.64	18.04	8.55	NO
600.	22.88	6	1.0	1.0	10000.0	9.64	21.30	9.82	NO
700.	19.52	6	1.0	1.0	10000.0	9.64	24.51	11.05	NO
800.	16.81	6	1.0	1.0	10000.0	9.64	27.68	12.08	NO
900.	14.61	6	1.0	1.0	10000.0	9.64	30.82	13.08	NO
1000.	12.82	6	1.0	1.0	10000.0	9.64	33.92	14.05	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
260. 35.60 6 2.5 2.5 10000.0 5.35 9.89 5.11 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	35.60	260.	0.

08/27/11
 10:34:10

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

PM10 Transfer points

SIMPLE TERRAIN INPUTS:

SOURCE TYPE	=	POINT
EMISSION RATE (G/S)	=	0.115920E-02
STACK HEIGHT (M)	=	5.0000
STK INSIDE DIAM (M)	=	0.8500
STK EXIT VELOCITY (M/S)	=	2.0000
STK GAS EXIT TEMP (K)	=	293.0000
AMBIENT AIR TEMP (K)	=	293.0000
RECEPTOR HEIGHT (M)	=	1.5000
URBAN/RURAL OPTION	=	RURAL
BUILDING HEIGHT (M)	=	0.0000
MIN HORIZ BLDG DIM (M)	=	0.0000
MAX HORIZ BLDG DIM (M)	=	0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.723 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
 *** ANEMOMETER HEIGHT WIND SPEED OF 4.00 M/S ONLY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
260.	1.220	6	4.0	4.0	10000.0	4.57	9.85	5.04	NO
300.	1.035	6	4.0	4.0	10000.0	4.57	11.24	5.64	NO
400.	0.7141	6	4.0	4.0	10000.0	4.57	14.64	7.06	NO
500.	0.5209	6	4.0	4.0	10000.0	4.57	17.97	8.40	NO
600.	0.3971	6	4.0	4.0	10000.0	4.57	21.24	9.69	NO
700.	0.3135	6	4.0	4.0	10000.0	4.57	24.46	10.94	NO
800.	0.2573	6	4.0	4.0	10000.0	4.57	27.64	11.98	NO
900.	0.2156	6	4.0	4.0	10000.0	4.57	30.78	12.99	NO
1000.	0.1839	6	4.0	4.0	10000.0	4.57	33.89	13.96	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
 260. 1.220 6 4.0 4.0 10000.0 4.57 9.85 5.04 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.220	260.	0.

08/27/11
 10:35:52

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

PM10 Truckloadout

SIMPLE TERRAIN INPUTS:
 SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.252000E-02
 STACK HEIGHT (M) = 3.0000
 STK INSIDE DIAM (M) = 2.0000
 STK EXIT VELOCITY (M/S) = 2.0000
 STK GAS EXIT TEMP (K) = 293.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 4.000 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
 *** ANEMOMETER HEIGHT WIND SPEED OF 4.00 M/S ONLY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	U10M STAB (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
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260.	3.253	6	4.0	4.0	10000.0	3.00	9.88	5.10	NO
300.	2.655	6	4.0	4.0	10000.0	3.00	11.27	5.69	NO
400.	1.730	6	4.0	4.0	10000.0	3.00	14.66	7.10	NO
500.	1.223	6	4.0	4.0	10000.0	3.00	17.99	8.44	NO
600.	0.9154	6	4.0	4.0	10000.0	3.00	21.25	9.72	NO
700.	0.7138	6	4.0	4.0	10000.0	3.00	24.47	10.96	NO
800.	0.5813	6	4.0	4.0	10000.0	3.00	27.65	12.01	NO
900.	0.4844	6	4.0	4.0	10000.0	3.00	30.79	13.01	NO
1000.	0.4113	6	4.0	4.0	10000.0	3.00	33.90	13.98	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
260. 3.253 6 4.0 4.0 10000.0 3.00 9.88 5.10 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	3.253	260.	0.

08/27/11
10:44:02

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

PM25 Crushers

SIMPLE TERRAIN INPUTS:
SOURCE TYPE = POINT
EMISSION RATE (G/S) = 0.126004E-02
STACK HEIGHT (M) = 4.0000
STK INSIDE DIAM (M) = 1.3500
STK EXIT VELOCITY (M/S)= 2.0000
STK GAS EXIT TEMP (K) = 293.0000
AMBIENT AIR TEMP (K) = 293.0000
RECEPTOR HEIGHT (M) = 1.5000
URBAN/RURAL OPTION = RURAL
BUILDING HEIGHT (M) = 0.0000
MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 1.823 M**4/S**2.

*** FULL METEOROLOGY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
260.	1.842	6	2.5	2.5	10000.0	5.35	9.89	5.11	NO
300.	1.639	6	1.0	1.0	10000.0	9.64	11.35	5.85	NO
400.	1.573	6	1.0	1.0	10000.0	9.64	14.73	7.23	NO
500.	1.382	6	1.0	1.0	10000.0	9.64	18.04	8.55	NO
600.	1.184	6	1.0	1.0	10000.0	9.64	21.30	9.82	NO
700.	1.010	6	1.0	1.0	10000.0	9.64	24.51	11.05	NO
800.	0.8696	6	1.0	1.0	10000.0	9.64	27.68	12.08	NO
900.	0.7559	6	1.0	1.0	10000.0	9.64	30.82	13.08	NO
1000.	0.6630	6	1.0	1.0	10000.0	9.64	33.92	14.05	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
 260. 1.842 6 2.5 2.5 10000.0 5.35 9.89 5.11 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	1.842	260.	0.

08/27/11
 10:41:28

*** SCREEN3 MODEL RUN ***
 *** VERSION DATED 96043 ***

PM25 Transfer points

SIMPLE TERRAIN INPUTS:
 SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.147420E-07
 STACK HEIGHT (M) = 5.0000
 STK INSIDE DIAM (M) = 0.8500
 STK EXIT VELOCITY (M/S)= 2.0000
 STK GAS EXIT TEMP (K) = 293.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000

MIN HORIZ BLDG DIM (M) = 0.0000
MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 0.723 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
*** ANEMOMETER HEIGHT WIND SPEED OF 4.00 M/S ONLY ***

*** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
260.	0.1552E-04	6	4.0	4.0	10000.0	4.57	9.85	5.04	NO
300.	0.1316E-04	6	4.0	4.0	10000.0	4.57	11.24	5.64	NO
400.	0.9082E-05	6	4.0	4.0	10000.0	4.57	14.64	7.06	NO
500.	0.6624E-05	6	4.0	4.0	10000.0	4.57	17.97	8.40	NO
600.	0.5051E-05	6	4.0	4.0	10000.0	4.57	21.24	9.69	NO
700.	0.3987E-05	6	4.0	4.0	10000.0	4.57	24.46	10.94	NO
800.	0.3272E-05	6	4.0	4.0	10000.0	4.57	27.64	11.98	NO
900.	0.2742E-05	6	4.0	4.0	10000.0	4.57	30.78	12.99	NO
1000.	0.2339E-05	6	4.0	4.0	10000.0	4.57	33.89	13.96	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
260. 0.1552E-04 6 4.0 4.0 10000.0 4.57 9.85 5.04 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
DWASH=NO MEANS NO BUILDING DOWNWASH USED
DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

*** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.1552E-04	260.	0.

08/27/11
10:38:35

*** SCREEN3 MODEL RUN ***
*** VERSION DATED 96043 ***

PM25 Truck loadout

SIMPLE TERRAIN INPUTS:

SOURCE TYPE = POINT
 EMISSION RATE (G/S) = 0.705600E-03
 STACK HEIGHT (M) = 3.0000
 STK INSIDE DIAM (M) = 2.0000
 STK EXIT VELOCITY (M/S) = 2.0000
 STK GAS EXIT TEMP (K) = 293.0000
 AMBIENT AIR TEMP (K) = 293.0000
 RECEPTOR HEIGHT (M) = 1.5000
 URBAN/RURAL OPTION = RURAL
 BUILDING HEIGHT (M) = 0.0000
 MIN HORIZ BLDG DIM (M) = 0.0000
 MAX HORIZ BLDG DIM (M) = 0.0000

THE REGULATORY (DEFAULT) MIXING HEIGHT OPTION WAS SELECTED.
 THE REGULATORY (DEFAULT) ANEMOMETER HEIGHT OF 10.0 METERS WAS ENTERED.

BUOY. FLUX = 0.000 M**4/S**3; MOM. FLUX = 4.000 M**4/S**2.

*** STABILITY CLASS 6 ONLY ***
 *** ANEMOMETER HEIGHT WIND SPEED OF 4.00 M/S ONLY ***

 *** SCREEN AUTOMATED DISTANCES ***

*** TERRAIN HEIGHT OF 0. M ABOVE STACK BASE USED FOR FOLLOWING DISTANCES ***

DIST (M)	CONC (UG/M**3)	STAB	U10M (M/S)	USTK (M/S)	MIX HT (M)	PLUME HT (M)	SIGMA Y (M)	SIGMA Z (M)	DWASH
260.	0.9109	6	4.0	4.0	10000.0	3.00	9.88	5.10	NO
300.	0.7434	6	4.0	4.0	10000.0	3.00	11.27	5.69	NO
400.	0.4844	6	4.0	4.0	10000.0	3.00	14.66	7.10	NO
500.	0.3425	6	4.0	4.0	10000.0	3.00	17.99	8.44	NO
600.	0.2563	6	4.0	4.0	10000.0	3.00	21.25	9.72	NO
700.	0.1999	6	4.0	4.0	10000.0	3.00	24.47	10.96	NO
800.	0.1628	6	4.0	4.0	10000.0	3.00	27.65	12.01	NO
900.	0.1356	6	4.0	4.0	10000.0	3.00	30.79	13.01	NO
1000.	0.1152	6	4.0	4.0	10000.0	3.00	33.90	13.98	NO

MAXIMUM 1-HR CONCENTRATION AT OR BEYOND 260. M:
 260. 0.9109 6 4.0 4.0 10000.0 3.00 9.88 5.10 NO

DWASH= MEANS NO CALC MADE (CONC = 0.0)
 DWASH=NO MEANS NO BUILDING DOWNWASH USED
 DWASH=HS MEANS HUBER-SNYDER DOWNWASH USED
 DWASH=SS MEANS SCHULMAN-SCIRE DOWNWASH USED
 DWASH=NA MEANS DOWNWASH NOT APPLICABLE, X<3*LB

 *** SUMMARY OF SCREEN MODEL RESULTS ***

CALCULATION PROCEDURE	MAX CONC (UG/M**3)	DIST TO MAX (M)	TERRAIN HT (M)
SIMPLE TERRAIN	0.9109	260.	0.


Camie Anderson

From: Michael Minor <mminor@drnoise.com>
Sent: Tuesday, August 30, 2011 12:08 PM
To: Brittney Rourke
Cc: Camie Anderson; Reid Shockey
Subject: RE: Response to Peer Review Comments on Air Analysis

Hi Brittney, I've reviewed the material Envirometrics provided and we are satisfied that it details the NSQ's emissions correctly and adequately. This material addresses my concerns with the original Air Quality submission. We have no further comments or concerns on the air quality report.

Thanks.

Michael Minor
mminor@drnoise.com
Michael Minor & Associates, Inc.
4923 SE 36th Avenue
Portland, OR 97202
ph. 503.220.0495 (Portland)
ph. 206.220.0495 (Seattle)
e-fax. 866.847-0495

 Please consider the impact to the environment before printing this email.

From: Brittney Rourke [<mailto:brouke@shockeyplanning.com>]
Sent: Monday, August 29, 2011 12:10 PM
To: Michael Minor
Cc: Camie Anderson; Reid Shockey
Subject: FW: Response to Peer Review Comments on Air Analysis

Hi Michael,
Attached is Envirometrics response to your review comments. Will you please take a look to make sure they address your concerns.
Thanks!

Brittney Rourke | Planner

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Everett, WA 98201
P: 425.258.9308
F: 425.259.4448
brouke@shockeyplanning.com

From: Brent Carson [<mailto:bcarson@GordonDerr.com>]
Sent: Monday, August 29, 2011 10:06 AM
To: Reid Shockey; Harper, Kenneth W.; Johnson, David Wayne
Cc: Dale N. Johnson
Subject: Response to Peer Review Comments on Air Analysis

Attached please find a memorandum and attachments from Envirometrics, Inc., responding to the peer review comments on his prior air quality analysis for the New Shine Quarry.

If you want hard copies, please let me know. Otherwise, please consider this part of the record for Iron Mountain Quarry's supplemental SEPA analysis.


Brent Carson

GordonDerr LLP

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