TECHNICAL REVIEW AND EVALUATION
OF APPLICATION FOR
AIR QUALITY SIGNIFICANT PERMIT REVISION NO. 103263
TO OPERATING PERMIT NO. 93430

I. INTRODUCTION

This Class I Significant Permit Revision (SPR) No. 103263 to Operating Permit No. 93430 authorizes Drake Cement, LLC, the Permittee, to introduce biomass as a new alternative fuel source to offset coal and pet coke consumption in the cement manufacturing process.

A. Company Information

Facility Name: Drake Cement - Drake Road Site

Mailing Address: 21803 N. Scottsdale Rd., Suite 220, Scottsdale, Arizona 85255

Facility Location: 5001 East Drake Road, Paulden, Arizona 85334

B. Attainment Classification

This facility is located in Yavapai County which is designated as attainment or unclassified for all criteria air pollutants.

II. PROCESS DESCRIPTION

A. Process Description

Drake Cement (Drake), as a part of the sustainability commitment, is proposing to install an alternative fuel system. This new alternative fuel system will have 2 stages. The first stage proposed is the Biomass system which consists of the installation of a pneumatic system to directly feed the calciner with wood chips, and blend sawdust within the existing coal and pet coke process to feed the kin and calciner. The second stage of the system will involve a storage center to feed the calciner with different alternative fuels such as tires, plastics, organic fuels, and wood. This permit revision proposes to include only the first stage, feeding the calciner with wood chips and blending sawdust with the existing coal and pet coke processes.

1. Biomass Source

Drake has recently secured a source of biomass that will be recovered from the Drake Pronghorn Corridor Project Phase 1. This project has also received a letter of support from Prescott National Forest to allow and provide administrative means to remove biomass from the project area to be utilized by Drake. With the support of Prescott National Forest and the project award through Arizona Game

and Fish, Drake has successfully secured a supply of biomass to move forward with an alternative fuels system at the plant.

Drake is also collaborating with contractors who are negotiating with the Kaibab National Forest to purchase the trees they have cut and piled in their own projects. The supply contractor also has commitments for material from both State and private lands in the Paulden area. These agreements and diverse portfolio of sources will allow for a stream of biomass to be used at the Drake Cement Plant. The proposed project will utilize woods chips and sawdust recovered from these sources to decrease energy costs and offset the use of coal and pet coke while restoring wildlife habitat and improving watersheds in central Arizona.

2. Proposed Project

The project will be designed to be able to provide a total replacement of the traditional fuel used in the calciner (mix coal - coke) with wood chips in a progressive way. The forecasted fuel replacement will be performed starting with replacing 10- 20% of mixed coal-coke with biomass and increasing initially until 50% replacement is achieved. Ultimately it is anticipated that up to 100% replacement of the mixed coal-coke can be achieved.

The design values of the Biomass system were obtained by taking the 2023 fuel consumption data, excluding non-representative months due to kiln down events. Based on the fuel consumption assessment the coal-coke pulverized mix in the calciner was on average 2,950 tons per month (4.10 tons per hour). Converting this value to heat consumption (11,810 BTU/lb per mix coal-coke) this is equivalent to 69,679 MMBTU per month, therefore the biomass project must supply feed to the calciner with an equivalent heat value using wood chips.

Based on representative source testing and laboratory analysis, the biomass material has a heat value of 8,200 BTU/lb and a density of 15 pounds per cubic foot. According to the characteristics of the wood chips and fuel requirements, for 100% replacement of coal-coke pulverized mix in the calciner, Drake will need to feed approximately 4,248 tons per month of wood chips, which is equivalent to 5.9 tons per hour (TPH).

In addition, a portion of the wood chips as sawdust may be collected and blended with existing coal and pet coke. Sawdust from the project would be introduced into the existing process, blended with coal and coke and utilized as additional fuel within the kiln and calciner.

3. Proposed Process - Material Feeding and Storage

The proposed biomass source will be processed off-site. Wood chips and sawdust will be brought to the site using assumed 20-ton highway haul trucks and stockpiled on the south side of the kiln calciner or within the existing material storage building with coal and pet coke. Stockpiled wood chips will be delivered to a feed hopper using a front-end loader, and pneumatically blown into the

calciner near where the existing pulverized coal and coke mix is introduced. Sawdust would be stored and blended with coal and coke within the existing operations at the material storage building. The following provides a description of the proposed biomass system areas and associated new process equipment:

a. Storage Pile

The storage will have a capacity of 9,100 cubic feet equivalent to approximately 68 tons, with dimensions 100' × 20' plan view at 45 degrees angle to repose. The proposed stockpile volume for the system can work approximately 12 hours continuously in the scenario that Drake replaces 100% of existing fuel in the calciner.

b. Feeding Hopper

Biomass will be fed with a wheel loader such as CAT 966 or bigger. The hopper will have a capacity of 20 cubic yards. With this capacity the system can operate for approximately 40 minutes, before being fed again.

c. Twin Screw Feeder

The feeding hopper includes a dosing twin-screw feeder installed at the bottom, and the screw feeders will be equipped with a Variable Frequency Drive (VFD) allowing control of the flow of wood chip feeding to the calciner.

d. Screw Conveyor – Collector

The screw conveyor will be loaded from the twin screw feeder and unloaded to a rotary valve, this screw conveyor will have a scale control system to weigh and control the material dosing on the twin screw feeders through the VFD and integrated control system.

e. Rotary Valve

The rotary valve will feed the pneumatic pipe, designed exclusively for feeding wood chips. The rotary valve will be sealed to connect with the pneumatic pipe.

f. Blower

A blower (AERZEN GM80L or equivalent) will be utilized for conveying up to 5.9 tons/hr. which is equivalent to replacing up to 100% of mixed coal - coke fuel.

g. Pipeline

The biomass system will use an existing 8-inch diameter pneumatic pipe installed on-site.

h. Control and Automation

To be supplied by competent suppliers such as Siemens, ABB, Rockwell or equivalent.

The transfer of material after the feed hopper will be through enclosed screw conveyors and a pneumatic transfer system into the calciner. Only fugitive emissions resulting from the transfer and storage of wood chips are proposed for the project.

B. Control Devices

No new pollution control device will be added for this SPR. When transferring biomass, the paved road emissions will be controlled by water and weeping.

C. Process Flow Diagram

A process flow diagram is shown in Appendix A.

III. COMPLIANCE HISTORY

A. Physical Inspections and Compliance Certification Reviews

During this permit term, the facility has had three (3) physical inspections and three (3) compliance certification reviews. No deficiencies were noted during the compliance certification report reviews. However, two (2) formal enforcement actions resulted from the physical inspections.

Case ID No. 209920

On January 17, 2023, ADEQ observed visible emissions from the Finish Mill 3rd floor bucket elevator and the old separator duct flexible joint which violated Condition XI.B.3.b.4 of Attachment “B”. A Notice of Correction (NOC) was issued on January 17, 2023. The requested information was received on January 24, 2023 and this case was closed on January 25, 2023.

Case ID No. 212050

On May 2, 2023, ADEQ conducted two (2) opacity observations from the 4th floor Finish Mill conveyor system, and the opacity results were 22.08% and 19.79% which violated Condition IV.C.2 of Attachment “B”. A Notice of Violation (NOV) was issued on May 4, 2023. The requested information was received on May 22, 2023 and this case was closed on May 25, 2023.

Case ID No. 213475

On June 12, 2023, it was reported that the dust collectors associated with the new Vertical Mill were not fully enclosed as required in Condition IV.C.7 of Attachment "B". However, another inspection issued an NOV for this matter on June 21, 2023 with Case ID 213475.

To return to compliance, an SPR application was submitted. In the meantime, ADEQ issued Consent Order Docket No. A-06-23 on July 13, 2023 before the SPR LTF No. 99268 was issued on December 13, 2023. On June 19, 2024, both the Consent Order Docket No. A-06-23 2024 and the NOV Case ID No. 213475 were closed.

B. Performance Tests Conducted and Results

During this permit term, the performance tests conducted, and results are shown in Table 1:

Table 1: Performance Test Results

Emission Unit	Pollutant	Date of Test	Results of Performance Test
Main Baghouse (BH-5.30), Clinker Cooler BH (BH-10.13)	Particulate Matter (PM) and RATA	09/20/2022 – 09/21/2022 and 10/05/2022 – 10/06/2022	Pass
HES Baghouse (628.10PF)	PM	10/04/2022	Pass
Clinker Cooler (BH-10.13)	PM	12/14/2022	Pass
Clinker Cooler (BH-10.13), DC-2.9, DC-14.29	PM	02/28/2023 – 03/02/2023	Pass
Paulden Storage Facility	Opacity	04/20/2023	Pass
Clinker Cooler Baghouse BH-10.13	PM_{10} and Opacity	07/06/2023	Pass
Twin Belt System	Opacity	09/25/2023 – 09/26/2023 and 10/02/2023 – 10/03/2023	Pass
Dust Collectors DC-2.5, DC-5.22, DC-6.10	PM	09/18/2023 – 09/19/2023	Pass
Clinker Cooler BH-10.13	PM	09/12/2023	Pass
Main Baghouse (BH-5.30)	PM and PM_{10}	09/13/2023 – 09/14/2023	Pass
Cement Plant	RATA	09/13/2023 – 09/15/2023	Pass
HES Baghouse (628.10PF)	PM_{10} and Opacity	10/10/2023 and 10/18/2023	Pass
Clinker Cooler Baghouse BH-10.13	PM	12/08/2023	Pass
Main Stack (MS-5.38)	Dioxins/Furans	12/06/2023 – 12/07/2023	Pass

Emission Unit	Pollutant	Date of Test	Results of Performance Test
(25) Finish Mill 2 sources and (3) CKD sources	Visible Emissions Initial Compliance	02/28/2024 – 03/01/2024 and 04/09/2024 – 04/10/2024	Pass
Dust Collectors DC-13.19, DC-13.20, DC-13.40, DC-14.10, DC-13.4, DC-14.21, DC-11.2, and DC-11.6.1	PM and Opacity	04/09/2024 – 04/11/2024	Pass
Clinker Cooler (638.10.PF On and Off conditions), 632.14.PF, 632.22.PF, 637.60.PF01, 637.62.PF01	PM and Opacity	04/12/2024 and 04/15/2024 – 04/18/2024	Pass
Clinker Cooler Baghouse (BH-10.13)	PM_{10}	05/22/2024	Pass
Dust Collectors DC-2.10, DC-4.18, DC-4.19, DC-4.20, DC-5.5, DC-7.16, DC-7.23, DC-11.11, DC-11.15, DC-12.7.1, DC-12.7.2	PM	05/13/2024 – 05/22/2024	Pass

IV. EMISSIONS

Feed material will be brought onto the site using assumed 20-ton haul trucks which will unload and stockpile wood chips adjacent to the kiln calciner. Sawdust may also be brought in and stored in the existing material storage building where it would be blended with coal and pet coke utilizing the existing process equipment. Potential fugitive emissions of particulate matter may result from the transfer and storage of wood chips to the storage pile and from the loader transfer of wood chips into the feed hopper which supplies feed that is metered and pneumatically blown into the calciner. The remaining portions of the proposed process involve totally enclosed pneumatic metering and transfer of wood chips into the calciner. There are no additional point sources of particulate emissions within the proposed process after the feed hopper.

The combustion process results in emissions of regulated gaseous pollutants. No appreciable difference or increase in other regulated pollutants is anticipated with utilizing biomass in lieu of traditional coal or pet coke fuels. Drake currently has permitted emission limits for all regulated pollutants which are continuously monitored through Continuous Emission Monitoring System (CEMS) at the site. The proposed project will continue to comply with existing emission limits for all regulated pollutants within the existing air quality permit.

The operating throughput and schedule for the proposed source is conservatively estimated at a maximum of 6 TPH of biomass introduced into the process and 8,760 hours per year of operation for purposes of calculating potential emissions. The emission increase resulted from this SPR includes the emissions from biomass loading and unloading, vehicle traveling on paved road, and biomass storage pile wind erosion, which are all fugitive emissions. This facility is a source listed in Arizona Administrative Code (A.A.C.) R18-2-101.23 as a categorical source and thus, fugitive emissions are added to the facility-wide potential to emit (PTE). The emission increase was calculated based on EPA's Compilation of Air Pollution Emission Factors (AP-42) Section 13.2.1 and 13.2.4, PM_{10} and $PM_{2.5}$ mass fractions from Ceidars, Appendix A, site-specific silt content, and the report "USEPA, January 1989. Air/Superfund National Technical Guidance Study Series; Volume III – Estimation of Air Emissions from Cleanup Activities at Superfund Sites, Interim final report EPA-450/1-89-003". The facility's PTE is provided in Table 2:

Table 2: Potential to Emit (tpy)

Pollutant	Emissions (tons per year)			Permitting Exemption Threshold (tons per year)	Minor NSR Triggered?
	Pre-Revision	Post-Revision	Difference		
PM	175.59	177.20	+1.61	N/A	N/A
PM_{10}	135.02	135.58	+0.56	7.5	No
$PM_{2.5}$	83.77	84.20	+0.43	5	No
NO_x	418.3	418.3	0.00	20	No
SO_2	23.1	23.1	0.00	20	No
VOCs	39.0	39.0	0.00	20	No
CO	1329.75	1329.75	0.00	50	No

V. MINOR NEW SOURCE REVIEW (NSR)

Minor new source review is required if the emissions of any physical change or change in the method of an operation of an emission unit or stationary source that increases the PTE of any regulated minor NSR pollutant by an amount equal to or greater than the permitting exemption threshold (PET). As shown in Table 2 above, the emission increase resulted from this SPR is below the PET. Thus, this facility is not subject to minor NSR requirements.

VI. VOLUNTARILY ACCEPTED EMISSION LIMITATIONS AND STANDARDS

No new voluntarily accepted emission limitation or standard were added for this SPR.

VII. APPLICABLE REGULATIONS

Drake Cement is covered under the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart LLL, which establishes emissions limitations and other requirements for the portland cement industry and provides an exemption from the requirements of New Source Performance Standards (NSPS) Subpart F: Standards of Performance for Portland Cement Plants. This exemption is contained under 40 CFR § 63.1356 which states:

If an affected source is subject to this subpart with a different emissions limit or requirement for the same pollutant under another regulation in Title 40, once it is in compliance with the most stringent emissions limit or requirement, it is not subject to the less stringent requirement. Until it is in compliance with the more stringent limit, the less stringent limit continues to apply.

Based on this exemption, Drake is in compliance with the more stringent standards for the affected facilities in this SPR under NESHAP Subpart LLL and is not subject to less stringent standards regulated under NSPS Subpart F. The applicable requirements under NESHAP Subpart LLL are already in the permit. No new applicable requirements were added for this SPR.

Table 3 identifies the applicable regulations associated with the emission unit of this SPR, including the verification as to why that standard applies. The table also contains a discussion of any regulations the emission unit is exempt from.

Table 3: Applicable Regulations

Unit	Control Device	Rule	Discussion
Biomass Feed System (To Be Constructed)	N/A	NESHAP 40 CFR Part 63 Subpart LLL, and NSPS 40 CFR Part 60 Subpart F	NESHAP 40 CFR Part 63 Subpart LLL - "National Emission Standards for Hazardous Air Pollutants from the Portland Cement Manufacturing Industry" and NSPS 40 CFR Part 60 Subpart F - "Standards of Performance for Portland Cement Plants" are both applicable to Portland cement manufacturing facilities, and the emission limits from these two subparts for this emission unit are the same. To be consistent with the other cement plant emission units, the emission limit from 40 CFR Part 63 Subpart LLL was incorporated into the permit. A comparison of the applicable potentially overlapping emissions limits can be found in Table 4 to show that the emission limits from 40 CFR Part 63 Subpart LLL and 40 CFR Part 60 Subpart F are the same.

Table 4: Comparison of Potentially Overlapping Emissions Limits under 40 CFR Part 63 Subpart LLL and 40 CFR Part 60 Subpart F

Unit	Pollutants	NSPS Subpart F Limits	NESHAP Subpart LLL Limits	Limit in Drake's Permit
Affected Sources Other than Kilns or Clinker Coolers	Opacity	10%	10%	10%

VIII. PREVIOUS PERMIT REVISIONS AND CONDITIONS

A. Previous Permit Revisions

Table 5 provides a description of the permit revisions made to Permit No. 93430 during the previous permit term.

Table 5: Permit Revisions to Permit No. 93430

Permit Revision No.	Permit Revision Type	Brief Description
98788	Minor Permit Revision (MPR)	This was to modify the Cement Kiln Dust (CKD) silo at the cement plant to allow for better metering and control of the CKD to the finish mill.
98789	MPR	This was to authorize the load, unload, store, and transport of pozzolan to the material storage building for the pozzolanic cement project.
99268	SPR	This revision authorized Drake to make changes to the new finish mill and its associated equipment as originally permitted under SPR No. 81739.
101092	MPR	This revision authorized Drake to install a new process filter in the Raw Grinding building to improve the production efficiency in the Raw Mill and optimize the vent capacity in the Kiln process flow.

B. Changes to Current Renewal

Table 6 addresses the changes made to the sections and conditions from Permit Revision No. 101092:

Table 6: Previous Permit Conditions

Section No.	Determination			Comments
	Added	Revised	Deleted	
Att. "B" Section IV		X		Finish Mills, Storage Bins, Bulk Loading and Unloading Systems, Biomass Feed System, and Conveying System Transfer Points Subject to 40 CFR 63 Subpart LLL: Added the Biomass Feed System.
Att. "C"		X		Equipment List: Revised to reflect the most recent equipment operating at the facility and to include equipment information provided.

IX. MONITORING, RECORDKEEPING, AND REPORTING REQUIREMENTS

Table 7 contains an inclusive but not an exhaustive list of the monitoring, recordkeeping and reporting requirements prescribed by this SPR. The table below is intended to provide insight to the public for how the facility is required to demonstrate compliance with the emission limits in this SPR. Records are required be kept for a minimum of 5 years as outlined in Section XII of Attachment "A" of the permit.

Table 7: Permit No. 103263

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
Biomass Feed System	Opacity	≤ 10%	The biomass transfer after the feed hopper will be totally enclosed and exempt from visible emissions monitoring requirement per 40 CFR 63.1350(f)(1)(v). The biomass transfer to the feed hopper is under fugitive dust section.	N/A	N/A
Fugitive Dust (Biomass Storage Pile and Related Material Handling Operations)	Opacity	≤ 40%	A Method 9 observer is required to conduct a monthly survey of visible emissions.	Record the dates and types of dust control measures employed, and if applicable, the results of any Method 9 observations, and any corrective action taken to lower the opacity of any excess emissions.	Report excess emissions and deviations if applicable.

Emission Unit	Pollutant	Emission Limit	Monitoring Requirements	Recordkeeping Requirements	Reporting Requirements
				Maintain at all times a copy of the approved Dust Control Plan. Maintain daily records of watering and vacuuming performed at all paved roads and monthly records of maintenance activities conducted on paved roads.	

X. COMPLIANCE ASSURANCE MONITORING (CAM)

The CAM rule applies to pollutant-specific emission units (PSEU) at a major Title V source if the unit meets all of the following criteria:

A. The unit is subject to an emission limit or standard for the applicable regulated air pollutant;

B. The unit uses a control device to achieve compliance with the emission limit or standard; and

C. The unit has "potential pre-control device emissions" of the applicable regulated air pollutant equal to or greater than 100% of the amount (tons/year) required for a source to be classified as a major source. "Potential pre-control device emissions" means potential to emit (PTE, as defined in Title V) except emissions reductions achieved by the applicable control device are not taken into account.

The general purpose of monitoring required by the CAM rule is to assure compliance with emission standards by ensuring that control devices meet and maintain the assumed control efficiencies. Compliance is ensured through requiring monitoring of the operation and maintenance of the control equipment and, if applicable, operating conditions of the pollutant-specific emissions unit. For the PSEUs that have post control potential to emit equal to or greater than 100 percent of the amount, in tons per year, required for a source to be classified as a major source, for each parameter monitored, the owner shall collect four or more data values equally spaced over each hour. Such units are defined as “large” PSEUs. For all other PSEUs (“small” PSEUs), the monitoring shall include some data collection at least once per 24-hour period. In the specific case of the PSEUs associated with this SPR, they are not subject to the CAM rule, because none of the PSEUs have a control device as defined in 40 CFR 64.1 (see Table 8).

Table 8: Control Measures of the PSEUs

PSEU	Control Measure
Vehicle Road Emissions (Biomass Transfer from Offsite to Biomass Storage Pile and from Storage Pile to the Feed Hopper)	Watering and Sweeping*
Drop of Biomass to Storage Pile and to the Feed Hopper	N/A
Biomass Storage Pile Wind Erosion	N/A
Biomass Feed System	Totally Enclosed*

* This control measure is not considered a control device per 40 CFR 64.1.

XI. ENVIRONMENTAL JUSTICE ANALYSIS

The Environmental Protection Agency (EPA) defines Environmental Justice (EJ) to include the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and polices. The goal of completing an EJ assessment in permitting is to provide an

opportunity for overburdened populations or communities to allow for meaningful participation in the permitting process. Overburdened is used to describe the minority, low-income, tribal and indigenous populations or communities that potentially experience disproportionate environmental harms and risks due to exposures or cumulative impacts or greater vulnerability to environmental hazards. This SPR has emission increases significantly below the permitting exemption thresholds and thus, it will not result in any additional impacts.

The EPA developed EJSCREEN, a publicly available tool that uses nationally consistent data, to produce maps and reports detailing environmental and demographic indicators that can be used to evaluate EJ concerns. In the EJSCREEN tool guidance, a 90th percentile threshold was selected to evaluate the potential for EJ concerns in a community, meaning that if the area of interest exceeds the 90th percentile for one or more of the EJ indexes, that area is considered to have a high potential for EJ concerns. Using the EJSCREEN tool, ADEQ mapped the location of Drake and reviewed a five-mile radius around the facility for potential environmental justice concerns (see Figure 1).

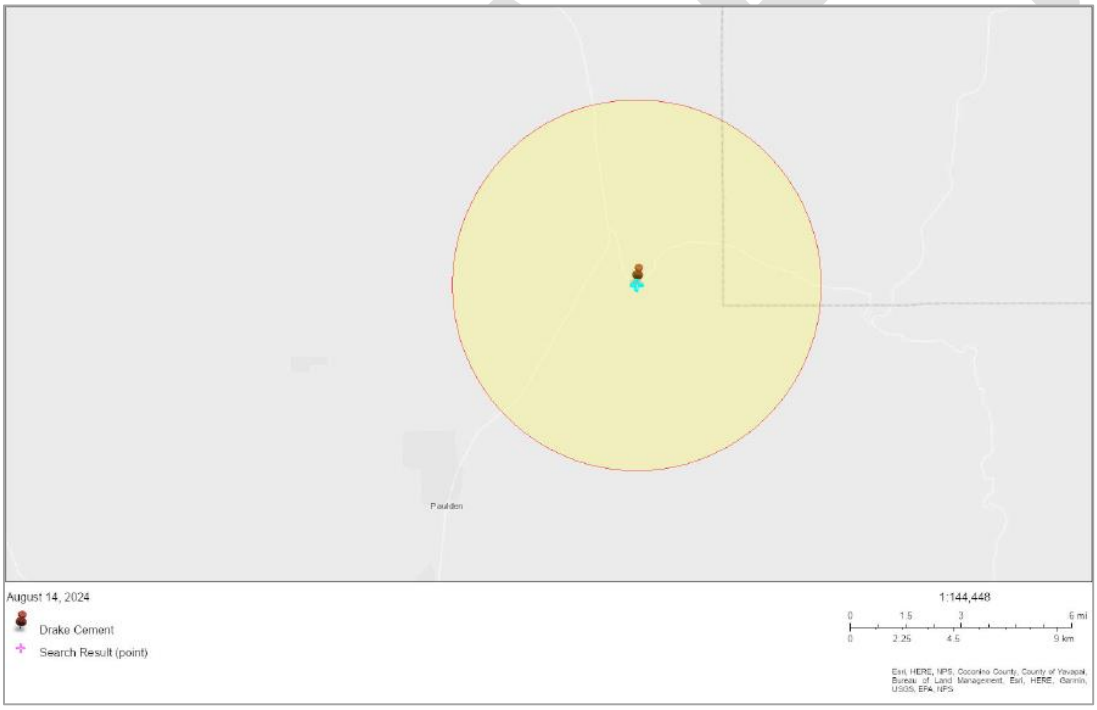


Figure 1: A 5-Mile Radius around Drake Cement for Potential Environmental Justice Concerns

A. Demographics

The ADEQ relied on data from the EPA EJ Screen tool to assess the demographics of the communities near the initial location for this proposed facility. The EJSCREEN report shows that the Demographic Indicators; People of Color, Low Income, Unemployment Rate, Limited English-Speaking Households, Less Than High School Education, Under Age 5, and Over Age 64, are all well below the 90th percentile threshold for both Arizona and the USA averages (see Table 9). Additionally, ADEQ posts a notice in two newspapers of general circulation within the surrounding community, as well as publishes the notice

electronically to ensure that the community has ample opportunity to provide comments on the draft documents prior to a final permitting decision.

Table 9: EJSCREEN Report Demographic Indicators for Drake

Socioeconomic Indicators	Percentile in State	Percentile in USA
Demographic Index	30	35
Supplemental Demographic Index	46	49
People of Color	33	46
Low Income	33	34
Unemployment Rate	49	50
Limited English-Speaking Households	0	0
Lees Than High School Education	50	48
Under Age 5	35	32
Over Age 64	73	79

B. Summary of Air Quality

All air quality related environmental indicators within a 5-miles radius of the facility were below the 90th percentile for both Arizona and the USA averages.

C. Conclusion

The ADEQ concludes that the protections afforded by Arizona Revised Statutes (A.R.S.) § 49-426, which are imposed through the permit, ensure that the public health and environment in Arizona are protected and that the public notice and comment opportunities afforded to the community on this SPR satisfy the public participation component of the EPA EJ Guidance. ADEQ has determined that the issuance of this SPR will not result in any significant environmental or public health impacts.

XII. AMBIENT AIR IMPACT ANALYSIS

The emissions increases resulting from this SPR are significantly below the PET and thus, an ambient air impact analysis is not required for this SPR.

XIII. LEARNING SITE EVALUATION

In accordance with ADEQ's Environmental Permits and Approvals near Learning Sites Policy, the Department is required to conduct an evaluation to determine if any nearby learning sites would be adversely impacted by the facility. Learning sites consist of all existing public schools, charter

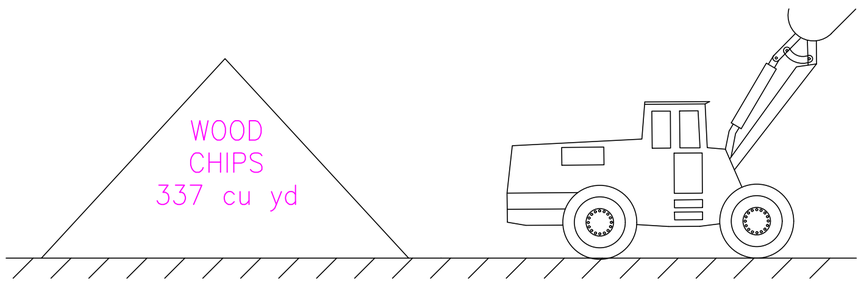
schools and private schools the K-12 level, and all planned sites for schools approved by the Arizona School Facilities Board. The learning sites policy was established to ensure that the protection of children at learning sites is considered before a permit approval is issued by ADEQ.

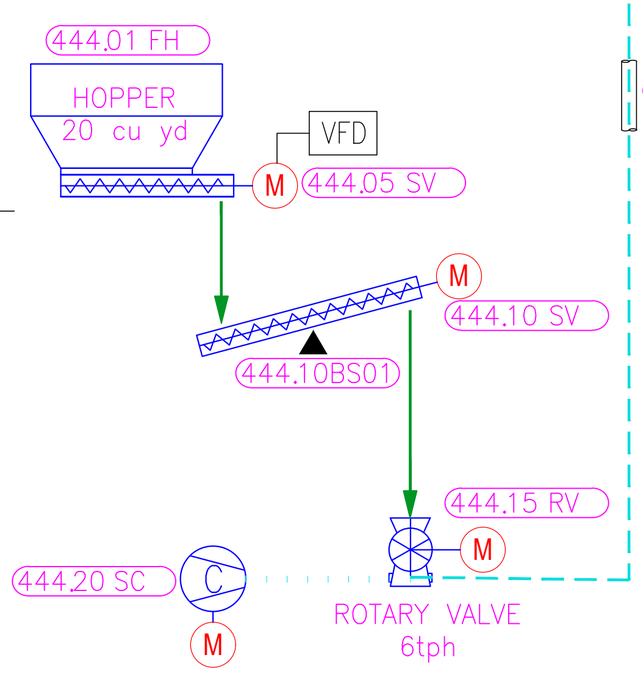
ADEQ did not identify any learning sites within two (2) miles of the facility.

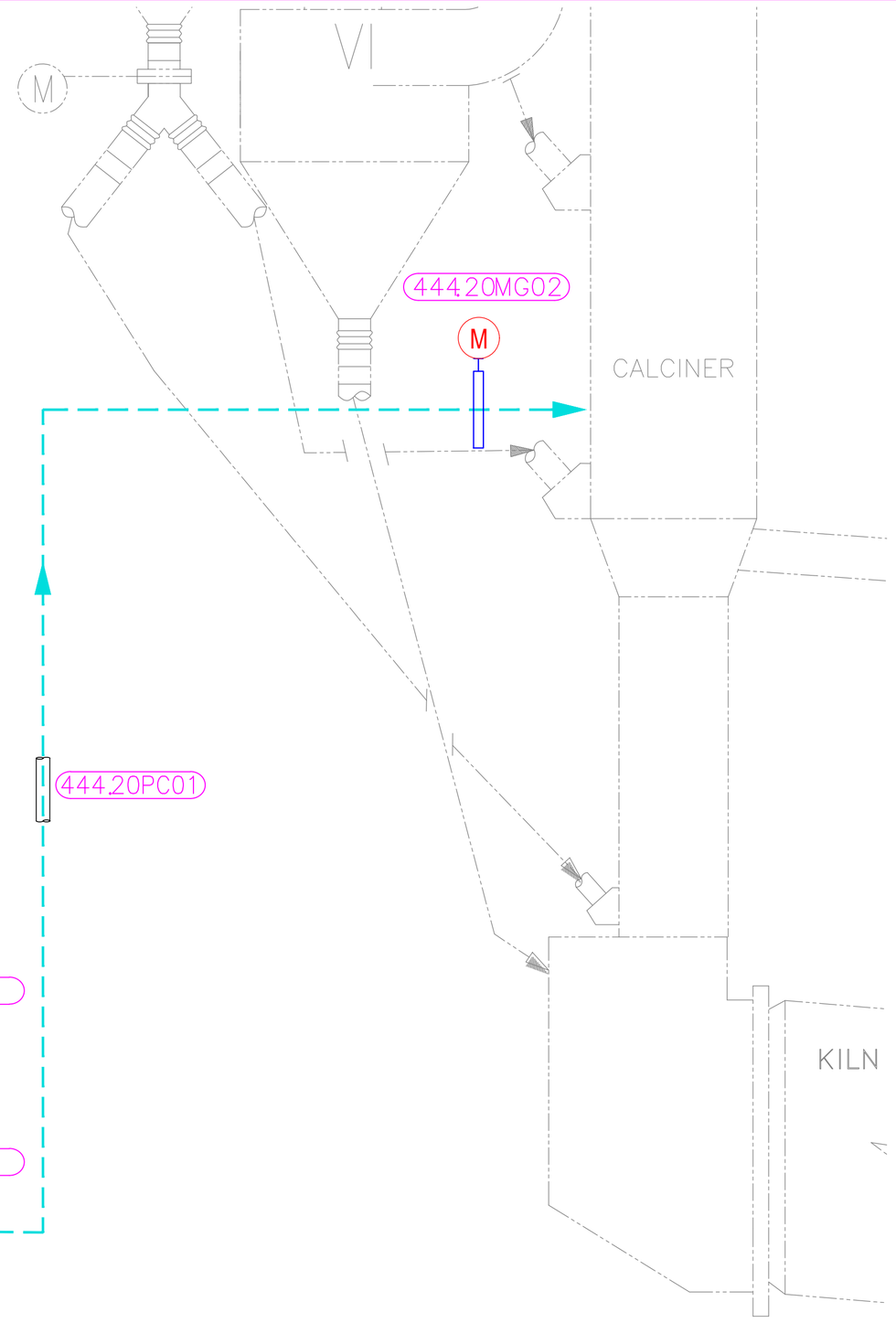
XIV. LIST OF ABBREVIATIONS

A.A.C. ..... Arizona Administrative Code
ADEQ ..... Arizona Department of Environmental Quality
AQD ..... Air Quality Division
A.R.S. ..... Arizona Revised Statutes
BTU/lb. ..... British Thermal Units per Pound
CAM ..... Compliance Assurance Monitoring
CEMS ..... Continuous Emission Monitoring System
CFR ..... Code of Federal Regulations
CO ..... Carbon Monoxide
EJ ..... Environmental Justice
EPA ..... Environmental Protection Agency
MPR ..... Minor Permit Revisio
NAAQS ..... National Ambient Air Quality Standard
NESHAP ..... National Emission Standards for Hazardous Air Pollutants
NO_X ..... Nitrogen Oxides
NOC ..... Notice of Correction
NOV ..... Notice of Violation
NSPS ..... New Source Performance Standards
NSR ..... New Source Review
PET ..... Permitting Exemption Threshold
PM ..... Particulate Matter
PM_{10} ..... Particulate Matter less than 10 µm nominal aerodynamic diameter
$PM_{2.5}$ ..... Particulate Matter less than 2.5 µm nominal aerodynamic diameter
PSEU ..... Pollutant-Specific Emission Unit
PTE ..... Potential to Emit
RATA ..... Relative Accuracy Test Audit
SO_2 ..... Sulfur Dioxide Significant Impact Levels
SPR ..... Significant Permit Revision
TPH ..... Tons per Hour
TPY ..... Tons per Year
VFD ..... Variable Frequency Drive
VOC ..... Volatile Organic Compound
yr ..... Year

Appendix A. Process Flow Diagram







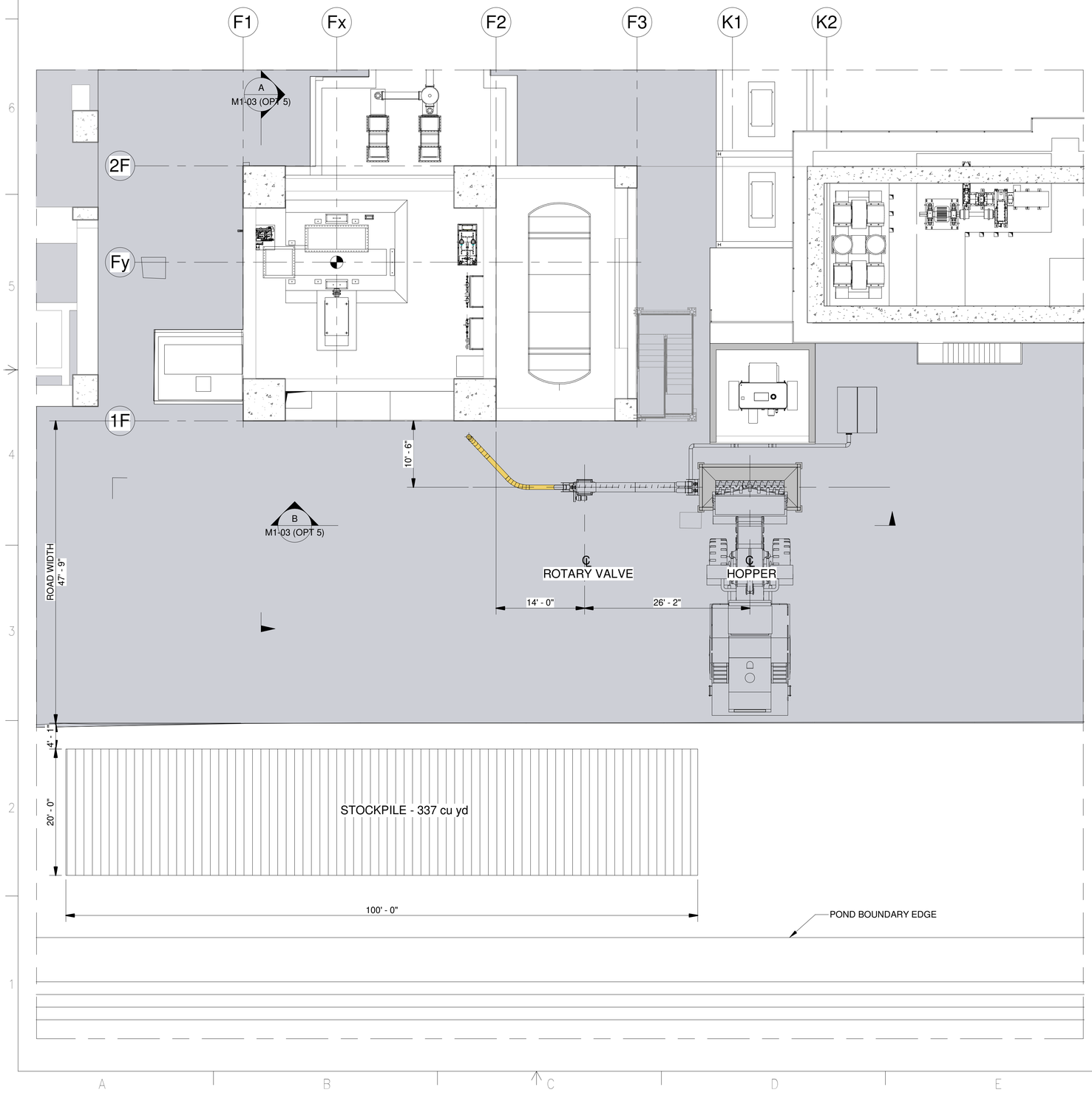
AIR WITH MATERIAL

CLEAN AIR

MATERIAL

DRAKE	Drake Cement LLC
CLIENT	DRAKE CEMENT LLC
TITLE	ALTERNATIVE FUELS PROCESS FLOW SHEET (DIRECT OPTION)

PROJ No. ----	PLANT AREA ----	EQUIP No NA	
DESIGN RPAZ	DRAWING MMY	CHECK RPAZ	
APPROVED ERS	DRAWING No. M0-01		
SCALE NTS	DATE JUNE 23	SHEET N°/TO 1/1	REV. B



REV N:	DRAW:	APROV:	DATE:	DESCRIPTION
A	MMY	RPAZ	10.26.2023	- FOR REVIEW

DRAKE **Drake Cement LLC**

CLIENT: DRAKE CEMENT LLC

TITLE: BIOMASS

GENERAL ARRANGEMENT

PLAN VIEW – EL +0'-6"

PROJ No.	PLANT AREA	EQUIP No

DESIGN	DRAWING	CHECK
RPAZ	MMY	RPAZ

APPROVED	DRAWING No.
RPAZ	M1-01 (OPT 5)

SCALE	DATE	SHEET N°/TO	REV.
AS SHOWN	SEP 2023	1/1	A