City of Albuquerque

Environmental Health Department

Richard J. Berry, Mayor

Interoffice Memorandum

August 8, 2016

To: **Regan Eyerman, Environmental Health Scientist**

From: **Jeff Stonesifer, Senior Environmental Health Scientist**

Subject: **Review of model for Albuquerque Metals Recycling, Inc.**

Permit # **1529-M3**

Site Location
3339 2nd Street SW
Easting: 348,545m Northing: 3,878,138m Zone:13

Overview of Facilities
The modeling has been updated to add the motorhouse building on the southwest part of the property. Of all the buildings on the Albuquerque Metals Recycling (AMR) property, the motorhouse building is the most likely to cause some building downwash.

Conclusions of Dispersion Modeling
Modeling was performed for TSP, PM_{10}, and $PM_{2.5}$ using AERMOD. Compliance was demonstrated for appropriate NAAQS and NMAAQS.

Assumptions used in the modeling review

1. Operating hours:
    a. No operations on Sunday
    b. All sources 24 hours per day Monday through Saturday
2. Continuous emissions during operating hours
3. A fence or some other barrier restricts access to the property.
4. The input to the shredder is limited to 400,000 tons per year.
5. The hourly throughput for the shredder is 200 tons per hour.
6. A daily maximum of 120 trucks.

Modeling conducted in-house demonstrates compliance with applicable regulatory requirements. Modeling files are archived, are part of the public record for this permit application, and are available for printing at X:\ENVIRONMENTAL HEALTH\SHARE\EH-STAFF\Air Dispersion Modeling\Sources2\ABQ Metals Recycling\1529-M3. A modeling protocol was not submitted for this fourth submission of modeling files.

Model (s) Used
AERMOD

Modeling Parameters
Rural dispersion coefficients; plume depletion for TSP; hourly emissions factors; regulatory default parameters

Emission rates used in the review can be seen below in **Table 1**.

Table 1: Particulate Emission Rates for sources

Source ID	Emission Unit Description	TSP (lbs/hr)	PM10 (lbs/hr)	PM2.5 (lbs/hr)
CYCLONE	Cyclone Bleed Off (Unit 2)	0.857	0.857	0.857
SHRED	Shredder (Unit 1)	0.474	0.474	0.474
TROMMEL	Trommel Screen (Unit 6)	0.110	0.037	0.003
ESC	ESC ISS Sand Jet (Unit 7)	0.138	0.046	0.003
ECS	Fines ECS (Unit 8)	0.014	0.006	0.001
TP_F	Transfer Points Ferrous System (Unit 3)	0.063	0.021	0.006
TP_NF	Transfer Points Non-Ferrous (Unit 4)	0.007	0.002	0.00065
TP_PT	Transfer Points Post Trommel (Unit 5)	0.030	0.010	0.003
PILE1	ASR Pile 1 (Unit 9)	0.004	0.002	0.00037
PILE2	ASR Pile 2 (Unit 9)	0.004	0.002	0.00037
PILE3	ASR Pile 3 (Unit 9)	0.004	0.002	0.00037
PILE4	ASR Pile 4 (Unit 9)	0.004	0.002	0.00037
TP_PRET	Transfer Points Pre-Trommel (Unit 12)	0.007	0.002	0.00065
TP_FINES	Fines Processing Conveyors (Unit 13)	0.014	0.005	0.001
HR_00## (1-38)	Haul Road (38 volume sources)	1.980	0.510	0.051
	Totals	**3.710**	**1.978**	**1.402**

Table 2: Point-source parameters

Source ID	Easting (m)	Northing (m)	Elevation (ft)	Stack Diameter (feet)	Exit Velocity (fps)	Exit Temp (°F)	Stack Height (feet)
CYCLONE	348562	3878079	4938	1.0	63.7	ambient	55

Table 3: Non-Road Volume Source Parameters

Source	Easting (m)	Northing (m)	Elevation (ft)	Release Height (ft)	Horizontal Dimension (ft)	Vertical Dimension (ft)
SHRED	348538	3878088	4938	30.0	3.8	7.6
TROMMEL	348546	3878141	4938	13.1	3.8	7.6
ESC	348548	3878160	4938	16.4	3.8	7.6
ECS	348531	3878143	4938	16.4	3.8	7.6
TP_F	348569	3878082	4938	13.1	1.5	3.1
TP_NF	348554	3878086	4938	13.1	1.5	3.1
TP_PT	348548	3878160	4938	6.6	1.5	3.1
PILE1	348484	3878265	4939	10.0	7.0	9.3
PILE2	348592	3878220	4939	10.0	7.0	9.3
PILE3	348630	3878200	4938	10.0	7.0	9.3
PILE4	348610	3878170	4938	10.0	7.0	9.3
TP_PRET	348517	3878146	4938	6.6	1.5	3.1
TP_FINES	348517	3878146	4938	6.6	1.5	3.1

Dimensions for haul roads were as follows:
Release Height of 3.4 meters (11.2 feet); Horizontal Dimension of 6.1 meters (19.8 feet); Vertical Dimension of 3.2 meters (10.4 feet)
These dimensions correspond to an actual road width of 7 meters, or about 23 feet. The adjusted width was 13 meters and the distance between the volume sources in the model was 13 meters.

Receptor Grid
Receptor spacing was less than 50 meters along the fenceline. Beyond the fence, receptors were spaced at a resolution of 50 meters out to 500 meters from the fenceline; beyond 500 meters and out to 1 kilometer, receptor spacing was 100 meters.

Meteorological Data
KABQ 2001-2005 processed with AERMET v15181 for PM_{10} and $PM_{2.5}$ models
KABQ 2003 processed with AERMET v15181 for TSP

Adjacent Sources
DPC Industries, permit #0803-M2

Terrain Used
USGS NED files

Modeling Results

Table 4: Impact of emissions vs. Ambient Air Quality Standards

Pollutant	Averaging Time	Modeled Impact ($\mu g/m^3$)	Background ($\mu g/m^3$)	Model + Background ($\mu g/m^3$)	Most stringent Standard ($\mu g/m^3$)	Pass/Fail
TSP	24-hour	116.7	31	147.7	150	P
TSP	Annual	8.4	31	39.4	60	P
PM_{10}	24-hour	39.0	31	70.0	150	P
$PM_{2.5}$ (H8H)	24-hour	8.8	18.0	26.8	35	P
$PM_{2.5}$	Annual	0.9	7.5	8.4	12	P

Discussion
Normally the TSP model suffices to demonstrate compliance with the PM10 standard. This is because the 24-hour TSP standard is more restrictive of PM10 than the 24-hour PM10 standard itself. However in this case, only one year of meteorological (met) data was used to model TSP which is not a criteria pollutant. The Air Quality Program (AQP) requires demonstration of compliance for criteria pollutants use 5 years of met data where possible.

Nearby DPC Industries was excluded from the models because their permitted TSP emission rate is 0.01 lb/hr.

Correspondence with the consultant regarding the modeling is attached. AMR agreed to erect additional fencing when faced with the possibility of having to include receptors on their own property in the models.

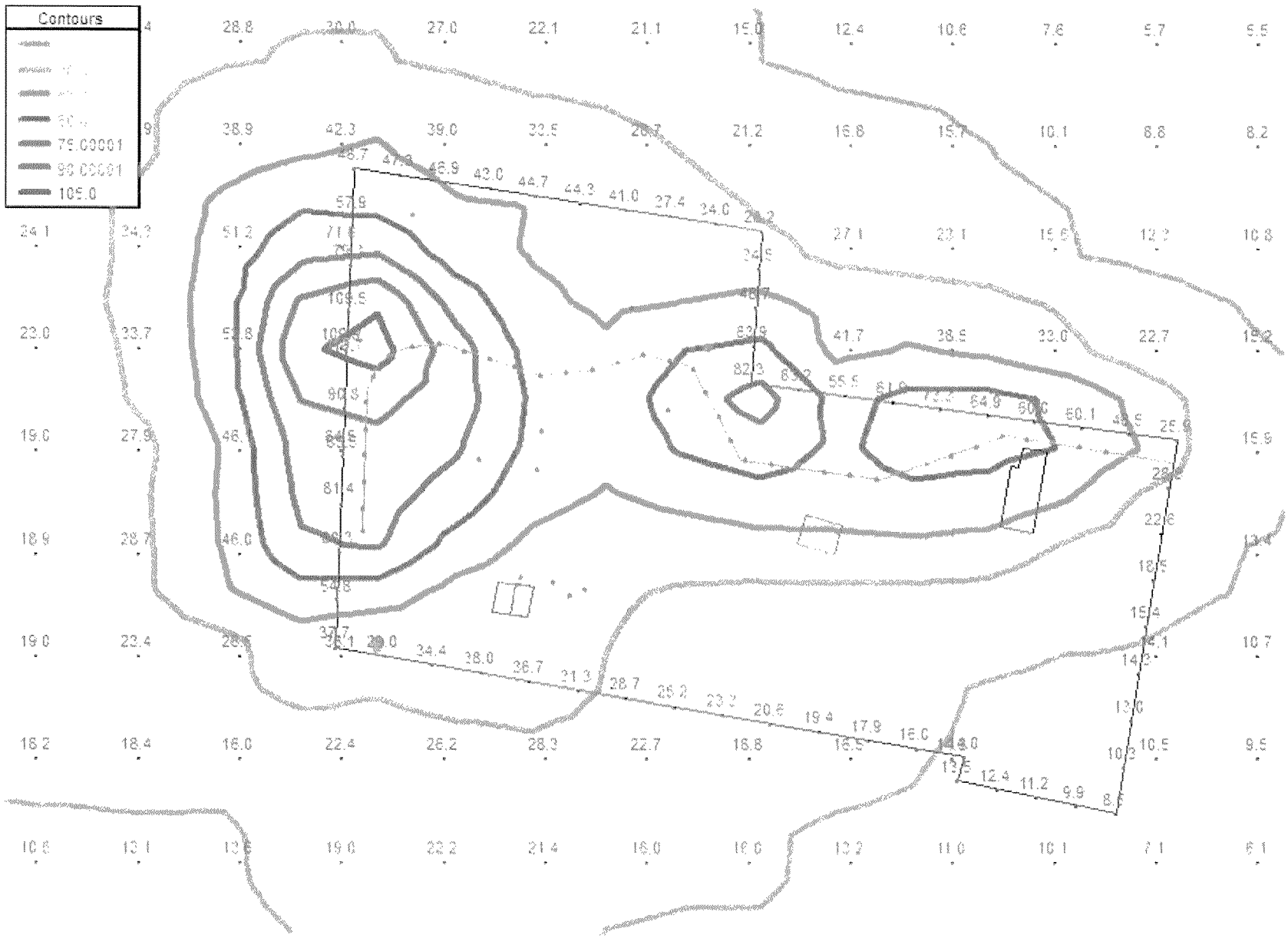
The inclusion of the motorhouse building resulted in slightly higher results along the southwestern fenceline of the property. However the modeling still passed all applicable ambient air quality standards.

An hourly emissions factor of 0.27 was used for the annual averaging models. The numerator in this factor was simply the permitted annual throughput. The denominator was the permitted hourly throughput multiplied by total hours of operation in a year. This is an accepted methodology for annual average modeling.

The Technical Analysis Section recommends accepting this model.

w/o background

Albuquerque Metal Recycle 20NMAC 11.41 Permit Modeling Mod C:\DispModeling\Sources\ABQ Metals Recycling\1529-M3\fourth review\AMRTSP 24 Hr080316_5yrs_TSP.GRF

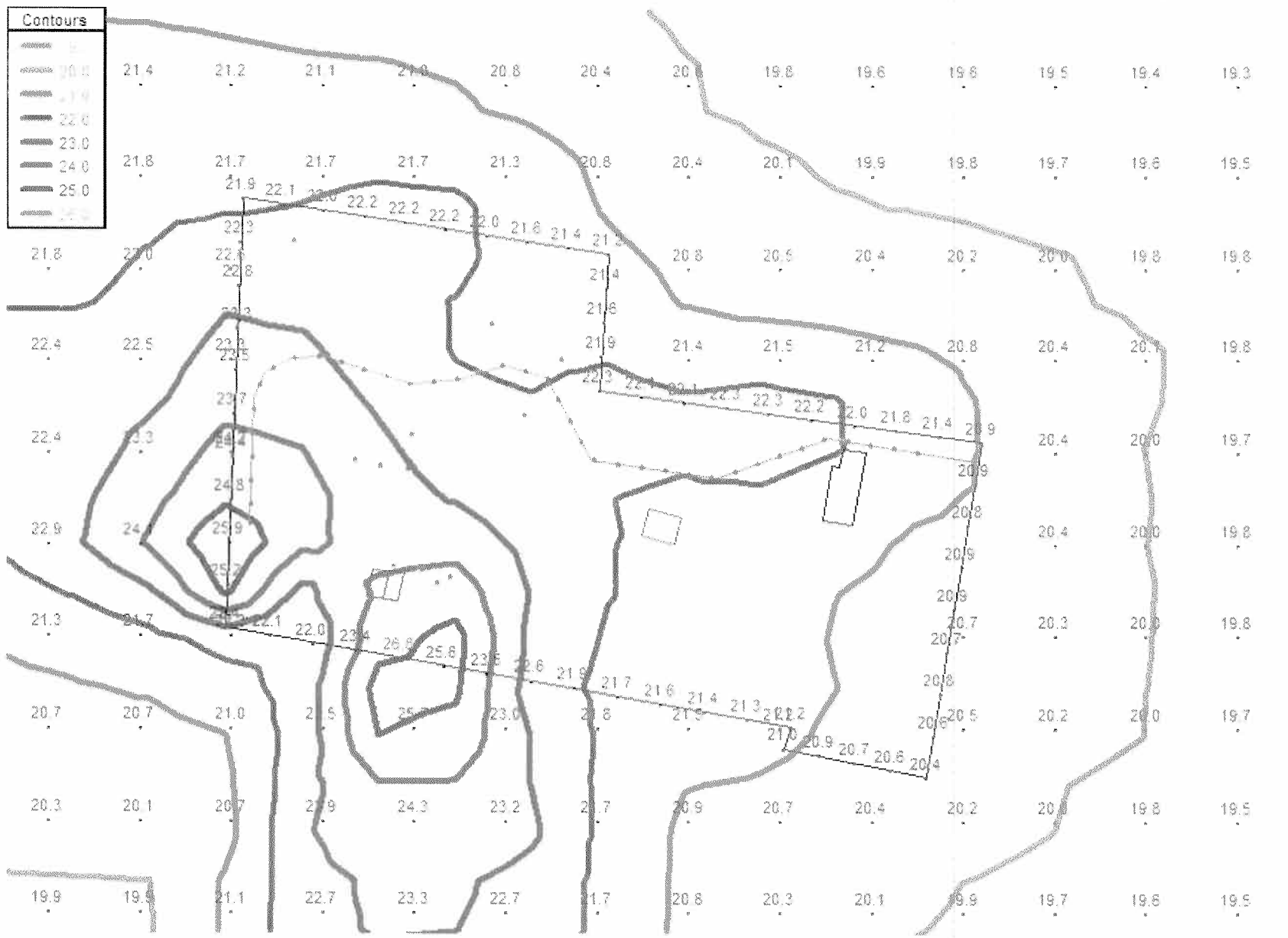


Scale: 1 " = 70.2 Meters

GROUP ALL - HIGH 1ST HIGH 24-HR VALUES

Max = 116.7389 (248452.4, 3878195)

w/ background



Jeff
Albuquerque Metal Recycler agrees to install fencing/barriers along all property not controlled by them within 60 days of permit issuance.

Hopefully this will resolve issues brought up in your review of the modeling protocol and final modeling can proceed.

Thanks

MONTROSE

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From: Stonesifer, Jeff W. [mailto:JStonesifer@cabq.gov]
Sent: Thursday, March 03, 2016 10:22 AM
To: Paul Wade
Cc: Eyerman, Regan V.; Hal Rosen; Tavarez, Isreal L.
Subject: RE: comments on protocol for Albuquerque Metals Recycling

Paul,

Rossmoor Road is a quarter of a mile away from Albuquerque Metals Recycling (AMR). The gate for Barr Canal at Rossmoor Rd. doesn't restrict access to the operations of AMR. As it stands now there is no fence or other barrier that prohibits public access to AMR's operations from the west. There are also some gaps in the fence on the south side that they'll need to be able to close. Otherwise the air on the AMR property is ambient air and receptors will be required on the property in the modeling.

Regards,

Jeff Stonesifer
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From: Paul Wade [mailto:PWade@montrose-env.com]
Sent: Wednesday, March 02, 2016 5:02 PM
To: Paul Wade; Stonesifer, Jeff W.