Such factors include: hydrology/ geology; the types of chemical additives and lubricating fluids used; the procedure for waste management; the nature and size of the RQ release; the amount of contamination remaining after the RQ release; the size of the operation; and type, duration, and intensity of precipitation events. These and other factors will interact to influence the quantity and quality of storm water runoff. In addition, sources of pollutants other than storm water, such as illicit connections,⁷⁰ spills, and other improperly dumped materials, may increase the pollutant loadings discharged into waters of the United States.

Based on information submitted with the group applications and other

documents, EPA has identified some storm water pollutants and sources typically associated with oil and gas facilities in Table I–1. Due to distinct industrial activities and materials used at facilities, however, sources and associated pollutants will vary from site to site. The pollutants listed in Table I– 1 are not meant to be a comprehensive listing of all potential storm water pollutants at oil and gas facilities.

TABLE I-1.—ACTIVITIES, POLLUTANT	SOURCES, AND POLLUTANTS
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Activity	Pollutant source	Pollutant					
Construction of: —Access Roads —Drill Pads —Reserve Pits —Personnel Quarters	Soil/dirt, leaking equipment and vehicles	TSS, TDS, oil and grease.					
—Surface Impound- ments							
Well Drilling	Drilling fluid, ⁱ lubricants, mud, cuttings, produced water	TSS, TDS, oil and grease, COD, chlorides, barium, naphthalene, phenanthrene, benzene, lead, arsenic, fluoride.					
Well Completion/Stimulation	Fluids (used to control pressure in well), cement, resid- ual oil, acids, surfactants, solvents, produced water, sand.	TSS, TDS, oil and grease, COD, pH, acetone, toluene, ethanol xylenes.					
Production	Produced water, oil, waste sludge, tank bottoms, acids, oily debris, emulsions.	Chlorides, TDS, oil and grease, TSS, pH, benzene, phenanthrene, barium, arsenic, lead, antimony.					
Equipment Cleaning and Repairing.	Cleaning solvents, lubricants, chemical additives	TSS, TDS, oil and grease, pH.					
Site Closures	Residual muds, oily debris	TSS, TDS, oil and grease.					

ⁱThe potential contaminants to be found in drilling fluid varies from site to site, depending on the components of the fluid and any pollutants added due to use of the fluid. Storm water discharges that come into contact with used drilling fluids may include the following pollutants, among others: toluene, ethyl benzene, phenol, benzene, and phenanthrene. Used drilling fluids may also contain inorganic pollutants from additives or downhole exposure, such as arsenic, chromium, lead, aluminum, sulfur, and various sulfates.

Based on the similarities of the facilities included in this sector in terms of industrial activities and significant materials, EPA believes it is appropriate to discuss the potential pollutants at oil and gas extraction facilities as a whole and not subdivide this sector. Therefore, Table I–2 lists data for selected parameters from facilities in the oil and gas extraction sector. These data include the eight pollutants that all facilities were required to monitor under Form 2F.

TABLE I-2.—STATISTICS FOR SELECTED POLLUTANTS REPORTED BY OIL AND GAS EXTRACTION FACILITIES SUBMITTING
PART II SAMPLING DATA ⁱ (MG/L)

Pollutant	No. of	facilities	No. of	f samples	Me	an	Minir	num	Maxi	mum	Median		95th percentile		99th Percentile	
Sample type	Grab	Comp ⁱⁱ	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp	Grab	Comp
BOD₅ COD	34 35	32 32	39 40	37 35	13.9 138.3	10.7 112.2	0.0 14.0	0.0 0.0	116.0 1050.0	90.0 450.0	10.4 78.5	7.0 78.0	32.9 401.9	26.8 330.4	52.9 755.3	44.8 601.4
Nitrate + Nitrite Nitrogen .	34	31	39	35	0.47	0.54	0.00	0.00	5.50	9.90	0.15	0.09	2.06	2.10	6.17	7.15
Total Kjeldahl Nitrogen Oil & Grease	35 35	32 N/A	40 40	34 N/A	1.31 9.4	1.52 N/A	0.00 0.0	0.00 N/A	9.00 189.0	14.50 N/A	0.69 3.0	0.83 N/A	4.68 24.7	5.49 N/A	9.75 56.0	12.56 N/A
рН	34	N/A	40	N/A	N/A	N/A	5.9	N/A	11.3	N/A	7.2	N/A	9.2	N/A	10.0	N/A
Total Phosphorus		32	40	37	16.17	3.98	0.00	0.00	149.72	50.74	0.20	0.16	68.03	20.01	461.08	102.13
Total Suspended Solids	35	32	41	34	332	369	3	1	1657	4186	70	40	1820	1831	6110	7869

ⁱ Applications that did not report the units of measurement for the reported values of pollutants were not included in these statistics. Values reported as non-detect or below detection limit were assumed to be 0. ⁱⁱ Composite samples.

3. Options for Controlling Pollutants

In evaluating options for controlling pollutants in storm water discharges, EPA must achieve compliance with the technology-based standards of the Clean Water Act [Best Available Technology (BAT) and Best Conventional Technology (BCT)]. The Agency does not believe it is necessary to establish specific numeric effluent limitations or a specific design or performance standard in this section for storm water discharges associated with industrial activity from oil and gas facilities to meet the BAT/BCT standards of the Clean Water Act. Rather than setting limits, this section establishes requirements for the development and implementation of a site-specific storm water pollution prevention plan consisting of a set of BMPs that are sufficiently flexible to address different sources of pollutants at different sites.

⁷⁰ Illicit connections are contributions of unpermitted non-storm water discharges to storm sewers from any of a number of sources including

sanitary sewers, industrial facilities, commercial establishments, or residential dwellings. The probability of illicit connections at mineral mining

and processing facilities is low yet it still may be applicable at some operations.