DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

N683720014

FACILITY: ROCK RECYCLERS		SRN / ID: N6837
LOCATION: 5699 READY RD, S ROCKWOOD		DISTRICT: Jackson
CITY: S ROCKWOOD		COUNTY: MONROE
CONTACT: James Jackson , Load Operator		ACTIVITY DATE: 11/30/2012
STAFF: Terseer Hemben	COMPLIANCE STATUS: Pending	SOURCE CLASS: MINOR
SUBJECT: Concrete Manufacturing: Fugitive dust		
RESOLVED COMPLAINTS:		

INSPECTED BY : Terseer Hemben, MDEQ
PERSONNEL PRESENT : Thomas Downs
FACILITY PHONE NUMBER : 734-783-7400
FACILITY FAX : 734-379-0311
DATES OF INSPECTION : 1/19/2013
SRN: N6837
Address: 5699 Ready Rd, S. Rockwood MI

FACILITY BACKGROUND: Great Lakes Aggregates Companies-Rock Recyclers.

The Rock Recyclers (RR) is a concrete and rock recycling facility that processes stripped concrete, aggregate rocks and associated road construction materials for reuse. The rock/concrete yard is located in Rockwood; however the facility has portable crushers that relocate to places of need. The company operates a portable non-metallic mineral processing plant that is used to crush and separate aggregate. A front-end loader deposits aggregate into a feeder. The feeder regulates flow into a crusher. The crushed material is conveyed to a screen. After separation, the sized aggregate is conveyed to stockpiles until loaded onto trucks for transport to the end user.

INSPECTION NARATIVE
I arrived at the site at 1300 hours. The purpose of the visit was to conduct a scheduled annual compliance inspection at the company operations. Temperature at the hour was 21 F, wind speed 15 mph coming from SSW, and humidity 68%. I met Mr. Kinney who introduced me to the facility. He informed that Mr. Thomas Downs who was responsible for conducting me around was away from site. He would not be able to provide records to me; however he would pass the request to Mr. Downs later. At the site, I observed the plant was shut down for the season. There were no workers on site. I did not observe the operations; however I relied on past recordkeeping content and practice to show the pattern of compliance with the permit. Mr. Downs sent the records to AQD on February 25, 2013.

COMPLAINT/COMPLIANCE HISTORY:

There have not been records of citizen complaints or LOV's on this operation since in AQD files.

OUTSTANDING CONSENT ORDERS:

None

OUTSTANDING LOV'S:

None

OPERATING SCHEDULE/PRODUCTION RATE
RR operates seasonally as work demands.

PERMIT COMPLIANCE AND EVALUATION:
Based on General Permit # 217-00 referencing NSPS-Subpart OOOO, and

NESHAP –RICE, Title 40 CFR, Part 63, Subpart ZZZZ (NESHAP ZZZZ) involving electric generators on site the inspection determined as follows:

1. In compliance-RR demonstrated there had not been any modification to any system, and/ or process at the above referenced facility since last 3 years (Rule 336.1216). Item#1 on the cover letter confirms the assessment.

2. In compliance –RR demonstrated the visible emissions from the crusher, screen, conveyors; transfer points, wheel loaders, truck traffic, material piles, and etc. were less than the applicable emission limits [SC 1.2]. The visible emission test attached confirmed the assessment.

3. In compliance- RR demonstrated the annual emissions at facility did not exceed 2,000,000 tpy [SC 1.3]. Records attached (attachment B) and MAERS 2011 report confirmed the assessment.

4. In compliance - RR demonstrated the facility only crushed recycled asphalt, and not asbestos tailings or asbestos containing materials [SC 1.5]. Item# 4 on the cover sheet confirmed the assessment.

5. In compliance-RR demonstrated the facility complied with the program for continuous fugitive emissions control specified in Appendix A of the General Permit [SC 1.6]. Attachment C confirmed the assessment.

6. In compliance-RR demonstrated the crusher and screen was equipped with water spray, maintained and working in satisfactory manner while the crusher was in operation [SC 1.7]. Attachment C confirms records of daily maintenance.

7. In compliance - RR demonstrated the plant was tested and results were on file [SC 1.8]. Attachment A confirmed the assessment.

8. In compliance-RR demonstrated the facility kept and maintained daily and annual records of the amount of material processed for each site at which the Company operated [SC 1.9]. Attachment B confirmed the assessment.

9. In compliance - RR demonstrated the company labeled all equipment [1.11]. Attachment D confirmed the assessment.

10. In compliance - RR verified the distance from the crusher to the nearest residential or commercial establishment met the requirement in the general permit [1.13]. Item# 10 confirmed the distances were demonstrated on site maps submitted with the facility relocation.

Inspection Areas of Focus:

1. The entire plant equipment was inspected.
2. Operational practices of containing fugitive dust-At the time of inspection, the plant was shut down. Staff did not observe operational practices.
3. Other associated area of interest- the plant environment was clean. There were no pools of standing water on site, except the truck tire wetting pool.

FINAL COMPLIANCE DETERMINATION:

The inspection of RR facility indicated the source had been conducting rock aggregate recycling for a long period. The Company demonstrated good record keeping practice. AQD determines that RR operated in compliance with the general permit conditions.

NAME th DATE 3/4/13 SUPERVISOR W. M

Great Lakes Aggregates Companies

February 25, 2013

Mr. Terseer Hemben
Environmental Engineer
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
Air Quality Division
3058 West Grand Blvd.
Suite 2-300
Detroit, MI 48202

Subject: Great Lakes Aggregates, Rock Recyclers Facility
Information Request Response
State Registration No. N6837

Dear Mr. Hemben:

Great Lakes Aggregates, LLC (Great Lakes Aggregates) has prepared this correspondence in response to the Michigan Department of Environmental Quality (MDEQ) Air Quality Division (AQD) Pre-Inspection Conference information request that was received by Great Lakes Aggregates for its Rock Recyclers facility (N6837). The following numbered items are responses that correspond to the numbered information/records requested in the Pre-Inspection Conference document.

1. The Rock Recyclers facility has not been modified in the last three years.

2. As demonstrated in the visible emissions test report presented in Attachment A, the visible emissions from the Rock Recyclers facility are less than the applicable emission limits.

3. The material throughput for the Rock Recyclers facility is less than the permitted 2,000,000 TpY. Attachment B presents facility throughput records for 2012 and MAERS emission calculations for reporting year 2011 and 2012.

4. The Rock Recyclers facility only crushes concrete and asphalt.

5. The Rock Recyclers facility complies with the program for continuous fugitive emissions control in Appendix A of the general permit. Attachment C presents examples of facility daily operator records indicating water application, as well as photographs of the water spray devices installed on the equipment.

6. The crusher and screen are equipped with water spray devices. The water spray devices are maintained and are in good working order. Attachment C presents examples of facility daily operator records where any maintenance performed is recorded.

7. Attachment A presents the visible emissions test report for the Rock Recyclers facility. A copy of the test report is on file with Great Lakes Aggregates.

8. Attachment B presents facility throughput records for 2012, demonstrating the amount of material processed by the Rock Recyclers facility.

5699 Ready Road • P.O. Box 406 • S. Rockwood, MI 48179 • Phone 734-783-7400 • Fax 734-379-0311

9. The Rock Recyclers equipment is appropriately labeled. Attachment D contains photographs of equipment labels.

10. The Rock Recyclers facility is operated at least 500, respectively, from any residential or commercial establishment or place of public assembly as specified in the Permit to Install. These distances are demonstrated on site maps submitted with the facility relocation notifications.

Please contact us or Derenzo and Associates at (734) 464-3880 or escamp@derenzo.com if you have any questions or require additional information.

Sincerely,

GREAT LAKES AGGREGATES, LLC

Tom Downs
Operations Manager

Attachments

ATTACHMENT A
VE REPORT

Derenzo and Associates, Inc.
Environmental Consultants

August 12, 2002

Mr. Michael E. Smith
General Manager
ROCK RECYCLERS
7500 Reaume Road
Newport, MI 48166

Subject: Results of visible emission compliance testing conducted on the portable non-metallic mineral processing facility in operation at Rock Recyclers in Auburn Hills, Michigan

Dear Mr. Smith:

Derenzo and Associates, Inc. is pleased to provide Rock Recyclers with three copies of the results of visible emission compliance tests conducted on the portable non-metallic mineral processing facility in Auburn Hills, Michigan. One copy of the results is for Rock Recycler's records, two copies are required to be forwarded to the Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD), Southeast Michigan District Office at the address specified on the enclosed sample cover letter.

The average results of the visible emission measurements for the tested processes were between 0% and <5% opacity.

Derenzo and Associates, Inc. appreciates the opportunity to be of service to Rock Recyclers.

Please contact me if you have any questions.

Sincerely,

DERENZO AND ASSOCIATES, INC.

Rosana Foco
Project Engineer

Enclosures

39395 Schoolcraft • Livonia, MI 48150-5036 • (734) 464-3880 • FAX (734) 464-4368

August 12, 2002

Air Quality Division
SOUTHEAST MICHIGAN DISTRICT HEADQUARTERS
38980 Seven Mile Road
Livonia, MI 48152-1006

Subject: Results of visible emission compliance testing conducted on new equipment installed at the portable non-metallic mineral processing facility in operation at Rock Recyclers in Auburn Hills, Michigan

Rock Recyclers is pleased to provide the Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD), Southeast Michigan District Office with two copies of the results of visible emission compliance tests conducted on new equipment installed at the portable non-metallic mineral processing facility in operation in Auburn Hills, Michigan.

The average results of the visible emission measurements for the tested processes were between 0% and <5% opacity.

Ms. Rosana Foco of Derenzo and Associates, Inc. performed the visible emission compliance testing on August 8, 2002.

If you require additional information please contact me at (734) 586-7385 or Ms. Foco at (734) 464-3880.

Please contact me if you have any questions.

Sincerely,

ROCK RECYCLERS

Michael E. Smith
General Manager

Enclosures

Derenzo and Associates, Inc.
Environmental Consultants

RESULTS
OF
VISIBLE EMISSION COMPLIANCE TESTING
CONDUCTED
ON NEW EQUIPMENT INSTALLED AT
ROCK RECYCLERS PORTABLE NON-METALLIC
MINERAL PROCESSING FACILITY

Auburn Hills, Michigan

Project No. 0201012

August 12, 2002

39395 Schoolcraft • Livonia, MI 48150-5036 • (734) 464-3880 • FAX (734) 464-4368

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Derenzo and Associates, Inc.
Environmental Consultants

RESULTS OF VISIBLE EMISSION COMPLIANCE TESTING CONDUCTED ON NEW EQUIPMENT INSTALLED AT ROCK RECYCLERS PORTABLE NON-METALLIC MINERAL PROCESSING FACILITY

1.0 INTRODUCTION

Rock Recyclers retained Derenzo and Associates, Inc. to conduct compliance testing on visible emissions (VE) from new equipment installed at their portable non-metallic mineral processing facility currently located in Auburn Hills, Michigan. This testing is a requirement of General Air Use Permit No. 217-00 which was issued to Rock Recyclers by the Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD).

Ms. Rosana Foco of Derenzo and Associates, Inc conducted the VE testing on August 8, 2002. Mr. Michael E. Smith of Rock Recyclers coordinated the testing project.

Mr. Tom Maza of the Air Quality Division, Southeast District Office verbally approved a visible emission test plan dated May 2, 2002, which outlines the emission measurement protocol and procedures used for the compliance testing, before the field measurements were performed and was notified of the compliance testing dates.

2.0 PROCESS DESCRIPTION

Rock Recyclers operates a portable non-metallic mineral processing plant that is used to crush and separate aggregate. A front-end loader deposits aggregate into a feeder. The feeder regulates flow into a crusher. The crushed material is conveyed to a screen. After separation, the sized aggregate is conveyed to stockpiles until loaded onto trucks for transport to the end user.

Figures 1 is a flow diagram of the Rock Recyclers non-metallic mineral processing operations, and identifies all of the tested processes.

3.0 TEST PROCEDURES

United States Environmental Protection Agency (USEPA) Method 9, *Visible Determination of the Opacity of Emissions From Stationary Sources,* was used to determine the opacity (VE) of the fugitive dust emissions generated by the processing operations. A qualified visible emission observer observed the VE test.

The VE measurement sampling times and procedures used for the testing are consistent with those specified in the visible emissions test plan and the requirements of 40 CFR Part 60, Subparts A (General Provisions) and OOO (Federal New Source Performance Standards for Nonmetallic Mineral Processing Plants) regulations.

Section §60.675(c)(3) specifies that Method 9 observations for fugitive emissions from sources affected under §60.672(b) may be reduced from 3 hours (30, 6 minute averages) to 1 hour (10, 6 minute averages), if no individual opacity readings exceed 10% and no more than 3 readings of 10% are observed for the first 1 hour measurement period.

Section §60.675(c)(4) specifies that Method 9 observations for fugitive emissions from crushers affected under §60.672(c) may be reduced from 3 hours to 1 hour, if no opacity readings exceed 15% and no more than 3 readings of 15% are observed for the first 1-hour measurement period.

Section 60.675(c)(1)(iii) specifies Method 9 observation procedures that were utilized and are applicable to affected facilities using wet dust suppression for particulate matter control (i.e., a visible mist is sometimes generated by the emissions and is not to be considered a visible emission and the observation of emissions is to be made at a point in the plume where the mist is no longer visible).

As specified in the visible emission test plan, process operations that were water suppressed and considered saturated, were not monitored for VE.

Appendix A provides a list of the emission points.

Appendix B provides a copy of USEPA Method 9.

Appendix C provides a copy of the certificate issued to the qualified observer.

4.0 TEST RESULTS

The average VE test measurements performed on the identified portable crushing processes were between 0% and <5% opacity.

Rock Recyclers processed about 1400 tons of aggregate over the four (4) hour VE testing period, averaging a processing rate of 350 TpH.

Table 4.1 presents the results for the VE test measurements recorded for the portable non-metallic mineral processing facility.

Appendix D provides a copy of field sampling data sheets.

Report Prepared By:

Rosana Foco
Project Engineer

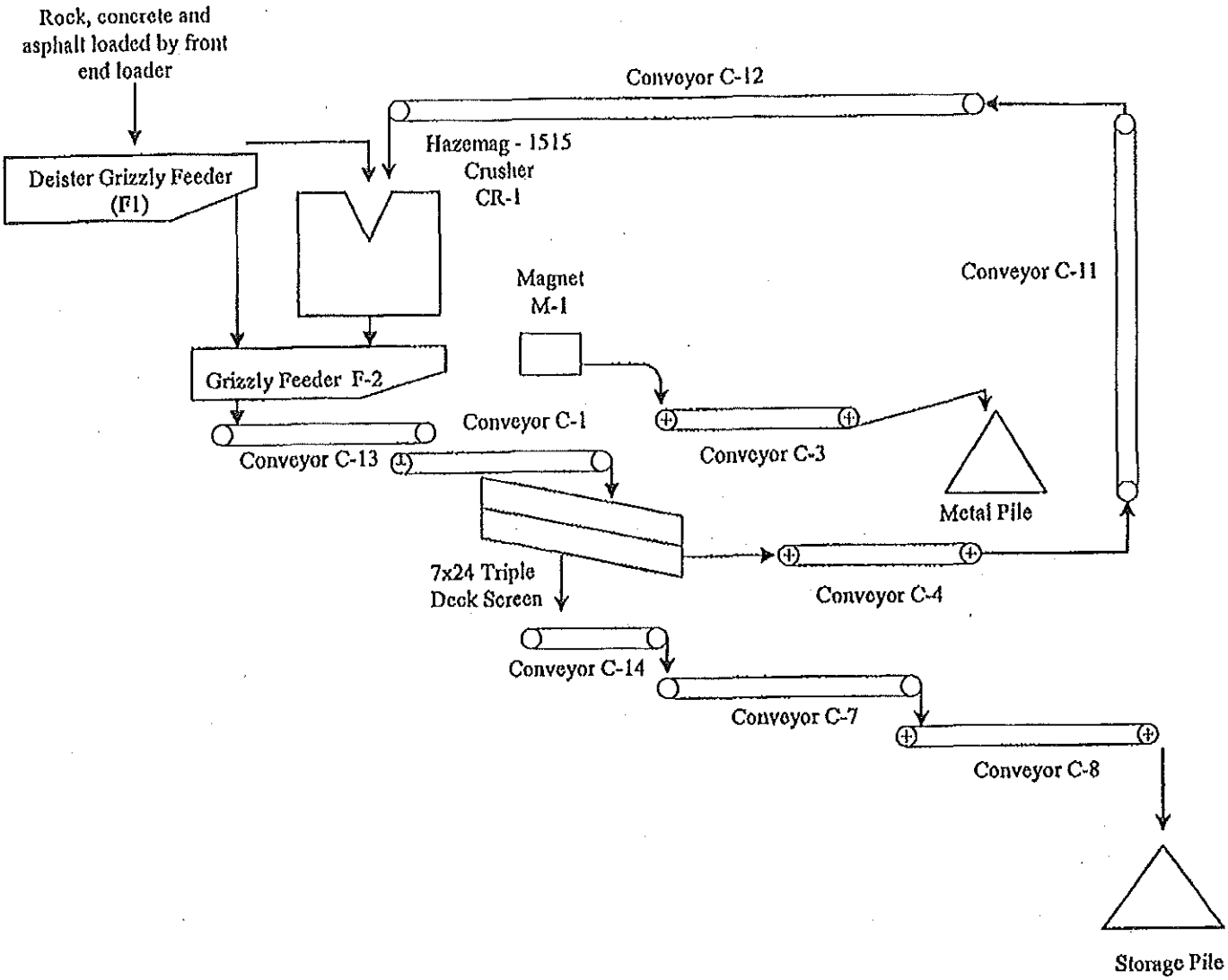


Figure 1. Rock Recyclers portable non-metallic aggregate processing facility

Table 4.1. Visible Emission Measurements

Emission Source Description	Test Date	Start Time	Stop Time	Maximum Opacity	Minimum Opacity	Maximum Average Opacity
1. Feeder (F2) to Conveyor (C13)	8/8/2002	9:30	10:30	0%	0%	<5%
2. Conveyor (C13)	8/8/2002	9:30	10:30	0%	0%	<5%
3. Conveyor (13) to Conveyor (C1)	8/8/2002	9:30	10:30	0%	0%	<5%
4. Screen (SCR1) to Conveyor (C14)	8/8/2002	10:32	11:32	0%	0%	<5%
5. Conveyor (C14)	8/8/2002	10:32	11:32	0%	0%	<5%
6. Conveyor (C14) to Conveyor (C7)	8/8/2002	10:32	11:32	0%	0%	<5%
7. Conveyor (C4) to Conveyor (C11)	8/8/2002	11:55	12:55	0%	0%	<5%
8. Conveyor (C11)	8/8/2002	11:55	12:55	0%	0%	<5%
9. Conveyor (11) to Conveyor (C12)	8/8/2002	11:55	12:55	0%	0%	<5%
10. Conveyor (C12)	8/8/2002	1:00	2:00	0%	0%	<5%
11. Conveyor (C12) to Crusher (CR1)	8/8/2002	1:00	2:00	0%	0%	<5%

APPENDIX A

EMISSION POINTS

EMISSION POINTS

Rock Recyclers
New Equipment
Portable Non-Metallic Mineral Processing Facility
Auburn Hills, Michigan

1. Feeder (F2) to Conveyor (C13)
2. Conveyor (C13)
3. Conveyor (C13) to Conveyor (C1)
4. Screen (SCR1) to Conveyor (C14)
5. Conveyor (C14)
6. Conveyor (C14) to Conveyor (C7)
7. Conveyor (C4) to Conveyor (C11)
8. Conveyor (C11)
9. Conveyor (C11) to Conveyor (C12)
10. Conveyor (C12)
11. Conveyor (C12) to Crusher (CR1)

APPENDIX B

USEPA METHOD 9

Method 9 – Visible Determination of the Opacity of Emissions from Stationary Sources

INTRODUCTION

(a) Many stationary sources discharge visible emissions into the atmosphere; these emissions are usually in the shape of a plume. This method involves the determination of plume opacity by qualified observers. The method includes procedures for the training and certification of observers and procedures to be used in the field for determination of plume opacity.

(b) The appearance of a plume as viewed by an observer depends upon a number of variables, some of which may be controllable in the field. Variables which can be controlled to an extent to which they no longer exert a significant influence upon plume appearance include: angle of the observer with respect to the plume; angle of the observer with respect to the sun; point of observation of attached and detached steam plume; and angle of the observer with respect to a plume emitted from a rectangular stack with a large length to width ratio. The method includes specific criteria applicable to these variables.

(c) Other variables which may not be controlled in the field are luminescence and color contrast between the plume and the background against which the plume is viewed. These variables exert an influence upon the appearance of a plume as viewed by an observer and can affect the ability of the observer to assign accurately opacity values to the observed plume. Studies of the theory of plume opacity and field studies have demonstrated that a plume is most visible and presents the greatest apparent opacity when viewed against a contrasting background. Accordingly, the opacity of a plume viewed under conditions where a contrasting background is present can be assigned with the greatest degree of accuracy. However, the potential for a positive error is also the greatest when a plume is viewed under such contrasting conditions. Under conditions presenting a less contrasting background, the apparent opacity of a plume is less and approaches zero as the color and luminescence contrast decrease toward zero. As a result, significant negative bias decreases rather than increases the possibility that a plant operator will be incorrectly cited for a violation of opacity standards as a result of observer error.

(d) Studies have been undertaken to determine the magnitude of positive errors made by qualified observers while reading plumes under contrasting conditions and using the procedures set forth in this method. The results of these studies (field trials) which involve a total of 769 sets of 25 readings each are as follows:

(1) For black plumes (133 sets at a smoke generator), 100 percent of the sets were read with a positive error of less than 7.5 percent opacity; 99 percent were read with a positive error of less than 5 percent opacity. (Note: For a set, positive error = average opacity determined by observers' 25 observations – average opacity determined from transmissometer's 25 recordings.)

(2) For white plumes (170 sets at a smoke generator, 168 sets at a coal-fired plant, 298 sets at a sulfuric acid plant), 99 percent of the sets were read with a positive error of less than 7.5 percent opacity; 95 percent were read with a positive error of less than 5 percent opacity.

(e) The positive observational error associated with an average of twenty-five readings is therefore established. The accuracy of the method must be taken into account when determining possible violations of applicable opacity standards.

1. PRINCIPLE AND APPLICABILITY

1.1 Principle. The opacity of emissions from stationary sources is determined by a qualified observer.

1.2 Applicability. This method is applicable for the determination of the opacity of emissions from stationary sources pursuant to § 60.11(b) and for visually determining opacity of emissions.

2. PROCEDURES

The observer qualified in accordance with Section 3 of this method shall use the following procedures for visually determining the opacity of emissions.

2.1 Position. The qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back. Consistent with maintaining the above requirement, the observer shall, as much as possible, make his observations from a position such that his line of vision is approximately perpendicular to the plume direction and, when observing opacity of emissions from rectangular outlets (e.g., roof monitor, open baghouses, noncircular stacks), approximately perpendicular to the longer axis of the outlet. The observer's line of sight should not include more than one plume at a time when multiple stacks are involved, and in any case the observer should make his observations with his line of sight perpendicular to the longer axis of such a set of multiple stacks (e.g., stub stacks on baghouses).

2.2 Field Records. The observer shall record the name of the plant, emission locations, facility type, observer's name and affiliation, and the date on a field data sheet (Figure 9-1). The time, estimated distance to the emission location, approximate wind direction, estimated wind speed, description of the sky condition (presence and color of clouds), and plume background are recorded on a data sheet at the time opacity readings are initiated and completed.

2.3 Observations. Opacity observations shall be made at the point of greatest opacity in that portion of the plume where condensed water vapor is not present. The observer shall not look continuously at the plume but instead shall observe the plume momentarily at 15-second intervals.

2.3.1 Attached Steam Plumes. When condensed water vapor is present within the plume as it emerges from the emission outlet, opacity observations shall be made beyond the point in the plume at which condensed water vapor is no longer visible. The observer shall record the approximate distance from the emission outlet to the point in the plume at which the observations were made.

2.3.2 Detached Steam Plume. When water vapor in the plume condenses and becomes visible at a distinct distance from the emission outlet, the opacity of emissions should be evaluated at the emission outlet prior to the condensation of water and the formation of the steam plume.

2.4 **Recording Observations.** Opacity observations shall be recorded to the nearest 5 percent at 15-second intervals on an observational record sheet. (See Figure 9-2 for an example.) A minimum of 24 observations shall be recorded. Each momentary observation recorded shall be deemed to represent the average opacity of emissions for a 15-second period.

2.5 **Data Reduction.** Opacity shall be determined as an average of 24 consecutive observations recorded at 15-second intervals. Divide the observations recorded on the record sheet into sets of 24 consecutive observations. A set is composed of any 24 consecutive observations. Sets need not be consecutive in time and in no case shall two sets overlap. For each set of 24 observations, calculate the average by summing the opacity of the 24 observations and dividing this sum by 24. If an applicable standard specifies an averaging time requiring more than 24 observations, calculate the average for all observation made during the specified time period. Record the average opacity on a record sheet. (See Figure 9-1 for an example.)

3. QUALIFICATION AND TESTING

3.1 **Certification Requirements.** To receive certification as a qualified observer, a candidate must be tested and demonstrate the ability to assign opacity readings in 5 percent increments to 25 different black plumes and 25 different white plumes, with an error not to exceed 15 percent opacity on any one reading and average error not to exceed 7.5 percent opacity in each category. Candidates shall be tested according to the procedures described in Section 3.2. Smoke generators used pursuant to Section 3.2 shall be equipped with a smoke meter which meets the requirements of Section 3.3. The certification shall be valid for a period of 6 months, at which time the qualification procedure must be repeated by any observer in order to retain certification.

3.2 **Certification Procedure.** The certification test consists of showing the candidate a complete run of 50 plumes – 25 black plumes and 25 white plumes – generated by a smoke generator. Plumes within each set of 25 black and 25 white runs shall be presented in random order. The candidate assigns an opacity value to each plume and records his observation on a suitable form. At the completion of each run of 50 readings, the score of the candidate is determined. If a candidate fails to qualify, the complete run of 50 readings must be repeated in any retest. The smoke test may be administered as part of a smoke school or training program and may be preceded by training or familiarization runs of the smoke generator during which candidates are shown black and white plumes of known opacity.

3.3 **Smoke Generator Specifications.** Any smoke generator used for the purposes of Section 3.2 shall be equipped with a smoke meter installed to measure opacity across the diameter of the smoke generator stack. The smoke meter output shall display in-stack opacity based upon a path length equal to the stack exit diameter, on a full 0 to 100 percent chart recorder scale. The smoke meter optical design and performance shall meet the specifications shown in Table 9-1. The smoke meter shall be calibrated as prescribed in Section 3.3.1 prior to the conduct of each smoke reading test. At the completion of each test, the zero and span drift shall be checked and if the drift exceeds ±1 percent opacity, the condition shall be corrected prior to conducting any subsequent test runs. The smoke meter shall be demonstrated, at the time of installation, to meet the specifications listed in Table 9-1. This demonstration shall be repeated following any subsequent repair or replacement of the photocell or associated electronic circuitry including the chart recorder or output meter, or every 6 months, whichever occurs first.

TABLE 9-1 SMOKE METER DESIGN AND PERFORMANCE SPECIFICATIONS

Parameter	Specification
a. Light Source	Incandescent lamp operated at nominal rated voltage
b. Spectral response of photocell	Photopic (daylight spectral response of the human eye – Citation 3)
c. Angle of view	15° maximum total angle
d. Angle of projection	15° maximum total angle
e. Calibration error	±3% opacity, maximum
f. Zero and span drift	±1% opacity, 30 minutes
g. Response time	5 seconds

3.3.1 Calibration. The smoke meter is calibrated after allowing a minimum of 30 minutes warmup by alternating producing simulated opacity of 0 percent and 100 percent. When stable response at 0 percent or 100 percent is noted, the smoke reader is adjusted to produce an output of 0 percent of 100 percent, as appropriate. This calibration shall be repeated until stable 0 percent and 100 percent opacity values may be produced by alternately switching the power to the light source on and off while the smoke generator is not producing smoke.

3.3.2 Smoke Meter Evaluation. The smoke meter design and performance are to be evaluated as follows:

3.3.2.1 Light Source. Verify from manufacturer's data and from voltage measurements made at the lamp, as installed, that the lamp is operated within ±5 percent of the nominal rated voltage.

3.3.2.2 Spectral Response of Photocell. Verify from manufacturer's data that the photocell has a photopic response; i.e., the spectral sensitivity of the cell shall closely approximate the standard spectral-luminosity in (b) of Table 9-1.

3.3.2.3 Angle of View. Check construction geometry to ensure that the total angle of view of the smoke plume, as seen by the photocell, does not exceed 15°. The total angle of view may be calculated from $Q = 2 \tan^{-1} (d/2L)$, where Q = total angle of view, d = the sum of the photocell diameter + the diameter of the limiting aperture; and L = the distance from the photocell to the limiting aperture. The limiting aperture is the point in the path between the photocell and the smoke plume where the angle of view is most restricted. In smoke generator smoke meters this is normally an orifice plate.

3.3.2.4 Angle of Projection. Check construction geometry to ensure that the total angle of projection of the lamp on the smoke plume does not exceed 15°. The total angle of projection may be calculated from: $Q = 2 \tan^{-1} (d/2L)$, where Q = total angle of projection; d = the sum of the length of the lamp filament + the diameter of the limiting aperture; and L = the distance from the lamp to the limiting aperture.

3.3.2.5 **Calibration Error.** Using neutral-density filters of known opacity, check the error between the actual response and the theoretical linear response of the smoke meter. This check is accomplished by first calibrating the smoke meter according to Section 3.3.1 and then inserting a series of three neutral-density filters of nominal opacity of 20, 50, and 75 percent in the smoke meter pathlength. Filters calibrated within 2 percent shall be used. Care should be taken when inserting the filters to prevent stray light from affecting the meter. Make a total of five nonconsecutive readings for each filter. The maximum error on any one reading shall be 3 percent opacity.

3.3.2.6 **Zero and Span Drift.** Determine the zero and span drift by calibrating and operating the smoke generator in a normal manner over a 1-hour period. The drift is measured by checking the zero and span at the end of this period.

3.3.2.7 **Response Time.** Determine the response time by producing a series of five simulated 0 percent and 100 percent opacity values and observing the time required to reach stable response. Opacity values of 0 percent and 100 percent may be simulated by alternately switching the power to the light source off and on while the smoke generator is not operating.

4. BIBLIOGRAPHY

1. Air Pollution Control District Rules and Regulations, Los Angeles County Air Pollution Control District, Regulation IV, Prohibitions, Rule 50.

2. Weisburd, Melvin I., Field Operations and Enforcement Manual for Air, U.S. Environmental Protection Agency, Research Triangle Park, NC, APTD-1100, August 1972, pp. 4.1-4.36.

3. Condon, E.U., and Odishaw, H., Handbook of Physics, McGraw-Hill Co., New York, NY, 1958, Table 3.1, p.6-52.

APPENDIX C

QUALIFIED OBSERVER CERTIFICATE

EASTERN TECHNICAL ASSOCIATES

ROSANA FOCO

met the specifications of Federal Reference Method 9 and qualifies as a visible emissions evaluator. Maximum deviation on white and black smoke did not exceed 7.5% opacity and no single error exceeding 15% opacity was incurred during the certification test conducted by Eastern Technical Associates of Raleigh, NC. This certificate is valid for six months from date of issue and expires on the date below.

Michael W. Sandifer
DIRECTOR OF TRAINING

4/9/2002
DATE OF SCHOOL

BEARER	CERTIFICATION NUMBER	EXPIRATION DATE
	294990	10/9/2002

APPENDIX D

FIELD SAMPLING DATA SHEETS

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: SCK1 to C14
OBSERVATION DATE: 8/8/02 | START TIME: 10:32 | STOP TIME: 11:32

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	–	–	–	–
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: C14
OBSERVATION DATE: 8/8/02 | START TIME: 10:32 | STOP TIME: 11:32

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	–	–	–	–
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: C14 to C7
OBSERVATION DATE: 8/8/02 | START TIME: 8/10:32 | STOP TIME: 11:32

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1	0	0	0	0	31	0	0	0	0
2	0	0	0	0	32	0	0	0	0
3	0	0	0	0	33	0	0	0	0
4	0	0	0	0	34	0	0	0	0
5	0	0	0	0	35	0	0	0	0
6	0	0	0	0	36	0	0	0	0
7	0	0	0	0	37	0	0	0	0
8	0	0	0	0	38	0	0	0	0
9	0	0	0	0	39	0	0	0	0
10	0	0	0	0	40	0	0	0	0
11	0	0	0	0	41	0	0	0	0
12	0	0	0	0	42	0	0	0	0
13	0	0	0	0	43	0	0	0	0
14	0	0	0	0	44	0	0	0	0
15	0	0	0	0	45	0	0	0	0
16	0	0	0	0	46	0	0	0	0
17	0	0	0	0	47	0	0	0	0
18	0	0	0	0	48	0	0	0	0
19	0	0	0	0	49	0	0	0	0
20	0	0	0	0	50	0	0	0	0
21	0	0	0	0	51	0	0	0	0
22	0	0	0	0	52	0	0	0	0
23	0	0	0	0	53	–	–	–	–
24	0	0	0	0	54	0	0	0	0
25	0	0	0	0	55	0	0	0	0
26	0	0	0	0	56	0	0	0	0
27	0	0	0	0	57	0	0	0	0
28	0	0	0	0	58	0	0	0	0
29	0	0	0	0	59	0	0	0	0
30	0	0	0	0	60	0	0	0	0

SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C4 to C11
OBSERVATION DATE	8/8/02
START TIME	11:55
STOP TIME	12:55

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C11
OBSERVATION DATE	8/8/02
START TIME	11:55
STOP TIME	12:55

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C11 to C12.
OBSERVATION DATE	8/8/02
START TIME	11:55
STOP TIME	12:55

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C12
OBSERVATION DATE	8/8/02
START TIME	1:00
STOP TIME	2:00

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C12 to CR1
OBSERVATION DATE	8/8/02
START TIME	1:00
STOP TIME	2:00

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME	
SOURCE ID NUMBER	
OBSERVATION DATE	
START TIME	
STOP TIME	

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: F2 to C13
OBSERVATION DATE: 8/8/02 | START TIME: 9:30 | STOP TIME: 10:30

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: C13
OBSERVATION DATE: 8/8/02 | START TIME: 9:30 | STOP TIME: 10:30

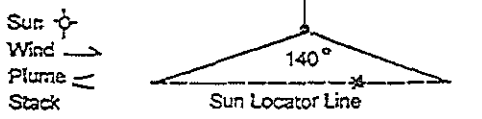
MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

SOURCE NAME: Rock Recyclers
SOURCE ID NUMBER: C13 to C1
OBSERVATION DATE: 8/8/02 | START TIME: 9:30 | STOP TIME: 10.30

MIN \ SEC	0	15	30	45	MIN \ SEC	0	15	30	45
1					31				
2					32				
3					33				
4					34				
5					35				
6					36				
7					37				
8					38				
9					39				
10					40				
11					41				
12					42				
13					43				
14					44				
15					45				
16					46				
17					47				
18					48				
19					49				
20					50				
21					51				
22					52				
23					53				
24					54				
25					55				
26					56				
27					57				
28					58				
29					59				
30					60				

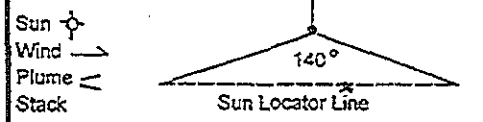
SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	~~F2~~ to C13
PROCESS EQUIPMENT	Feeder to Conveyor
OPERATING MODE	350 TPH
CONTROL EQUIPMENT	—
OPERATING MODE	—
DESCRIBE EMISSION POINT	
START	Transfer
STOP	
HT ABOVE GROUND LEVEL START	10ft
HT ABOVE GROUND LEVEL STOP	✓
HT RELATIVE TO OBSERVER START	10ft
HT RELATIVE TO OBSERVER STOP	✓
DISTANCE FROM OBSERVER START	30ft
DISTANCE FROM OBSERVER STOP	✓
DIRECTION FROM OBSERVER START	NE
DIRECTION FROM OBSERVER STOP	✓
DESCRIBE EMISSIONS START	Fugitive
DESCRIBE EMISSIONS STOP	✓
EMISSION COLOR START	Brown
EMISSION COLOR STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☑ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	—
DESCRIBE BACKGROUND START	Machinery
DESCRIBE BACKGROUND STOP	✓
BACKGROUND COLOR START	Beige
BACKGROUND COLOR STOP	✓
SKY CONDITIONS START	Clear
SKY CONDITIONS STOP	✓
WIND SPEED START	5-10
WIND SPEED STOP	✓
WIND DIRECTION START	
WIND DIRECTION STOP	
AMBIENT TEMP START	67
AMBIENT TEMP STOP	69
WET BULB TEMP	NA
RH %	—

Source Layout Sketch — Draw North Arrow



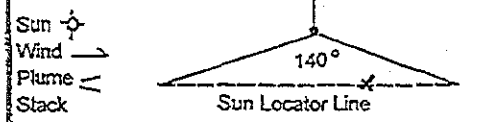
SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C13
PROCESS EQUIPMENT	Conveyor
OPERATING MODE	350TPH
CONTROL EQUIPMENT	—
OPERATING MODE	—
DESCRIBE EMISSION POINT	
START	Point
STOP	✓
HT ABOVE GROUND LEVEL START	15ft
HT ABOVE GROUND LEVEL STOP	✓
HT RELATIVE TO OBSERVER START	15ft
HT RELATIVE TO OBSERVER STOP	✓
DISTANCE FROM OBSERVER START	30ft
DISTANCE FROM OBSERVER STOP	✓
DIRECTION FROM OBSERVER START	NE
DIRECTION FROM OBSERVER STOP	✓
DESCRIBE EMISSIONS START	Fugitive
DESCRIBE EMISSIONS STOP	✓
EMISSION COLOR START	Brown
EMISSION COLOR STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☑ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	—
DESCRIBE BACKGROUND START	Machinery
DESCRIBE BACKGROUND STOP	✓
BACKGROUND COLOR START	Beige
BACKGROUND COLOR STOP	✓
SKY CONDITIONS START	Clear
SKY CONDITIONS STOP	✓
WIND SPEED START	5-10
WIND SPEED STOP	
WIND DIRECTION START	
WIND DIRECTION STOP	
AMBIENT TEMP START	67
AMBIENT TEMP STOP	69
WET BULB TEMP	NA
RH %	—

Source Layout Sketch — Draw North Arrow



SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C13 to C1
PROCESS EQUIPMENT	Conveyor to Conveyor
OPERATING MODE	350TPH
CONTROL EQUIPMENT	—
OPERATING MODE	—
DESCRIBE EMISSION POINT	
START	Transfer
STOP	✓
HT ABOVE GROUND LEVEL START	20ft
HT ABOVE GROUND LEVEL STOP	✓
HT RELATIVE TO OBSERVER START	20ft
HT RELATIVE TO OBSERVER STOP	✓
DISTANCE FROM OBSERVER START	30ft
DISTANCE FROM OBSERVER STOP	✓
DIRECTION FROM OBSERVER START	NE
DIRECTION FROM OBSERVER STOP	✓
DESCRIBE EMISSIONS START	Fugitive
DESCRIBE EMISSIONS STOP	✓
EMISSION COLOR START	Brown
EMISSION COLOR STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☑ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED STOP	✓
DESCRIBE BACKGROUND START	Machinery
DESCRIBE BACKGROUND STOP	✓
BACKGROUND COLOR START	Beige
BACKGROUND COLOR STOP	✓
SKY CONDITIONS START	Clear
SKY CONDITIONS STOP	✓
WIND SPEED START	5-10
WIND SPEED STOP	
WIND DIRECTION START	
WIND DIRECTION STOP	
AMBIENT TEMP START	67
AMBIENT TEMP STOP	69
WET BULB TEMP	NA
RH %	—

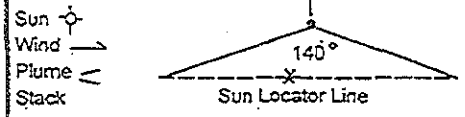
Source Layout Sketch — Draw North Arrow



OBSERVER'S NAME (PRINT)	Rosana Foco.	ORGANIZATION	Dessoyo & Associates, Inc.	ADDRESS	Rock Recyclers 7500 Reaume Rd. Newport, MI 48166
OBSERVER'S SIGNATURE	Rosana Foco	DATE	8/8/02	CERTIFIED BY	Eastern Technical Assoc.
DATE	8/09/02				

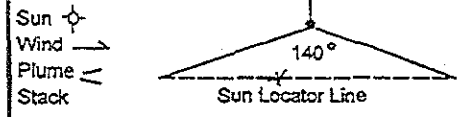
SOURCE NAME	Rock Recyclers	
SOURCE ID NUMBER	C12	
PROCESS EQUIPMENT	Conveyor	OPERATING MODE 350 TPH
CONTROL EQUIPMENT	—	OPERATING MODE —
DESCRIBE EMISSION POINT	START Point	STOP ✓
HT ABOVE GROUND LEVEL	START 15 ft STOP ✓	HT RELATIVE TO OBSERVER START 15 ft STOP ✓
DISTANCE FROM OBSERVER	START 350 ft STOP ✓	DIRECTION FROM OBSERVER START NE STOP ✓
DESCRIBE EMISSIONS	START Fugitive	STOP ✓
EMISSION COLOR	START Brown STOP ✓	PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT:	NO ☑ YES ☐	IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	START NA	STOP —
DESCRIBE BACKGROUND	START Machinery	STOP ✓
BACKGROUND COLOR	START Beige STOP ✓	SKY CONDITIONS START Clear STOP ✓
WIND SPEED	START 5-10 STOP ✓	WIND DIRECTION START STOP
AMBIENT TEMP	START STOP	WET BULB TEMP — RH % —

Source Layout Sketch — Draw North Arrow



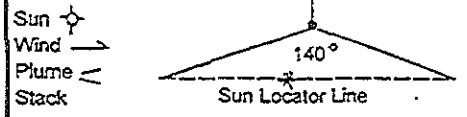
SOURCE NAME	Rock Recyclers	
SOURCE ID NUMBER	C12 to CR1	
PROCESS EQUIPMENT	Conveyor to Crusher	OPERATING MODE 350 TPH
CONTROL EQUIPMENT	Water Spray	OPERATING MODE
DESCRIBE EMISSION POINT	START Transfer	STOP ✓
HT ABOVE GROUND LEVEL	START 25 ft STOP ✓	HT RELATIVE TO OBSERVER START 25 ft STOP ✓
DISTANCE FROM OBSERVER	START 350 ft STOP ✓	DIRECTION FROM OBSERVER START NE STOP ✓
DESCRIBE EMISSIONS	START Fugitive	STOP ✓
EMISSION COLOR	START Brown STOP ✓	PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT:	NO ☑ YES ☐	IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	START NA	STOP —
DESCRIBE BACKGROUND	START Machinery	STOP ✓
BACKGROUND COLOR	START Beige STOP ✓	SKY CONDITIONS START Clear STOP ✓
WIND SPEED	START 5-10 STOP ✓	WIND DIRECTION START STOP
AMBIENT TEMP	START STOP	WET BULB TEMP — RH % —

Source Layout Sketch — Draw North Arrow



SOURCE NAME	Rock Recyclers	
SOURCE ID NUMBER		
PROCESS EQUIPMENT		OPERATING MODE 35
CONTROL EQUIPMENT		OPERATING MODE
DESCRIBE EMISSION POINT	START	STOP
HT ABOVE GROUND LEVEL	START STOP	HT RELATIVE TO OBSERVER START STOP
DISTANCE FROM OBSERVER	START STOP	DIRECTION FROM OBSERVER START STOP
DESCRIBE EMISSIONS	START	STOP
EMISSION COLOR	START STOP	PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐
WATER DROPLETS PRESENT:	NO ☐ YES ☐	IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	START	STOP
DESCRIBE BACKGROUND	START	STOP
BACKGROUND COLOR	START STOP	SKY CONDITIONS START STOP
WIND SPEED	START STOP	WIND DIRECTION START STOP
AMBIENT TEMP	START STOP	WET BULB TEMP — RH % —

Source Layout Sketch — Draw North Arrow

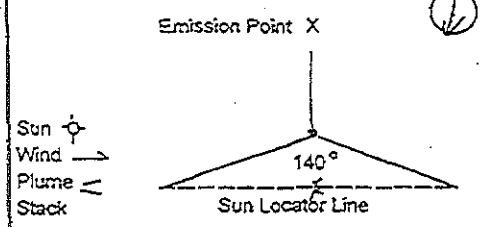


OBSERVER'S NAME (PRINT)	Roxana Foco	ORGANIZATION	Devango & Associates, Inc
OBSERVER'S SIGNATURE	Roxana Foco	DATE 8/8/02	CERTIFIED BY Eastern Technical Assoc	DATE 4/09/02

ADDRESS
Rock Recyclers
7500 Reaume Road.
Newport, MI 48166

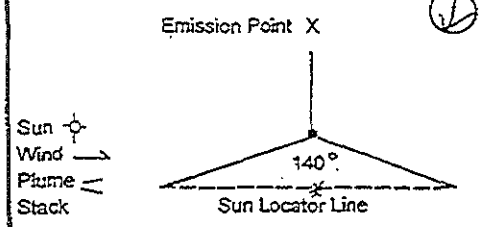
SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C4 to C11
PROCESS EQUIPMENT	Conveyor to Conveyor
OPERATING MODE	300 TPH
CONTROL EQUIPMENT	0
OPERATING MODE	
DESCRIBE EMISSION POINT START	Transfer
STOP	✓
HT ABOVE GROUND LEVEL START	3ft
STOP	✓
HT RELATIVE TO OBSERVER START	3ft
STOP	✓
DISTANCE FROM OBSERVER START	30ft
STOP	✓
DIRECTION FROM OBSERVER START	NE
STOP	✓
DESCRIBE EMISSIONS START	Fugitive
STOP	✓
EMISSION COLOR START	Brown
STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☑ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
STOP	—
DESCRIBE BACKGROUND START	Machinery
STOP	✓
BACKGROUND COLOR START	Beige
STOP	✓
SKY CONDITIONS START	Clear
STOP	✓
WIND SPEED START	5-10
STOP	✓
WIND DIRECTION START	
STOP	
AMBIENT TEMP START	72
STOP	✓
WET BULB TEMP	—
RH %	—

Source Layout Sketch — Draw North Arrow



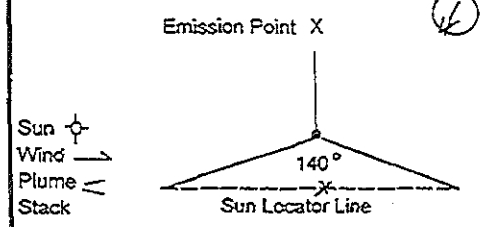
SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C11
PROCESS EQUIPMENT	Conveyor
OPERATING MODE	350 TPH
CONTROL EQUIPMENT	0
OPERATING MODE	
DESCRIBE EMISSION POINT START	Point
STOP	✓
HT ABOVE GROUND LEVEL START	3ft
STOP	✓
HT RELATIVE TO OBSERVER START	3ft
STOP	✓
DISTANCE FROM OBSERVER START	30ft
STOP	✓
DIRECTION FROM OBSERVER START	NE
STOP	✓
DESCRIBE EMISSIONS START	Fugitive
STOP	✓
EMISSION COLOR START	Brown
STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☑ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
STOP	—
DESCRIBE BACKGROUND START	Machinery
STOP	✓
BACKGROUND COLOR START	Beige
STOP	✓
SKY CONDITIONS START	Clear
STOP	✓
WIND SPEED START	5-10
STOP	✓
WIND DIRECTION START	
STOP	
AMBIENT TEMP START	72
STOP	✓
WET BULB TEMP	—
RH %	—

Source Layout Sketch — Draw North Arrow



SOURCE NAME	Rock Recyclers
SOURCE ID NUMBER	C11 to C12
PROCESS EQUIPMENT	Conveyor to Conveyor
OPERATING MODE	350 TPH
CONTROL EQUIPMENT	0
OPERATING MODE	
DESCRIBE EMISSION POINT START	Transfer
STOP	✓
HT ABOVE GROUND LEVEL START	10ft
STOP	✓
HT RELATIVE TO OBSERVER START	10ft
STOP	✓
DISTANCE FROM OBSERVER START	30ft
STOP	✓
DIRECTION FROM OBSERVER START	NE
STOP	✓
DESCRIBE EMISSIONS START	Fugitive
STOP	✓
EMISSION COLOR START	Brown
STOP	✓
PLUME TYPE: CONTINUOUS ☐ FUGITIVE ☐ INTERMITTENT ☐	
WATER DROPLETS PRESENT: NO ☐ YES ☐	
IF WATER DROPLET PLUME: ATTACHED ☐ DETACHED ☐	
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED START	NA
STOP	—
DESCRIBE BACKGROUND START	Machinery
STOP	✓
BACKGROUND COLOR START	Beige
STOP	✓
SKY CONDITIONS START	Clear
STOP	✓
WIND SPEED START	5-10
STOP	✓
WIND DIRECTION START	
STOP	
AMBIENT TEMP START	72
STOP	✓
WET BULB TEMP	—
RH %	—

Source Layout Sketch — Draw North Arrow

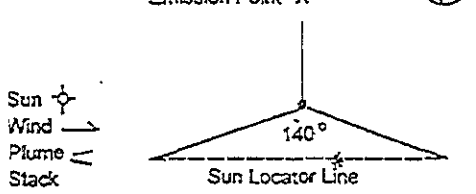


OBSERVER'S NAME (PRINT)	Rosana Foco	ORGANIZATION	Docango & Associates, Inc.
OBSERVER'S SIGNATURE	Rosana Foco	DATE	8/8/02
CERTIFIED BY	Eastern Technical Assoc.	DATE	

ADDRESS
Rock Recyclers
7500 Reaume Rd.
Newport, MI 48166

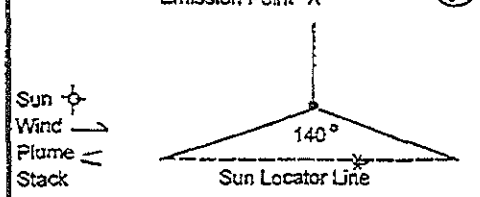
SOURCE NAME	
Rock Recyclers	
SOURCE ID NUMBER	
SCR1 to C14	
PROCESS EQUIPMENT	OPERATING MODE
Screen to Conveyor	350 TPH
CONTROL EQUIPMENT	OPERATING MODE
Water Sprays	
DESCRIBE EMISSION POINT	
START Transfer	STOP ✓
HT ABOVE GROUND LEVEL	HT RELATIVE TO OBSERVER
START 4ft STOP ✓	START 4ft STOP ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 30ft STOP ✓	START NE STOP ✓
DESCRIBE EMISSIONS	
START Fugitive	STOP ✓
EMISSION COLOR	PLUME TYPE: CONTINUOUS☐
START Brown STOP ✓	FUGITIVE☐ INTERMITTENT☐
WATER DROPLETS PRESENT:	IF WATER DROPLET PLUME:
NO ☑ YES ☐	ATTACHED ☐ DETACHED☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	
START NA	STOP ✓
DESCRIBE BACKGROUND	
START Machinery.	STOP ✓
BACKGROUND COLOR	SKY CONDITIONS
START Beige STOP ✓	START Clear STOP ✓
WIND SPEED	WIND DIRECTION
START 5-10 STOP ✓	START STOP
AMBIENT TEMP	WET BULB TEMP / RH %
START 70 STOP ✓	— / —

Source Layout Sketch — Draw North Arrow



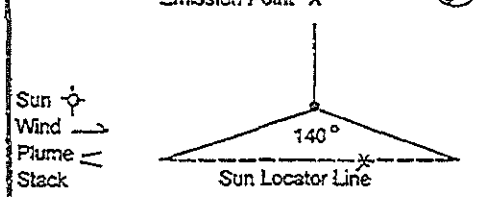
SOURCE NAME	
Rock Recyclers	
SOURCE ID NUMBER	
C14	
PROCESS EQUIPMENT	OPERATING MODE
Conveyor	350 TPH
CONTROL EQUIPMENT	OPERATING MODE
DESCRIBE EMISSION POINT	
START Point	STOP ✓
HT ABOVE GROUND LEVEL	HT RELATIVE TO OBSERVER
START 10ft STOP ✓	START 10ft STOP ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 30ft STOP ✓	START NE STOP ✓
DESCRIBE EMISSIONS	
START Fugitive	STOP ✓
EMISSION COLOR	PLUME TYPE: CONTINUOUS☐
START Brown STOP ✓	FUGITIVE☐ INTERMITTENT☐
WATER DROPLETS PRESENT:	IF WATER DROPLET PLUME:
NO ☑ YES ☐	ATTACHED ☐ DETACHED☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	
START NA	STOP —
DESCRIBE BACKGROUND	
START Machinery	STOP ✓
BACKGROUND COLOR	SKY CONDITIONS
START Beige STOP ✓	START Clear STOP ✓
WIND SPEED	WIND DIRECTION
START 5-10 STOP ✓	START STOP
AMBIENT TEMP	WET BULB TEMP / RH %
START 70 STOP ✓	— / —

Source Layout Sketch — Draw North Arrow



SOURCE NAME	
Rock Recyclers	
SOURCE ID NUMBER	
C14 to C7	
PROCESS EQUIPMENT	OPERATING MODE
Conveyor to Conveyor	350 TPH
CONTROL EQUIPMENT	OPERATING MODE
DESCRIBE EMISSION POINT	
START Transfer	STOP ✓
HT ABOVE GROUND LEVEL	HT RELATIVE TO OBSERVER
START 15ft STOP ✓	START 15ft STOP ✓
DISTANCE FROM OBSERVER	DIRECTION FROM OBSERVER
START 30ft STOP ✓	START NE STOP ✓
DESCRIBE EMISSIONS	
START Fugitive	STOP ✓
EMISSION COLOR	PLUME TYPE: CONTINUOUS☐
START Brown STOP ✓	FUGITIVE☐ INTERMITTENT☐
WATER DROPLETS PRESENT:	IF WATER DROPLET PLUME:
NO ☑ YES ☐	ATTACHED ☐ DETACHED☐
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	
START NA	STOP —
DESCRIBE BACKGROUND	
START Machinery	STOP ✓
BACKGROUND COLOR	SKY CONDITIONS
START Beige STOP ✓	START Clear STOP ✓
WIND SPEED	WIND DIRECTION
START 5-10 STOP ✓	START STOP
AMBIENT TEMP	WET BULB TEMP / RH %
START 70 STOP ✓	— / —

Source Layout Sketch — Draw North Arrow



OBSERVER'S NAME (PRINT)		ORGANIZATION	
Rosana Foco.		Devenco & Associates, Inc.	
OBSERVER'S SIGNATURE	DATE	CERTIFIED BY	DATE
Rosana Foco	8/8/02	Eastern Technical Assoc.	4/09/02

ADDRESS
Rock Recyclers, 7500 Lewis Rd. Newport, MI 48166.

ATTACHMENT B

THROUGHPUT RECORDS

ROCK RECYCLERS

FEB 2012		3/4" RAP	3/8" MINUS RAP	3/8" MINUS SRAP	3/8" PLUS RAP	1X3	21AA	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		No Operation in January 2012									
1	WED									10	
2	THU									10	
3	FRI									11	
4	SAT									8	
	TOTAL	-	-	-	-	-	-	0	#DIV/0!	39.0	0
6	MON	CHUBB ROAD - RECYCLED AGGREGATES								30	
7	TUE	SAFETY MEETING									
8	WED						946	3.9	243	30.5	31
9	THU	AT TAYLOR									
10	FRI						411	1.7	242	30	14
11	SAT									6	0
	TOTAL	-	-	-	-	-	1,357	6	242	96.5	14
13	MON						1,784	7.2	248	40.5	44
14	TUE						1,812	6.9	263	40.5	45
15	WED						1,743	6.7	260	40.5	43
16	THU					168	1,067	4.5	274	38.0	33
17	FRI					97	766	4.4	196	42.0	21
18	SAT									19.0	0.00
	TOTAL	-	-	-	-	265	7,172	30	250	221	34
20	MON					157	1,351	5.4	279	40.5	37
21	TUE					248	1,911	7.5	288	40.5	53
22	WED					195	1,466	6.6	252	47.5	35
23	THU					118	897	3.5	290	40	25
24	FRI					204	1,448	6.8	243	40	41
25	SAT									6	
	TOTAL	-	-	-	-	922	7,073	30	268	215	37
27	MON					*203*	*1568*	6.9	257	40	44
28	TUE					175	1283	6	243	44.5	33
29	WED	rain out									
	TOTAL	-	-	-	-	378	2,851	13	250	84.5	38
MONTH END TOTALS		-	-	-	-	1,565	18,453	78	257	655	31

ROCK RECYCLERS

MAR 2012		3/4" RAP	3/8" MINUS RAP	SHINGLES	3/8" MINUS SRAP	3/8" PLUS RAP	1X3	21AA	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		CHUBB ROAD - RECYCLED AGGREGATES										
1	THU						103	816	5	204	40	23
2	FRI									#DIV/0!	30	0
3	SAT									#DIV/0!	6	0
4	SUN											
	TOTAL	-	-	-	-	-	103	816	5	204	76.0	12
5	MON	AJAX PLANT #5 ROMULUS									30	
6	TUE										33	
7	WED		344		50				1.5	263	23	17
8	THU		1134		147				5.2	246	24	53
9	FRI		1839		173				7.2	279	25	80
10	SAT										6	0
11	SUN											
	TOTAL	-	3,317	-	370	-	-	-	14	265	141.0	26
12	MON		1268		117				5	277	34.5	40
13	TUE		1835		199				7	291	30	68
14	WED		1952		200				6.8	316	31	69
15	THU		2726		393				8.7	359	35	89
16	FRI		2072		303				7.6	313	30	79
17	SAT											
18	SUN											
	TOTAL	-	9,853	-	1,212	-	-	-	35	315	161	69
19	MON		2101		267				6.9	343	40	59
20	TUE		2045		263				7.3	316	30	77
21	WED		2317		348				8.1	329	39	68
22	THU		2234		323				8.1	316	40.5	63
23	FRI		1901		349				7.6	296	38.5	58
24	SAT										10	
25	SUN											
	TOTAL	-	10,598	-	1,550	-	-	-	38	320	198	61
26	MON		1,730		255				6	331	40	50
27	TUE			91		1,947	317		6.1	386	40	59
28	WED			114		2,284	355		7.5	367	40	69
29	THU			143		2,498	393		8.8	345	45	67
30	FRI			133		2,185	397		7.2	377	32	85
31	SAT										6	
	TOTAL	-	1,730	481	255	8,914	1,462	-	36	361	203.0	63
MONTH END TOTALS		-	25,498	481	3,387	8,914	1,565	816	127	320	779	52

ROCK RECYCLERS

APRIL 2012		3/4" RAP	3/8" MINUS		3/8" MINUS SRAP	3/8" PLUS	SHINGLES	P219 METRO	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #5 ROMULUS										
2	MON				2410	551	122		8.7	354		#DIV/0!
3	TUE				1510	297	93		6.7	284		#DIV/0!
4	WED	MOVE PLANT IN YARD										
5	THU	1032							4	258		#DIV/0!
6	FRI	1898							8	246		#DIV/0!
7	SAT											
8	SUN											
	TOTAL	2,930	-	-	3,920	848	215	-	27.1	292	0.0	#DIV/0!
9	MON	2303							8	284		#DIV/0!
10	TUE	2331							8	295		#DIV/0!
11	WED	1603							6	267		#DIV/0!
12	THU	2113							8	267		#DIV/0!
13	FRI	2046							7	284		#DIV/0!
14	SAT	1,972							7	282		#DIV/0!
15	SUN											
	TOTAL	12,368	-	-	-	-	-	-	44	280	0.0	#DIV/0!
16	MON	MOVE AJAX PLANT #2 AUBURN HILLS								#VALUE!		#######
17	TUE									#DIV/0!		#DIV/0!
18	WED									#DIV/0!		#DIV/0!
19	THU									#DIV/0!		#DIV/0!
20	FRI									#DIV/0!		#DIV/0!
21	SAT									#DIV/0!		#DIV/0!
22	SUN											
	TOTAL	-	-	-	-	-	-	-	0	#DIV/0!	0.0	#DIV/0!
23	MON									#DIV/0!		#DIV/0!
24	TUE									#DIV/0!		#DIV/0!
25	WED									#DIV/0!		#DIV/0!
26	THU									#DIV/0!		#DIV/0!
27	FRI		1177	98					4	327		#DIV/0!
28	SAT		1205	106					4	328		#DIV/0!
29	SUN											
	TOTAL	-	2,382	204	-	-	-	-	8	327	0.0	#DIV/0!
30	MON		2049	268					7	317		#DIV/0!
	TOTAL	-	4,431	472	-	-	-	-	7	672	0.0	#DIV/0!
MONTH END TOTALS		15,298	6,813	676	3,920	848	215	-	86	321	-	#DIV/0!

ROCK RECYCLERS

MAY 2012		3/4" RAP	3/8" MINUS		3/8" MINUS SRAP	3/8" PLUS	SHINGLES	P219 METRO	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #2 BALD MOUNTAIN										
1	TUE		1,216	209						#DIV/0!	33.5	43
2	WED		1,650	282						#DIV/0!	33	59
3	THU		2,057	270						#DIV/0!	33	71
4	FRI				1,212	203	67		5	296	33	45
5	SAT				276	38	13		1	327	26	13
	TOTAL	-	4,923	761	1,488	241	80		6	1249	158.5	47
7	MON				2,379	394	133		8.6	338	33	88
8	TUE				1,597	268	121		5.2	382	32.5	61
9	WED				2,749	425	124		8.9	371	32.5	101
10	THU				2,739	423	140		9	367	33	100
11	FRI				2,331	450	127		7.5	388	32	91
12	SAT	1724							6.1		18.5	
13	SUN											
	TOTAL	1,724	-	-	11,795	1,960	645	-	45	356	181.5	89
14	MON	3176							10.2	311	33.5	95
15	TUE	2760							8.4	329	34.5	80
16	WED	AJAX PLANT #3 CROOKS RD									33	
17	THU										31	0
18	FRI				871	215	45		4	283	20	57
19	SAT											
20	SUN											
	TOTAL	5,936	-	-	871	215	45		23	313	152.00	46
21	MON				2,205	416	111		9.2	297	35	78
22	TUE				2,506	385	117		9.5	317	35	86
23	WED				2,335	416	115		9.8	292	35	82
24	THU				900	239	40		3	393	35	34
25	FRI										10	
26	SAT											
27	SUN											
	TOTAL	-	-	-	7,946	1,456	383	-	32	311	150	65
28	MON	MEMORIAL DAY										
29	TUE				2,010	445	87		8.7	292	35	73
30	WED				2,340	499	115		10.2	290	34.5	86
31	THU				1,950	426	97		8.2	302	39.5	63
	TOTAL	-	-	-	6,300	1,370	299	-	27	294	109	73
MONTH END TOTALS		7,660	4,923	761	28,400	5,242	1,452	-	133	366	751	64

ROCK RECYCLERS

JUNE 2012		3/4" RAP	3/8" MINUS	3/8" PLUS RAP	3/8" MINUS SRAP	3/8" PLUS	SHINGLES	P219 METRO	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #3 CROOKS RD										
1	FRI				1701	464	95		7	342	26.5	85
2	SAT										12	
3	SUN											
	TOTAL	-	-	-	1,701	464	95		7	357	39	59
4	MON				2277	693			9.6	309	35	85
5	TUE				1955	462			7.7	314	36.5	66
6	WED	3,045							8.8	346	32	95
7	THU	2,993							8.4	356	32.5	92
8	FRI	436							1.5	291	32.5	13
9	SAT										20.0	
10	SUN											
	TOTAL	6,474	-	-	4,232	1,155	-		36	329	188.5	63
11	MON	AJAX PLANT #6 BRIGHTON									33	
12	TUE										33	
13	WED	940							3.4	276	33.5	28
14	THU	1,652							5.1	324	33	50
15	FRI	DOWN									29	
16	SAT										6.0	
17	SUN											
	TOTAL	2,592							9	305	167.5	15
18	MON	1,952							6.1	320	32	61
19	TUE	DOWN									31	
20	WED	DOWN									28	
21	THU	510							3.4	150	40.5	13
22	FRI	DOWN									25.5	
23	SAT										6.0	
24	SUN											
	TOTAL	2,462	-	-	-	-	-		10	259	163.0	15
25	MON	1,057							3.4	311	30	35
26	TUE	1,184	412	43					9.2	178	35	47
27	WED		450	38	1800	182	47		8.1	311	35.5	71
28	THU				1630	244	95		6	328	25	79
29	FRI				2084	312	156		7.2	354	26	98
30	SAT				1766	264	176		6.8	324.41	26.0	84.85
	TOTAL	2,241	862	81	7,280	1,002	474		41	305	177.5	67
MONTH END TOTALS		13,769	862	81	13,213	2,621	569		101	307	735	43

ROCK RECYCLERS

JULY 2012		3/4" RAP	3/8" MINUS		3/8" MINUS SRAP	3/8" PLUS	SHINGLES		PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #6 BRIGHTON										
2	MON				1458	218	123		5	375	30	60
3	TUE				2256	338	175		8	338	30	92
4	WED										8	
5	THU				1653	247	138		6	329	29	70
6	FRI				1791	268	129		7	304	30	73
7	SAT										24	
8	SUN											
	TOTAL	-	-	-	7,158	1,071	565		26	355	151	58
9	MON	AJAX PLANT #2 BALD MTN									38	
10	TUE	612							2.2	278	36	17
11	WED	2,533							8.2	309	34	75
12	THU	3,265							10.5	311	35	93
13	FRI	3,317							10.4	319	33.5	99
14	SAT	1,866							6.2	300.97	26.5	70.42
15	SUN											
	TOTAL	11,593	-	-	-	-	-		38	309	203.0	57
16	MON	AJAX PLANT #1 NEW HAVEN									33	
17	TUE	901							2.9	311	31	29
18	WED	2,269							7.9	287	35	65
19	THU	1,403							3.9	360	35	40
20	FRI	2,340							7.9	296	34	69
21	SAT				1344	188	67		5.1	314	30	53
22	SUN											
	TOTAL	6,913							28	250	198.0	35
23	MON				2111	353	139		7.5	347	33	79
24	TUE	AJAX PLANT #5 INKSTER									33	
25	WED				705	105	37		2.4	353	31.5	27
26	THU				2533	379	168		8.6	358	31.5	98
27	FRI				1945	291	99		6.5	359	30	78
28	SAT										26.0	
29	SUN											
	TOTAL	-	-	-	7,294	1,128	443		25	372	185.0	48
30	MON				2484	298	134		7.5	389	31.5	93
31	TUE				2630	368	126		8.2	381	31.5	99
	TOTAL	-	-	-	5,114	666	260		16	401	63.0	96
MONTH END TOTALS		18,506	-	-	19,566	2,865	1,268		132	319	800	53

ROCK RECYCLERS

AUG 2012		3/4" RAP	3/8" MINUS		3/8" MINUS SRAP	3/8" PLUS	SHINGLES	P219 METRO	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #5 INKSTER										
1	WED				2530	379	142		8	407	31.5	97
2	THU	PLANT DOWN									31	
3	FRI										23.5	
4	SAT											
5	SUN											
	TOTAL	-	-	-	2,530	379	142		8	426	86	35
6	MON	2,806							8.2	342	10.5	267
7	TUE	2,132							5.9	361	20	107
8	WED	2,716							7.9	344	20	136
9	THU	PLANT DOWN									26	
10	FRI											
11	SAT											
12	SUN											
	TOTAL	7,654	-	-	-	-	-		22	348	76.5	100
13	MON	1,713							4.9	350	34	50
14	TUE	1,211							3.2	378	30	40
15	WED	2,345							6.9	340	30	78
16	THU	2,401							7.7	312	30	80
17	FRI										9	
18	SAT										6.0	
19	SUN											
	TOTAL	7,670							23	338	139.0	55
20	MON	1,809							5.8	312	30	60
21	TUE	2,619							7.9	332	30	87
22	WED	2,246							6.9	326	34	66
23	THU	AJAX PLANT #3 CROOKS									35.5	
24	FRI										31.5	
25	SAT		749	112					2.9	297	24	36
26	SUN											
	TOTAL	6,674	749	112	-	-	-		24	321	185.0	41
27	MON		1551	170					5.2	331	30	57
28	TUE		2352	232					7.9	327	30	86
29	WED		2414	289					8.1	334	30	90
30	THU		2122	210					6.7	348	30	78
31	FRI										8	
	TOTAL	-	8,439	901	-	-	-		28	335	128.0	73
MONTH END TOTALS		21,998	9,188	1,013	2,530	379	142		104	340	615	58

ROCK RECYCLERS

SEPT 2012		3/4" RAP	3/8" MINUS	3/8" PLUS RAP	3/8" MINUS SRAP	3/8" PLUS	SHINGLES	P219 METRO	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #3 CROOKS										
										#DIV/0!		#DIV/0!
1	SAT											
2	SUN											
	TOTAL	-	-	-	-	-	-		0	#DIV/0!	-	#DIV/0!
3	MON	HOLIDAY										
4	TUE		2149	236					7.4	322	30	80
5	WED	2,771							8.1	342	30	92
6	THU	1,339							4	335	31	43
7	FRI	2,594							7.9	328	31	84
8	SAT											
9	SUN											
	TOTAL	6,704	2,149	236	-	-	-		27	332	122.0	75
10	MON	2,254							6.9	327	30	75
11	TUE	2,381							7.4	322	30	79
12	WED	2,784							8.4	331	30	93
13	THU	MAINTENANCE									30	
14	FRI										12	
15	SAT											
16	SUN											
	TOTAL	7,419							23	327	132.0	56
17	MON	3,053							8.5	359	30	102
18	TUE	2,148							6.5	330	30	72
19	WED		1446	236					6.1	276	30	56
20	THU				2511	351			8.7	329	30.5	94
21	FRI										38.5	0
22	SAT										5	
23	SUN											
	TOTAL	5,201	1,446	236	2,511	351	-		30	327	120.5	81
24	MON	AJAX PLANT #5 INKSTER									30	
25	TUE		1646	246					5.8	326	30	63
26	WED		2621	393					9.5	317	32	94
27	THU		2640	396					10	304	33	92
28	FRI		2613	391					9.4	320	32	94
29	SAT		1774	230					6.8	295	28	72
	TOTAL	-	11,294	1,656	-	-	-		42	312	185.0	70
MONTH END TOTALS		19,324	14,889	2,128	2,511	351	-		121	323	560	71

ROCK RECYCLERS

OCT 2012		3/4" RAP	3/8" MINUS	3/8" PLUS RAP	3/8" MINUS SRAP	3/8" PLUS	SHINGLES	4G	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #5 INKSTER										
1	MON		2079	270					8	301	30	78
2	TUE				2074	248	111		7	329	32	76
3	WED	DAN'S US 23									35	
4	THU								8	0	36	0
5	FRI						43	218	8	33	47.5	5
6	SAT						379	1898	8	285	38.5	59
7	SUN										38.0	
	TOTAL	-	2,079	270	2,074	248	533	2,116	39	146	257	20
8	MON						409	2045	8.4	292	38.5	64
9	TUE						312	1561	6.8	275	34.5	54
10	WED						338	1692	7.7	264	36	56
11	THU	250							2	125	34.5	7
12	FRI	AJAX PLANT #6 BRIGHTON									30	
13	SAT	708							2.6	272	22	32
14	SUN											
	TOTAL	958	-	-	-	-	1,059	5,298	28	112	195.5	10
15	MON	3,043							9.5	320	33	92
16	TUE	3,011							9.4	320	33	91
17	WED	1,908							5.8	329	32	60
18	THU	3,129							9.7	323	33	95
19	FRI				1318	158	91		4.5	348	32	49
20	SAT				2421	266	167		8.5	336	30	95
21	SUN											
	TOTAL	11,091	-	-	3,739	424	258	-	47	333	193.0	80
22	MON		997	149	1821	254	141		10.3	326	34	99
23	TUE								9.3	0	34	0
24	WED								9.4	0	35	0
25	THU	AJAX PLANT #5 INKSTER									35	
26	FRI		1322	171					4.8	311	32	47
27	SAT											
28	SUN											
	TOTAL	-	2,319	320	1,821	254	141		34	148	170.0	29
29	MON		2220	288					8.3	302	30	84
30	TUE		1615	209					6.7	272	30	61
31	WED		1608	208					6.5	279	30	61
	TOTAL	-	5,443	705	-	-	-		22	286	90.0	68
MONTH END TOTALS		12,049	9,841	1,295	7,634	926	1,991		169	200	906	37

ROCK RECYCLERS

NOV 2012		3/4" RAP	3/8" MINUS	3/8" PLUS RAP	3/8" MINUS SRAP	3/8" PLUS	SHINGLES	4G	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #5 INKSTER										
1	THU	2,237	290						9	294	30	84
2	FRI										32	
3	SAT											
4	SUN											
	TOTAL	2,237	290	-	-	-	-	-	9	294	62	41
5	MON		1931	251					7.5	291	30	73
6	TUE		1106	143	1009	131	70		7.8	315	30	82
7	WED				2300	351	131		7.6	366	30	93
8	THU	2,647							8.2	323	30	88
9	FRI										8	
10	SAT											
11	SUN											
	TOTAL	2,647	3,037	394	3,309	482	201	-	31	330	128.0	79
12	MON		1680	252					6.2	312	30	64
13	TUE		2372	355					8.6	317	30	91
14	WED		2338	351					8.4	320	27	100
15	THU		2060	309					7.7	308	20	118
16	FRI											
17	SAT											
18	SUN											
	TOTAL	-	8,450	1,267	-	-	-	-	31	314	107.0	91
19	MON		2165	324					8.1	307	30	83
20	TUE		1692	253	349	52	21		8	296	30	79
21	WED				1906	285	120		7.8	296	30	77
22	THU	Holiday										
23	FRI											
24	SAT											
25	SUN											
	TOTAL	-	3,857	577	2,255	337	141		24	306	90.0	80
26	MON				2345	351	129		8.7	325	28	101
27	TUE				2469	370	186		8.9	340	30	101
28	WED				1596	282	118		6.1	327	30	67
29	THU										30	
30	FRI											
	TOTAL	-	-	-	6,410	1,003	433		24	349	118.0	66
MONTH END TOTALS		4,884	15,634	2,238	11,974	1,822	775		118	316	505	75

ROCK RECYCLERS

DEC 2012		3/4" RAP	3/8" MINUS	3/8" PLUS RAP	3/8" MINUS SRAP	3/8" PLUS	SHINGLES	4G	PLANT HOURS	TONS PER HOUR	HOURS WORKED	TPMH
		AJAX PLANT #5 INKSTER										
3	MON									#DIV/0!		#DIV/0!
4	TUE									#DIV/0!		#DIV/0!
5	WED		Down For Maintenance							########		#VALUE!
6	THU									#DIV/0!		#DIV/0!
7	FRI									#DIV/0!		#DIV/0!
8	SAT									#DIV/0!		#DIV/0!
9	SUN											
	TOTAL	-	-	-	-	-	-	-	0	#DIV/0!	-	#DIV/0!
10	MON									#DIV/0!		#DIV/0!
11	TUE									#DIV/0!		#DIV/0!
12	WED									#DIV/0!		#DIV/0!
13	THU									#DIV/0!		#DIV/0!
14	FRI											
15	SAT									#DIV/0!		#DIV/0!
16	SUN											
	TOTAL	-	-	-	-	-	-	-	0	#DIV/0!	0.0	#DIV/0!
17	MON									#DIV/0!		#DIV/0!
18	TUE									#DIV/0!		#DIV/0!
19	WED									#DIV/0!		#DIV/0!
20	THU									#DIV/0!		#DIV/0!
21	FRI									#DIV/0!		#DIV/0!
22	SAT									#DIV/0!		#DIV/0!
23	SUN											
	TOTAL	-	-	-	-	-	-	-	0	#DIV/0!	0.0	#DIV/0!
24	MON									#DIV/0!		#DIV/0!
25	TUE									#DIV/0!		#DIV/0!
26	WED									#DIV/0!		#DIV/0!
27	THU											
28	FRI									#DIV/0!		#DIV/0!
29	SAT											
30	SUN											
	TOTAL	-	-	-	-	-	-		0	#DIV/0!	0.0	#DIV/0!
31	MON									#DIV/0!		#DIV/0!
	TOTAL	-	-	-	-	-	-		0	#DIV/0!	0.0	#DIV/0!
MONTH END TOTALS		-	-	-	-	-	-		-	#DIV/0!	-	#DIV/0!

ATTACHMENT C

DAILY OPERATOR RECORDS
DETAILING WATER APPLICATION AND MAINTENANCE

Rock Recyclers

DELAY REPORT

Taylor AT Ajax #5
PLANT NAME

UNSCHEDULED DOWN TIME

DELAY CLASS	DELAY AREA
1 ELECTRICAL	A. CONVEYOR
2 MECHANICAL	B. CRUSHER
3 NO FEED	C. SCREEN
4 SLAB	D. CHUTE
5 LOADER	E. FEEDER
6 PLUG UP	F. MAGNET
7 WEATHER	G. GENERATOR
8 OTHER	H. OTHER

DATE: 10/15/12

PLANT: CRUSH PLANT

OPERATOR: Marty Jeff

MANAGER: Tom Downs

INCLUDE START AND STOP TIME

TIME DOWN	TIME UP	TOTAL TIME	DELAY CLASS	DELAY AREA	DELAY DESCRIPTION
					START UP 6:22
8:60	9:17	57m	6	D	chute plugged up
					SHUT DOWN 4:30

Total Buckets:

Weather Conditions: Fine

Comments:

Filled Water Truck 8:20
For Plant dust control

Crushing 3/4" RAP

Hour Meter	
PM	
AM	
Day Total	9,5
Scale Reading	
PM	
AM	0
Day Total	3043 Tons

Rock Recycler AJAX-TYS

DELAY REPORT

[redacted] PLANT NAME

UNSCHEDULED DOWN TIME

DELAY CLASS	DELAY AREA
1 ELECTRICAL	A. CONVEYOR
2 MECHANICAL	B. CRUSHER
3 NO FEED	C. SCREEN
4 SLAB	D. CHUTE
5 LOADER	E. FEEDER
6 PLUG UP	F. MAGNET
7 WEATHER	G. GENERATOR
8 OTHER	H. OTHER

DATE: 10/16/12

PLANT: ORIJAH PLANT

OPERATOR: Jeff

MANAGER: Tom Bowna

PROVIDE START AND STOP TIMES

TIME DOWN	TIME UP	TOTAL TIME	DELAY CLASS	DELAY AREA	DELAY DESCRIPTION
					START UP 6:32
1:37	2:08	31m	4	B	Crusher plugged up.
					SHUT DOWN 4:30

Total Buckets: [redacted] Weather Conditions: FAIR

Comments:

Filled water truck up at 7:30 am for plant

Crushing 3/4" RAP

Hour Meter	
PM	
AM	
Day Total	9.4
Scale Reading	
PM	
AM	
Day Total 3/4	3011 TONS

Rock Recycler

DELAY REPORT

PLANT NAME

UNSCHEDULED DOWN TIME

DELAY CLASS	DELAY AREA
1 ELECTRICAL	A. CONVEYOR
2 MECHANICAL	B. CRUSHER
3 NO FEED	C. SCREEN
4 SLAB	D. CHUTE
5 LOADER	E. FEEDER
6 PLUG UP	F. MAGNET
7 WEATHER	G. GENERATOR
8 OTHER	H. OTHER

DATE: 10/17/12

PLANT: CRUSH PLANT

OPERATOR: Jeff

MANAGER: Tom Downs

INCLUDE START AND STOP TIME

TIME DOWN	TIME UP	TOTAL TIME	DELAY CLASS	DELAY AREA	DELAY DESCRIPTION
					START UP 6:20
8:15	9:30	1:15	6	D	Chute plugged
10:20	2:00	3:40	5	H	Hyd. line on load blew
					SHUT DOWN 4:30

Total Buckets:

Weather Conditions: Fair

Comments:

Filled Water truck At 9:50

Crushing 3/4" Rap

Hour Meter	
PM	
AM	
Day Total	5.8
Scale Reading	
PM	
AM	
Day Total	1908 TONS

Rock Recycle

DELAY REPORT

Taylor A Asy 5
PLANT NAME

UNSCHEDULED DOWN TIME

DELAY CLASS	DELAY AREA
1 ELECTRICAL	A. CONVEYOR
2 MECHANICAL	B. CRUSHER
3 NO FEED	C. SCREEN
4 SLAB	D. CHUTE
5 LOADER	E. FEEDER
6 PLANT UP	F. MAGNET
7 WEATHER	G. GENERATOR
8 OTHER	H. OTHER

DATE: 10/18/12

PLANT: CRUSH PLANT

OPERATOR: Marty Sr FP

MANAGER: Tom Downs

INCLUDE START AND STOP TIME

TIME DOWN	TIME UP	TOTAL TIME	DELAY CLASS	DELAY AREA	DELAY DESCRIPTION
					START UP 6:35
9:10	9:26	16m	6	B	crusher plugged up
					SHUT DOWN 4:30

Total Buckets:

Weather Conditions: Fair

Comments:

Filled Water Truck 12:45

For plant

Crushing 3/4 RAP

Hour Meter	
PM	
AM	
Day Total	9.7
Scale Reading	
PM	
AM	
Day Total	3109 TONS

Rose Recycles @ Ajax #5

DELAY REPORT

Taylor
PLANT NAME

UNSCHEDULED DOWN TIME

DELAY CLASS	DELAY AREA
1 ELECTRICAL	A. CONVEYOR
2 MECHANICAL	B. CRUSHER
3 NO FEED	C. SCREEN
4 SLAB	D. CHUTE
5 LOADER	E. FEEDER
6 PLUG UP	F. MAGNET
7 WEATHER	G. GENERATOR
8 OTHER	H. OTHER

DATE: 10/19/12

PLANT: CRUSH PLANT

OPERATOR: Rusty Jones

MANAGER: Tom Downs

INCLUDE START AND STOP TIMES

TIME DOWN	TIME UP	TOTAL TIME	DELAY CLASS	DELAY AREA	DELAY DESCRIPTION
					START UP 12:10
		6:10 HRS			Change Plant over
					SHUT DOWN 4:30

Total Buckets:

Weather Conditions:

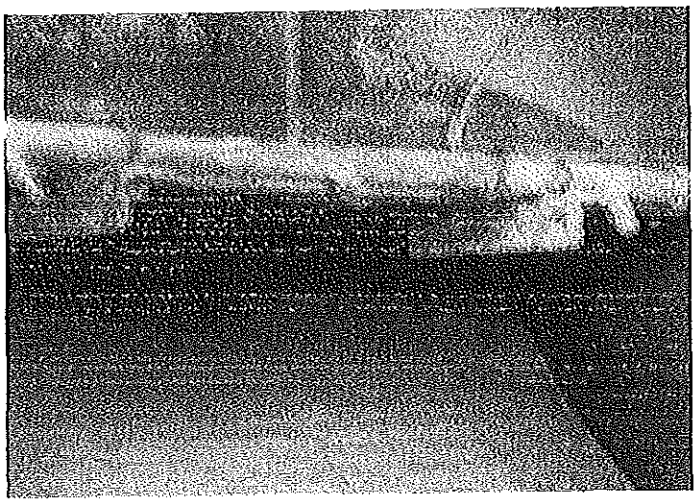
Comments:

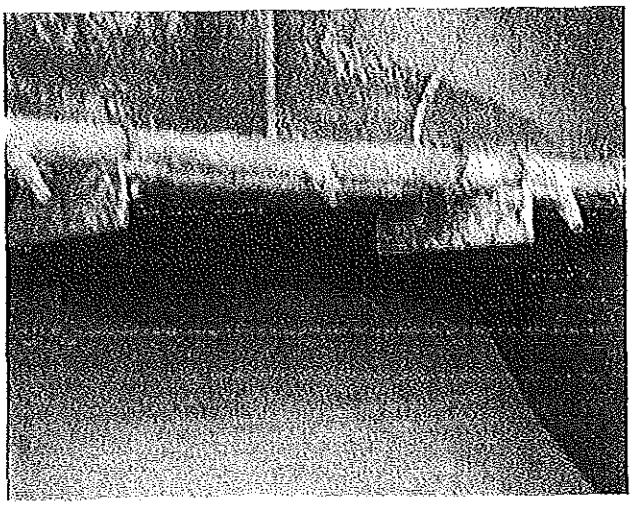
Switched plant over to start making 3/8- S Rap
- Change screens
- Add shingle hopper
- move conveyors around.

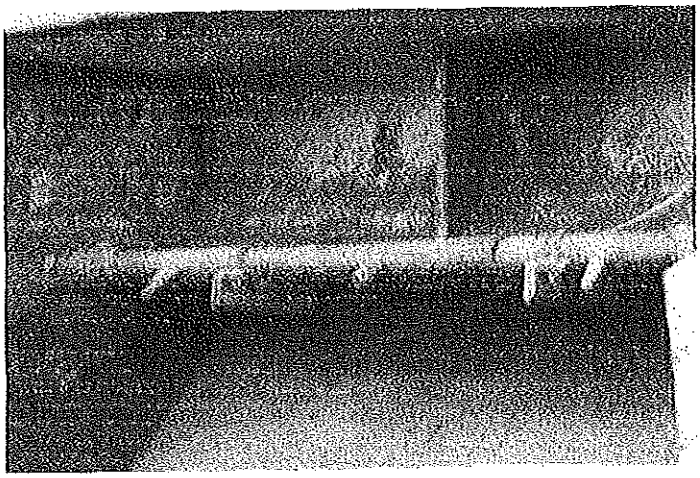
Hour Meter	
PM	
AM	
Day Total	4.4
Scale Reading	
PM	
AM	
Day Total	3/8- 1518 TONS

Shingles 91 TONS

3/8+ 158 TONS

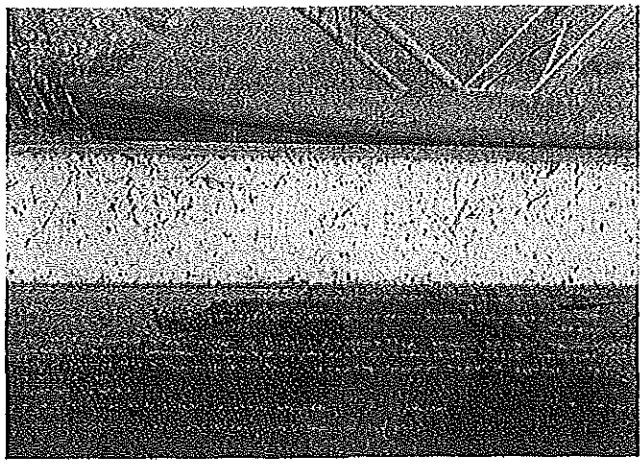


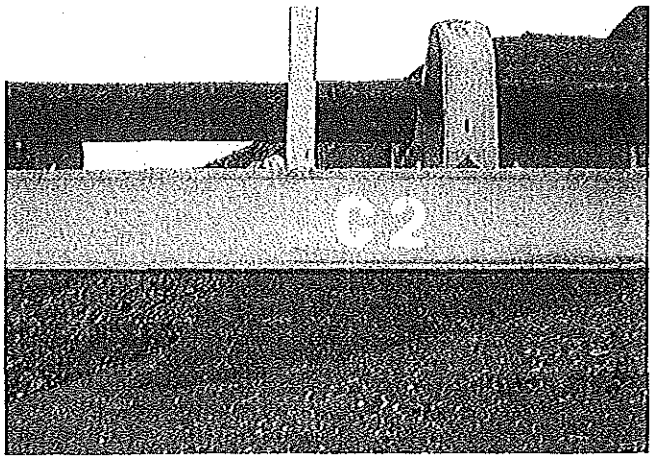


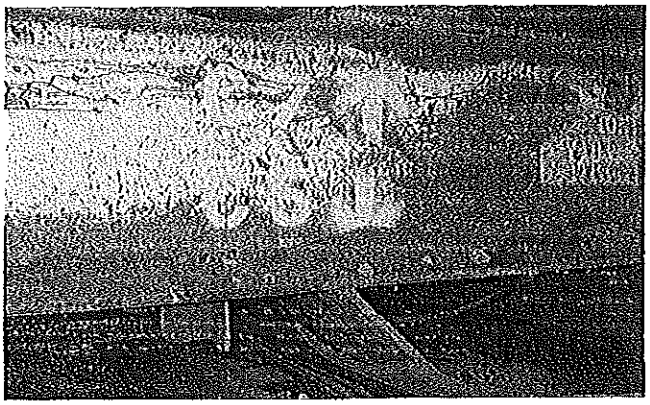


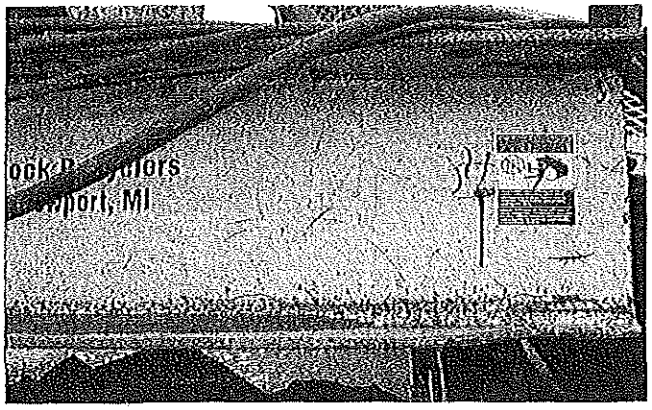
ATTACHMENT D

EQUIPMENT LABEL PHOTOGRAPHS





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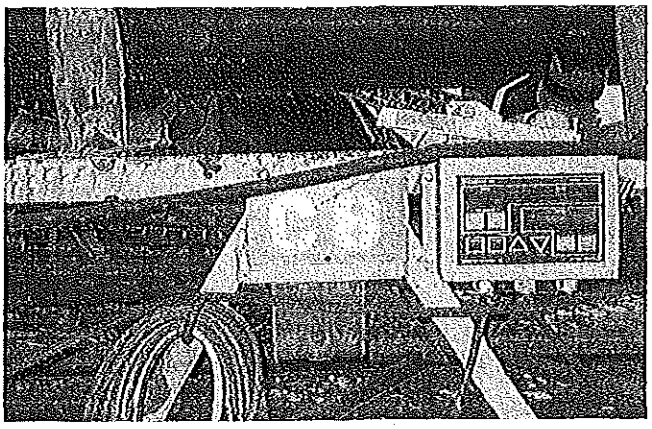
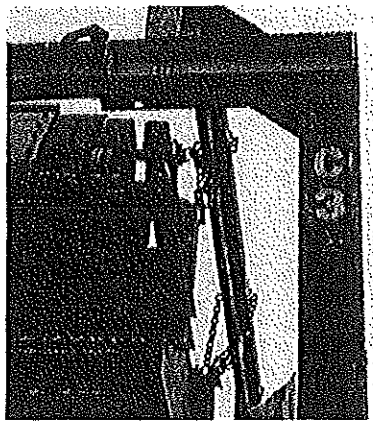
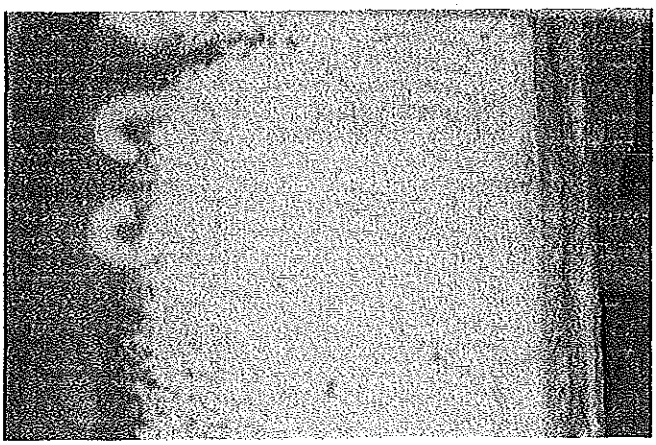
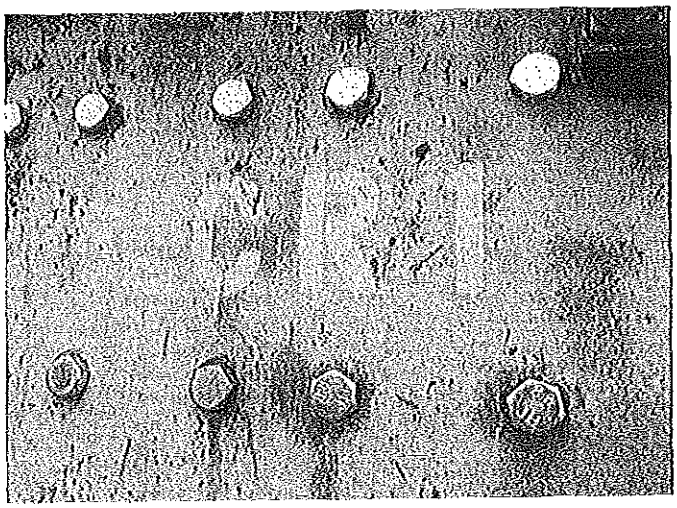








History for Detroit, MI

Monday, January 24, 2005

Monday, January 24, 2005

« Previous Day January 24 2005 View Next Day »

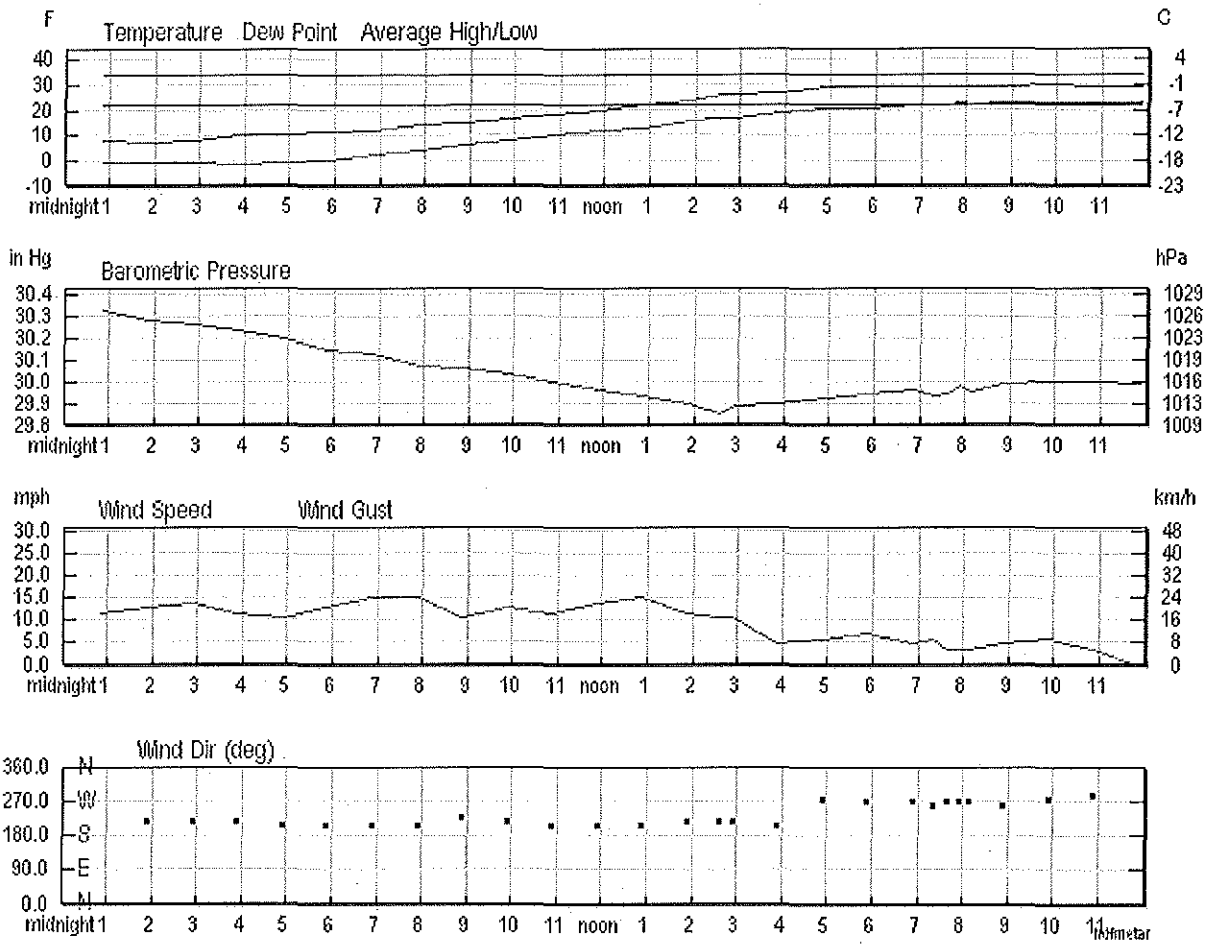
Daily | Weekly | Monthly | Custom

	Actual	Average	Record
Temperature			
Mean Temperature	**17** °F	-	
Max Temperature	**28** °F	**33** °F	**57** °F (1950)
Min Temperature	**6** °F	**21** °F	**-13** °F (1963)
Degree Days			
Heating Degree Days	48		
Moisture			
Dew Point	**12** °F		
Average Humidity	70		
Maximum Humidity	78		
Minimum Humidity	59		
Precipitation			
Precipitation	**0.00** in	-	- ()
Sea Level Pressure			
Sea Level Pressure	**30.03** in		
Wind			
Wind Speed	**10** mph (SW)		
Max Wind Speed	**15** mph		
Max Gust Speed	**21** mph		
Visibility	**10** miles		
Events	Snow		

Averages and records for this station are not official NWS values.

T = Trace of Precipitation, **MM** = Missing Value **Source:** NWS Daily Summary

Seasonal Weather Averages



Certify This Report

Hourly Observations

Time (EST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust S
12:53 AM	7.0 °F	-8.3 °F	-2.0 °F	67%	30.32 in	10.0 mi	SW	11.5 mph	-
1:53 AM	6.1 °F	-10.2 °F	-2.0 °F	69%	30.28 in	10.0 mi	SW	12.7 mph	-
2:53 AM	7.0 °F	-9.8 °F	-2.0 °F	67%	30.26 in	10.0 mi	SW	13.8 mph	-
3:53 AM	9.0 °F	-5.9 °F	-2.9 °F	59%	30.23 in	10.0 mi	SW	11.5 mph	-
4:53 AM	9.0 °F	-5.1 °F	-2.0 °F	61%	30.20 in	10.0 mi	SSW	10.4 mph	-
5:53 AM	10.0 °F	-5.2 °F	-0.9 °F	61%	30.14 in	10.0 mi	SSW	12.7 mph	-

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Time (EST)	Temp.	Windchill	Dew Point	Humidity	Pressure	Visibility	Wind Dir	Wind Speed	Gust S
6:53 AM	10.9 °F	-5.4 °F	1.0 °F	64%	30.12 in	10.0 mi	SSW	15.0 mph	-
7:53 AM	12.9 °F	-2.8 °F	3.0 °F	65%	30.07 in	10.0 mi	SSW	15.0 mph	20.7 m
8:53 AM	14.0 °F	1.2 °F	5.0 °F	67%	30.06 in	10.0 mi	SW	10.4 mph	-
9:53 AM	16.0 °F	2.3 °F	7.0 °F	68%	30.03 in	10.0 mi	SW	12.7 mph	-
10:53 AM	17.1 °F	4.3 °F	9.0 °F	71%	30.00 in	10.0 mi	SSW	11.5 mph	-
11:53 AM	19.0 °F	5.6 °F	10.9 °F	71%	29.96 in	7.0 mi	SSW	13.8 mph	-
12:53 PM	21.0 °F	7.6 °F	12.0 °F	68%	29.93 in	10.0 mi	SSW	15.0 mph	-
1:53 PM	23.0 °F	11.7 °F	15.1 °F	72%	29.90 in	10.0 mi	SW	11.5 mph	-
2:35 PM	24.8 °F	14.6 °F	15.8 °F	69%	29.85 in	10.0 mi	SW	10.4 mph	-
2:53 PM	25.0 °F	14.8 °F	16.0 °F	69%	29.89 in	10.0 mi	SW	10.4 mph	-
3:53 PM	26.1 °F	20.5 °F	18.0 °F	71%	29.90 in	10.0 mi	SSW	4.6 mph	-
4:53 PM	28.0 °F	21.7 °F	19.9 °F	72%	29.92 in	10.0 mi	West	5.8 mph	-
5:53 PM	28.0 °F	20.8 °F	19.9 °F	72%	29.94 in	10.0 mi	West	6.9 mph	-
6:53 PM	28.0 °F	22.8 °F	21.0 °F	75%	29.96 in	10.0 mi	West	4.6 mph	-
7:19 PM	28.4 °F	22.2 °F	21.2 °F	74%	29.93 in	10.0 mi	West	5.8 mph	-
7:37 PM	28.4 °F	24.6 °F	21.2 °F	74%	29.94 in	10.0 mi	West	3.5 mph	-
7:53 PM	28.0 °F	24.2 °F	21.9 °F	78%	29.98 in	10.0 mi	West	3.5 mph	-
8:07 PM	28.4 °F	24.6 °F	21.2 °F	74%	29.95 in	10.0 mi	West	3.5 mph	-
8:53 PM	28.0 °F	22.8 °F	21.9 °F	78%	29.99 in	10.0 mi	West	4.6 mph	-
9:53 PM	28.9 °F	22.8 °F	21.9 °F	75%	30.00 in	10.0 mi	West	5.8 mph	-
10:53 PM	28.0 °F	24.2 °F	21.9 °F	78%	30.00 in	10.0 mi	WNW	3.5 mph	-
11:53 PM	28.0 °F	-	21.9 °F	78%	29.99 in	10.0 mi	Calm	Calm	-

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