Statement of Basis

FACILITY:	**Marathon Oil Company - Maverick Springs**
PERMIT NO:	**WY-0000779**
RESPONSIBLE OFFICIAL:	R. J. Whisonant
ADDRESS:	1501 Stampede Avenue Cody WY 82414
PHONE:	(307) 527-2127 (Marvin Blakesley)
PERMIT TYPE:	Minor Industrial (Renewal)

Modifications occurring in the permit: The following modifications are being made to the permit:

1. page 6, Part 1.3.2. Footnote c/. The word "quarterly" was corrected to read "semi-annual" to be consistent with the sampling frequency outlined in the table.

Background Information

This proposed permit authorizes the discharge of treated wastewater from outfall 001 (latitude 43° 29' 02" N, longitude 108° 58' 54" W) at the Marathon Oil Company - Maverick Springs oil production facility located in SE 1/4 of the NW 1/4 of Section 22, Township 6 North, Range 2 West in Fremont County. The facility is within the exterior boundaries of the Wind River Indian Reservation. This permit is a renewal of NPDES Permit Number WY-0000779, which expired on March 31, 2002, and was administratively extended.

Produced oil, water, and gas are separated in tanks by gravity, heat and emulsion breaking chemicals. The facility is currently or intends to use cross-linked polymer treatments to enhance recovery. A flow diagram is attached as Attachment A. Water is discharged through settling ponds where the remaining oil is removed by floatation and skimming prior to discharge to a tributary to Five Mile Creek.

Receiving Waters

The discharge from this facility will enter a tributary to Five Mile Creek. The discharge provides wildlife and stock watering opportunities. In addition, aquatic communities have developed in this ephemeral drainage, which are dependent upon the flow of this produced water.

The Northern Arapaho and the Eastern Shoshone Tribes have not adopted and EPA has not approved Tribal water quality standards for waters within the Wind River Reservation. Therefore, there are no water quality criteria to base development of water quality based limits. Permit Condition 4.15.1 includes a reopener provision under which the permit may be reopened and modified, as appropriate, if Tribal Water Quality Standards are adopted and approved by EPA. There are, however, applicable federal effluent limitation guidelines as discussed below.

Monitoring Data

Monitoring data from the permit application and DMRs for the period December 2001 to December 2004 is presented in Attachment B.

Effluent Limitations

These permit activities are covered under the effluent guideline for onshore oil and gas operations, subject to the Oil and Gas Extraction Point Source Category (40 CFR Part 435). The Oil and Gas Extraction Point Source Category Subpart C - Onshore Subcategory establishes the effluent limitation for produced water from Onshore operations as "No Discharge" [40 CFR 435.32 (a)]. However, Subpart E - Agricultural and Wildlife Water Use Subcategory allows the discharge of produced water from facilities west of the 98th meridian for use in agricultural and wildlife propagation. The effluent guideline further requires " . . . that the produced water is of good enough quality to be used for wildlife or livestock watering or other agricultural uses and that the produced water is actually put to such use during periods of discharge."

The following effluent limitations will be required for this facility for outfall 001:

Effluent Characteristic	Effluent Limitation		
	30-Day Average a/	7-Day Average a/	Daily Maximum a/
Specific Conductance, µmhos/cm			7500
Total Dissolved Solids, mg/L			5000
Chlorides, mg/L			2000
Sulfates, mg/L			3000
Total Radium 226, pCi/l			60
Total Chromium, mg/L			3.0
Acrylamide monomer, mg/L			1.0
Oil and Grease, mg/L			10 b/
The pH of the discharge shall not be less than 6.5 nor greater than 9.0 at any time.			
The discharge shall be free from substances in amounts which would cause a visible sheen or visible deposits in the receiving water or adjoining shoreline.			
No chemicals which contain toxic substances listed pursuant to Section 307 (a) of the Act shall be added to the discharge at levels which exceed the notification criteria specified under Conditions 3.9 and 3.10 of this permit.			
There shall be no addition of hexavalent chromium.			
There shall be no discharge of floating solids or visible foam in other than trace amounts.			
The discharge shall not present a hazard to humans, wildlife, or livestock.			

a/ See Definitions, Part 1.1., for definition of terms.

b/ A semi-annual visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

These limits are based on EPA's Best Professional Judgment to implement the requirements of the Oil and Gas Extraction Point Source Category Subpart C - Onshore Subcategory and Subpart E - Agricultural and Wildlife Water Use Subcategory [40 CFR 435] and consideration of: 1) current uses of the receiving waters; 2) the current desires of the Tribes to have similar requirements on the Wind River Reservation and in the State of Wyoming; 3) State of Wyoming Chapter 2.H - Surface Discharge of Water Associated with the Production of Oil and Gas requirements; and 4) Water quality suitable for cattle watering as discussed in the Colorado State University Cooperative Extension's Livestock Series, issue no 4.908.

Further, monitoring and limits were included for acrylamide monomer and total chromium as the facility is currently or intends to use cross- linked polymer treatments to enhance recovery. All limits were contained in the previous permit except for specific conductance. This new limit will be effective immediately. This limit was included/added to protect the agricultural and wildlife water of Subpart E - Agricultural and Wildlife Water Use Subcategory [40 CFR 435].

The upper pH limit for this permit was increased from 8.5 to 9.0. This decision was based on the presence of naturally high pH waters in the area. WREQC concurred with this change.

While EPA's National Water Quality Criteria are not directly applicable to the receiving waters, it should be noted that the quality of the produced water discharges may not meet these National Water Quality Criteria for aquatic life protection. However, the water should be of necessary quality for use by livestock and wildlife. The WREQC and Joint Business Council (JBC) are moving forward to develop and implement site-specific standards. EPA is including a permit re-opener clause and additional effluent monitoring to screen for hazardous/toxic constituents to develop data for future water quality based limits (see discussion under the "Hazard Screening Requirements").

Self-Monitoring Requirements

The following self-monitoring requirements are included in this permit for outfall 001:

Effluent Characteristic	Frequency	Sample Type a/
Total Flow, mgd b/	Monthly	Total
Specific Conductance, µmhos/cm	Once per six months d/	Grab
Total Dissolved Solids, mg/L	Once per six months d/	Grab
Chlorides, mg/L	Once per six months d/	Grab
pH, standard units	Once per six months d/	Grab
Oil and grease, visual c/	Once per six months d/	Visual c/
Sulfates, mg/L	Once per six months d/	Grab
Chromium (total), mg/L	Once per six months d/	Grab
Sulfide, mg/L	Once per six months d/	Grab
Benzene, mg/L	Once per six months d/	Grab
Ethylbenzene, mg/L	Once per six months d/	Grab
Toluene, mg/L	Once per six months d/	Grab
Xylene, mg/L	Once per six months d/	Grab
Acrylamide monomer, (total), mg/L	Once per six months d/	Grab
Total Radium 226, pCi/l	Once per six months d/	Grab

a/ See Definitions, Part 1.1., for definition of terms.

b/ Flow measurements of effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained. The average flow rate (in million gallons per day) during the reporting period and the maximum flow rate observed (in mgd) shall be reported.

c/ A semi-annual visual observation is required. If a visible sheen is detected, a grab sample shall be taken and analyzed immediately. The concentration of oil and grease shall not exceed 10 mg/L in any sample.

d/ Sampling events shall occur at an interval of not less than three months and not more than six months.

Hazard Screening Requirements

EPA will include in the permit a re-opener clause and additional effluent monitoring to screen for hazardous/toxic constituents and to develop data for future water quality based limits, protective of these unique aquatic communities. Within 30 days of the effective date of this permit, a sample will be collected from outfall 001 and analyzed for the constituents specified below, at the required detection limits.

Within 90 days of the effective date of this permit, a summary report on the produced water will be submitted to the US EPA and the Wind River Environmental Quality Commission. This summary report will include the results and detection limits for each of the constituents. Based upon the results of this screening, this permit may be reopened and effluent limits and monitoring requirements established for constituents that may present a hazard.

Parameter	Required Detection Limits and Required Units
Arsenic, Total	1 µg/L
Aluminum, Total Recoverable	50 µg/L
Ammonia, mg/L	50 µg/L
Cadmium, Total Recoverable	5 µg/L
Copper, Total Recoverable	5 µg/L
Iron, Total Recoverable	50 µg/L
Lead, Total Recoverable	2 µg/L
Manganese, Total Recoverable	50 µg/L
Mercury, Total Recoverable	0.001 µg/L
Nickel, Total Recoverable	5 µg/L
Zinc, Total Recoverable	5 µg/L
Hardness, Total	10 mg/L as CaCO3
Uranium, Total Recoverable	5 µg/L
Gross Alpha and Beta Radiation	0.2 pCi/L
Dissolved Oxygen	1 mg/L
Selenium	0.05 mg/L
Boron	1 mg/L
Chemical Oxygen Demand	3 mg/L

Reporting Requirements

The facility is required to report effluent data semi-annually on a discharge monitoring report. If no discharge occurred during that period, the report is to be marked "no discharge".

Re-Opener Conditions

EPA will include in the permit re-opener clauses for Water Quality Standards adoption and hazard screening. Permit Condition 4.15.1 includes a re-opener provision under which the permit may be reopened and modified, as appropriate, if Tribal Water Quality Standards are adopted and approved by EPA. Permit Condition 4.16 includes a re-opener provision under which the permit may be reopened and modified, as appropriate, if constituents are present that constitute a hazard.

Permit Drafted by:
Curt McCormick
Colleen Gillespie
U.S. EPA
June 26, 2007

Permit Reviewed by:
Robert Shankland, SEE, NOWCC, Wastewater Unit

This permit was published for public notice on August 1, 2007. Comments received and addressed below: Colleen Gillespie, U.S. EPA Wastewater Unit, September 24, 2007.

This permit was modified to correct a minor inconsistency in sampling frequency. Colleen Gillespie, U.S. EPA Wastewater Unit, November 13, 2007.

Response to comments, Marathon Oil Company (WY-0000779)

Comments were received from the Wyoming Department of Environmental Quality. A summary of comments and responses to those comments are given below.

1. **It does not appear that the permit establishes effluent limits that are protective of aquatic life.**
   As noted in the statement of bases, the Northern Arapaho and the Eastern Shoshone Tribes have not adopted and EPA has not approved Tribal water quality standards for waters within the Wind River Reservation. Therefore, there are no water quality criteria to base development of water quality based limits, including protection of aquatic life. The Tribes are currently working to finalize water quality standards for tribal waters. Upon approval, EPA will ensure that permits reflect approved water quality standards.
2. **The WDEQ requested that it be sent copies of DMRs for this facility.**
   Data for these permittees is entered into PCS and will be entered into ICIS-NPDES. WDEQ may review data by accessing the database. Alternatively, WDEQ can request copies from EPA Region 8.