

## NSPS Applicability Worksheet Hot Mix Asphalt Plant Example

An existing facility, constructed in 1972, proposed the following changes:

1. In January, 1997, they will begin processing RAP.
2. In January, 1998, they will switch from natural gas to fuel oil. The facility was originally designed to burn both fuels.
3. In January, 1999, they will replace the 500 TPH dryer with a 550 TPH dryer. However, the aggregate feeder is rated only 500 TPH.
4. In January, 2000, they will replace the 80 MMBTU dryer burner with a 90 MMBTU burner.
5. In January, 2001, they will replace the six compartment aggregate storage bin, six aggregate feeders, and a cold feed conveyor.

Section A: Company/Facility Information							
Company Name:	John Doe's Asphalt						
Company Address:	111 E. Main, Anywhere City			State:	OK	ZIP:	73111
Facility Name:	Plant #43						
Physical Address:	111 E. Main, Anywhere City			State:	OK	ZIP:	73111
Contact Name:	John Doe			Title:	Manager		
Contact Phone:	405-111-1111	Fax:		Email:			
Permit Number	72-146-O		Major Source	<input checked="" type="checkbox"/>	Minor (Area) Source		
Facility Description:	Hot Mix Asphalt Plant			SIC Code:	2951		
Section B: Source Category Information							
<b>List all equipment at the facility, whether in an NSPS source category, and whether subject or exempt.</b>							
Equipment	Construction Or Modification Date	Source Category	Subject?	– or reason exempt			
Six compartment aggregate bin	5/1/1972	OOO, I	Const. Prior to 1973	& exempted by I			
6 aggregate feeders—500 TPH capacity	5/1/1972	OOO, I	Const. Prior to 1973	& exempted by I			
Cold feed conveyor	5/1/1972	OOO, I	Const. Prior to 1973	& exempted by I			
Dynamo 500 TPH Drum Mixer	5/1/1972	I	Const. Prior to 1973				
Elevated hot mix drag conveyor	5/1/1972	I	Const. Prior to 1973				
Hot Mix storage silo	5/1/1972	I	Const. Prior to 1973				
20,000 gallon asphalt cement tank w/hot oil heater	5/1/1972	Kb	Const. Prior to 1973				
Filter Baghouse	5/1/1972	I	Const. Prior to 1973				
12,000 gallon gasoline storage tank	5/1/1972	Kb	Const. Prior to 1973				

**Section C: Modification Information**

If you make certain changes (i.e., a modification) at a facility with equipment that is included in the definition of an “affected facility” under a NSPS, even though constructed prior to the applicability date of the NSPS, it could subject all or part of that equipment to NSPS. A modification means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility or which results in the emission of any air pollutant (to which a standard applies) into the atmosphere not previously emitted. The emission rate (expressed in lb/hr) may be calculated using emission factors, material balances, continuous monitoring data or performance tests. You cannot use permit limitations or consider pollution control equipment in the calculations (unless specifically recognized by the emission factors, e.g., AP-42 or a stack test). For each change, i.e., modification, to the facility being proposed you should evaluate whether an emissions increase has occurred and whether that results in a change in NSPS applicability to the equipment being replaced or changed, i.e., modified, as well as any existing equipment. Note that routine maintenance, repair and replacement of equipment components; an increase in the hours of operation; and use of an alternate fuel or raw material if the source was capable of using the alternative fuel or material prior to the date that the individual NSPS subpart became applicable is not considered a modification.

**List specific equipment at the facility, in an NSPS source category, which has been “changed,” i.e. modified.**

Equipment/Type of Change (Add/Replace/Modify/Fuel Change)	Modification Date	Source Cat.	Pollutant	Pre-modification			Post-modification			Emissions Change (lb/hr)
				Basis	Emission Factor	Emissions (lb/hr)	Basis	Emission Factor	Emissions (lb/hr)	
1. Mixer/Raw material change from aggregate to aggregate and/or RAP	1/1/1997	I	PM	AP42, 12/00 Table 11.1-3	0.033 lb/T*	16.5	NA	<0.033 lb/T*	<16.5	decrease
*No EF is available for RAP. However, it is expected to be less than that for aggregate since the aggregate is encapsulated in the RAP. In addition, the plant was originally designed to handle RAP, i.e., no physical change is required to accommodate using RAP.										
2. Mixer/fuel-change from natural gas to fuel oil.	1/1/1998	I	PM	AP42, 12/00 Table 11.1-3	0.033 lb/T*	16.5	AP42, 12/00 Table 11.1-3	0.033 lb/T*	16.5	No change
*Data indicate that fuel type, i.e., natural gas, propane, fuel oil, and waste oil, does not significantly affect PM emissions. In addition, the plant was originally designed to handle both fuels, i.e., no physical change is required to accommodate the fuel oil.										
3. Mixer/replace the 500 TPH mixer with a 550 TPH mixer.	1/1/1999	I	PM	AP42, 12/00 Table 11.1-3	0.033 lb/T	16.5	AP42, 12/00 Table 11.1-3	0.033 lb/T	16.5*	No change
*Hourly potential emissions after the change are based on the capacity of the aggregate feeder, which limits throughput to 500 TPH.										
4. Replace the 80 MMBTU dryer burner with a 90 MMBTU burner.	1/1/2000	I	PM	AP42, 12/00 Table 11.1-3	0.033 lb/T	16.5	AP42, 12/00 Table 11.1-3	0.033 lb/T	16.5*	No change
The burner has a higher capacity, but particulate emissions are based on the throughput, which is based on the capacity of the aggregate feeder, which limits throughput to 500 TPH.										
5. Replace the six-compartment aggregate storage bin, six aggregate feeders, and a cold feed conveyor.	1/1/2001	I	PM	AP42, 12/00 Table 11.1-3	0.033 lb/T	16.5	AP42, 12/00 Table 11.1-3	0.033 lb/T	18.15*	Increase
The capacity of the aggregate feeder, and associated equipment, was increased to 550 TPH.										
6.										

**Section D: Capital Expense Information**

A change to equipment at a facility that, by itself, results in an increase in production rate at an existing facility, and that can be accomplished without a capital expenditure, is not considered a modification. Capital Expenditure means an expenditure for a physical or operational change to an existing facility which exceeds the product of the applicable "annual asset guideline repair allowance percentage" (AAGRAP) specified in the latest edition of Internal Revenue Service (IRS) Publication 534 (table from Dec. '84 Revision attached) and the existing facility's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to an existing facility must not be reduced by any "excluded additions" as defined in IRS Publication 534, as would be done for tax purposes. For each piece of equipment identified in Section C where a net emissions increase has occurred, use the following table to determine if a capital expenditure has occurred. Costs should be shown as nominal dollars, i.e., the actual cost of the original facility and the actual current cost of the "change." The actual cost of the original facility should not be converted to current dollars.

**List specific equipment at the facility, in an NSPS source category, which has been "changed," i.e. modified.**

Equipment/Type of Change (Add/Replace/Modify/Fuel Change)	Modification Date	Source Category	Facility Cost Basis	AAGRAP	Capital Expense Limit \$	Change Cost	Capital Expense (Y/N)?
1. Replace the six-compartment aggregate storage bin, six aggregate feeders, and a cold feed conveyor.	1/1/2001	I	800,000*	3.0%	24,000	29,000	Y
*The facility cost basis includes only those "affected facilities" defined in Subpart I, e.g., the fabric filter baghouse cost was not included.							
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4.							
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10.							

**Section E: Reconstruction Expense Information**

Regardless of any change in the emission rate, if you spend more than 50% of the fixed capital costs required to construct an entirely new comparable facility and it is technologically and economically feasible for the facility to comply with the applicable standard, then your facility has been "reconstructed" and is subject to NSPS. Fixed Capital Cost means the capital needed to provide all the depreciable components. The costs of engineering, purchase and installation of major process equipment, contractor fees, instrumentation, auxiliary facilities, buildings and structures must also be included as capital costs. For each piece of equipment identified in Section C, use the following table to determine if a reconstruction has occurred.

**List specific equipment at the facility, in an NSPS source category, which has been "changed," i.e. modified.**

Equipment/Type of Change (Add/Replace/Modify/Fuel Change)	Existing & Proposed Control Equipment	Modification Date	Source Category	Useful Life	Facility Fixed Capital Cost	50% of the Facility Fixed Capital Cost	Change Cost	Recon- struction? (Y/N)
1. Mixer/replace the 500 TPH mixer with a 550 TPH mixer.	Baghouse/baghouse	1/1/1999	I	20 yrs	1,200,000	600,000	120,000	N
2. Replace the 80 MMBTU dryer burner with a 90 MMBTU burner.	Baghouse/baghouse	1/1/2000	I	20 yrs	1,260,000	630,000	80,000	N
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								

**Section F: Applicability Information**

For each “change,” i.e., modification, identified in Section D & E, you must determine which existing equipment at your facility now becomes subject to NSPS because the modification is the result of a capital expenditure or a reconstruction. This determination depends on the definition of the *affected facility* for a particular NSPS. You must review the particular NSPS to identify when the *affected facility* is defined as a *combination* or *group* of units, rather than individual units. Addition of new equipment or modification of existing equipment in a source category where the *affected facility* is defined as a *combination* or *group* of units makes all of those units now subject to the NSPS. You may use the attached list to help make this determination. However, you should refer to the NSPS for specific details for a particular source category.

**List all equipment at the facility, in the NSPS source category, for which there has been a modification or change in NSPS applicability.**

<b>Equipment/Type of Change (Add/Replace/Modify/Fuel Change)</b>	<b>Modification Date</b>	<b>Source Category</b>	<b>Subject? (Y/N)</b>	<b>NSPS A Notification Made? (Y/N &amp; Date)</b>	<b>NSPS A Performance Test Performed? (Y/N &amp; Date)</b>
1. Six compartment aggregate storage bin/replaced	1/1/2001	I	Y	Y—1/31/01	Y—6/30/2001
2. 6 aggregate feeders—500 TPH capacity/replaced	1/1/2001	I	Y	Y—1/31/01	Y—6/30/2001
3. Cold feed conveyor/replaced	1/1/2001	I	Y	Y—1/31/01	Y—6/30/2001
4. Dynamo 550 TPH Drum Mixer	NA	I	Y	Y—1/31/01	Y—6/30/2001
5. Elevated hot mix drag conveyor	NA	I	Y	Y—1/31/01	Y—6/30/2001
6. Hot Mix storage silo	NA	I	Y	Y—1/31/01	Y—6/30/2001
7.					
8.					
9.					
10.					

This documentation prepared by:

Printed Name: John Doe Signature: John Doe Date: 7/1/02

## Notes on Completing the Form

### **Section B: Source Category Information**

It may be convenient to group similar equipment, e.g., 4 conveyors constructed prior to 1983, or 3 tanks less than 10,800 gallons. Typical reasons for specifying that changes to certain equipment are exempt include: modification did not result in a capital expenditure; routine, repair and replacement of components; capacity, size, or production less than the NSPS criteria; fuel change (use of an alternative fuel or raw material that the source was capable of using prior to the applicability date of the NSPS); and addition of pollution control equipment (unless the existing pollution control device is removed or replaced with a unit that is less beneficial to the environment). Note that once an "affected facility" becomes subject to NSPS it is always subject to NSPS.

### **Section C: Modification Information**

Emissions increases are determined by comparing the potential emissions rate, in pounds per hour, prior to and after the physical or operational change, with the unit or facility operating at maximum capacity. An increase is usually determined by comparing the AP-42 emissions factor before and after the change. However, testing may also be done to develop the factors. Note that there are exceptions to modification standards for power facilities and clean coal technologies (See 40 CFR §60.14). Please identify, in column 5, the basis for the factor, e.g., "AP-42" or "stack test."

### **Section D: Capital Expense Information**

Note that the modification exemption for a change that can be made without a capital expenditure is only allowed when the change, "by itself," results only in an increase in production. For example, if a change results in an increase in production because of an associated increase in fuel consumption, the capital expenditure process cannot be used to justify an exemption. The "annual asset guideline repair allowance percentage" (AAGR), taken from the December 1984 edition of IRS Publication 534, is provided in a table attached to this document.

The capital expenditure basis, as well as the facility cost basis is the total depreciable investment (TDI) associated with construction of the affected facility/equipment. The TDI is the sum of the cost for equipment, direct and indirect installation costs, and the cost of site preparation, buildings, etc. The cost of land and working capital are not included in the basis since they are not depreciable assets under IRS rules. The cost basis should be adjusted to reflect capital improvements, casualty losses, and defunct equipment. Depreciation should not be considered.

### **Section E: Reconstruction Expense Information**

Reconstruction only applies to replacement of equipment. Construction of a new affected facility that will supplement, rather than replace an existing affected facility, is subject to a NSPS if constructed after the applicability date.

The reconstruction cost basis, as well as the cost basis for an entirely new comparable facility, is based on fixed capital costs. Fixed capital costs are the total depreciable investment (TDI) associated with construction of the affected facility/equipment. The TDI includes the cost of engineering, purchase and installation of major process components, contractor fees, instrumentation, auxiliary facilities, and building and structures. Note that these may include both internal (in-house), as well as external (contractor) costs. Costs associated with the purchase and installation of air pollution control equipment are only included in the fixed capital cost to the extent that the equipment is required as part of the manufacturing/operating process.

In order to justify that it is economically infeasible for a facility to comply with an applicable NSPS standard, as a result of a reconstruction, EPA has considered \$3,000 per ton to be reasonable. Costs should be based only on those components that make up the "affected facility."

### **Section F: Applicability Information**

You must review the particular NSPS to identify when the *affected facility* is defined as a *combination* or *group* of units, rather than individual units. You may use the attached list to help make this determination. Note that ***combination*** or ***group*** is bolded in the list. However, you should refer to the NSPS for specific details for a particular source category.

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If you determine that a change you made at your facility does not meet the modification or reconstruction definitions, you should keep the information on file to demonstrate how the determination was made. If it is subsequently found that an error was made and the change was an NSPS modification, the notifications and performance test required under NSPS Subpart A must be made. In addition, the facility must comply with all provisions of the individual subpart. You may also be subject to enforcement action. However, it is to your benefit to self-report such a violation (see OAC 252:4-9-5). Note that an enforcement action does not automatically mean that you will be faced with monetary penalties. If you are unsure as to NSPS applicability you should request an Applicability Determination (AD). An AD is used to determine whether a particular source or operation is subject to the requirements of a rule. The AD fee is \$250, and generally must contain the same information as a regular permit application. In addition, you may contact our Customer Service Division, at 702-9100 in the OKC Metro area, or toll free at 1-800-869-1400, or for specific assistance contact the Air Quality Division at (405) 702-4100.