

APPENDIX C

SUMMARY OF CONFIDENTIAL INFORMATION FROM THE
AGRICULTURAL INDUSTRY AND ENGINE MANUFACTURERS,
DISTRIBUTORS, AND DEALERS

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The table below summarizes information gathered during development of the Proposed Revisions to the Airborne Toxic Control Measure for Stationary Compression Ignition Engines (January through mid-March 2005). Staff greatly appreciate the cooperation of local air districts, agricultural industry organizations, and major agricultural engine manufacturers, distributors, and dealers who provided information about the technical, economic, and practical considerations regarding the initial purchase and replacement of stationary diesel agricultural pump engines.

Information Requested	Responses
Availability of 0.15 grams per brake horsepower-hour (g/bhp-hr) particulate matter (PM)-compliant new stationary diesel agricultural pump engines >50 to <175 horsepower (hp).	<ul style="list-style-type: none"> • All major agricultural pump engine manufacturers preferentially design engines to meet federal off-road new engine certification standards. • No agricultural pump engine manufacturer has engines available in all the hp ranges needed to meet the current demand for >50 to <175 hp pump engines. • Very few >50 to 99 hp pump engine models test at ≤ 0.15 g/bhp-hr PM. Except for one manufacturer, very few 100 to <175 hp engine models test at that level. For further detail about test results, see Tables II-2 and II-3 of this Staff Report. • Engines are certified to meet the federal off-road new engine standards, not to off-road new engine certification test results.
Initial purchase issues.	<ul style="list-style-type: none"> • Engine dealers work with each farmer to address the farmer's specific pumping task needs and maintenance and economic considerations. • Pump engine size is determined by draw depth, which varies with the water table. • If a larger-than-necessary engine for a particular pumping task is operated at <60 percent load, lugging and poor fuel consumption may result. Also, the cylinder temperature may not get high enough for proper sealing causing oil slobber, excess blow-by, decreased engine life, and increased emissions. Warranty provisions could be affected. • A larger-than-necessary engine is likely to cost \$1,500/10-25% more than a smaller engine.

Information Requested	Responses
<p>Repower (replacing existing engine) issues.</p>	<ul style="list-style-type: none"> • Most/80% of new stationary agricultural pump engines sold are repowers. • Replacing an existing pump engine with one of a different make, model design, or size may require the replacement of one or more significant pieces of ancillary equipment, e.g.: skids, housing, flywheel coupler, gear head, or drive train. A case-by-case evaluation of the circumstances is required to determine what, if any ancillary equipment needs to be replaced. • The estimated additional cost of ancillary equipment is \$800-\$3,000 or more. For example, a new gear head costs \$1,800-\$2,100 and its installation would cost an additional \$1,500-\$1,800. • Currently, the greatest demand for engine replacement is in the 75 to 85 hp size range. • See New Engines Issues, above, for discussion about use of larger-than-necessary engines. • Several local air districts that administer Carl Moyer Program incentive funding for engine replacement do not provide funds for engines more than 25% larger than existing engines, nor for ancillary equipment. • Generally, farmers prefer to repower with similar make and model engines based on service requirements, cost, maintenance requirement familiarity, and/or brand loyalty.
<p>Compliance alternative issues.</p>	<ul style="list-style-type: none"> • Add-on Control Device: <ul style="list-style-type: none"> • No add-on devices are verified for stationary agricultural pump engines at present. Their use would require a verification procedure for each make/model, or, case-by-case source testing. Source testing and interpretation can cost \$30,000. • Diesel particulate filters (DPFs) may not work on engines operating at <60% load due to low exhaust temperatures. • Generally, engine warranties do not cover any problem that results from the use of an add-on control device, such as a DPF. • Expensive - adds 35-50% or more to the cost of initial purchase or repower. • Alternative Test Cycle: Not consistent with federal new off-road engine certification

Information Requested	Responses
Compliance alternative issues (continued).	<p>test requirements.</p> <ul style="list-style-type: none"> • Emissions Credit for Using California Diesel Fuel: Does not apply since current federal certification test fuel is not sufficiently different from CARB diesel.
Engine stock, purchasing, and timing issues.	<ul style="list-style-type: none"> • February-May is peak stationary diesel agricultural pump engine purchase and installation season. Farmers must have pump engines by spring planting time. • 90-day lead-time required for pump engine orders. • Non-complaint engines in stock or on order can not be returned to manufacturers or sold in California. Penalties are imposed for selling outside a distributor's sales territory. Comments regarding non-compliant engine stock: <ul style="list-style-type: none"> • Constitutes about one-third of one distributor's entire engine inventory valued at \$3 million to \$7 million. • Completion of dealer-customer contracts for large installations over a period of time have been held up due to uncertainty. • Sales have been suspended on hundreds of pump engines due to uncertainty. • Districts are unable to complete the processing of Carl Moyer Program incentive funding applications for agricultural engine repowers if contracts were not signed by January 1, 2005.