

**NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM**  
**PROPOSED PERMIT FACT SHEET**  
**March 3, 2017**

Permittee Name: McKinley Mine

Mailing Address: 116 Inverness Drive East, Suite 207  
Englewood, CO 80112

Facility Location: McKinley Mine  
24 miles NW of Gallup on State Highway 264  
Gallup, NM 87305

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NPDES Permit No.: NN0029386

**I. STATUS OF PERMIT**

Chevron Mining Inc., (the “permittee”) has applied for the renewal of their National Pollutant Discharge Elimination System (NPDES) permit to authorize the discharge of treated effluent from the McKinley Mine to Coal Mine Wash, Defiance Draw, and Tse Bonita Wash, all three of which are tributary to the Rio Puerco located on Tribal, private, and public lands within the Navajo Nation and near the Arizona border in New Mexico. While New Mexico lands normally fall under the jurisdiction of EPA Region VI, all permits on Navajo Nation lands are overseen by EPA Region IX which has assumed lead authority for this permit and all discharges subject to its conditions. An application was submitted on May 29, 2014 and supplemental materials submitted by the discharger on July 16, 2015. EPA Region IX has developed this permit and fact sheet pursuant to Section 402 of the Clean Water Act, which requires point source dischargers to control the amount of pollutants that are discharged to waters of the United States through obtaining a NPDES permit.

The permittee is currently discharging under NPDES permit NN0029386 issued on October 22, 2009. Pursuant to 40 CFR 122.21, the terms of the existing permit are administratively extended until the issuance of a new permit.

This permittee has been classified as a minor discharger.

**II. GENERAL DESCRIPTION OF FACILITY**

Chevron Mining, Inc. (CMI), formerly The Pittsburg & Midway Coal Mining Company (P&M), operated the reclamation project at the former McKinley Mine, which is located approximately 24 miles northwest of Gallup, NM adjacent to New Mexico State Highway #264 on Indian, public, and private lands. Normally Indian lands in this area are regulated by EPA Region IX and public and private lands are regulated by EPA Region VI. However, in line with agreements reached during the issuance of the 2009 permit for this facility, EPA Region IX is

taking the regulatory lead for McKinley Mine. The facility operated as a coal mine between July 1961 and December 2009 (operations on Navajo Nation lands began in June 1972) and is now a post-operative coal mine engaged in remediation activities. In June 2013, responsibility for managing the reclamation operations, including control of wastewater, transitioned from CMI to Chevron's Environmental Management Company (EMC).

The Office of Surface Mining Reclamation and Enforcement (OSMRE) required P&M, and later CMI, to control all surface runoff water with the potential of being contaminated from contact with mining- and mining-related activities. P&M utilized sedimentation ponds to comply with this requirement. The sediment ponds were designed and maintained to treat storm water runoff from a 10-year, 24-hour precipitation event. Weather stations operated by the mine in the vicinity of the facilities areas document precipitation events and will be used to determine when design storm event criteria are exceeded.

The original NPDES permit, issued to CMI in October 2009, contained 56 discharge outfalls which primarily emptied into sediment impoundments. Since then, several permit modifications have been made to include and remove outfalls from the list of authorized discharge points as the ongoing mine reclamation alters the site topology and hydrography – for the current status of outfalls, see “Description of Discharge”, below.

### **III. DESCRIPTION OF RECEIVING WATER**

Discharges from the McKinley mine are to receiving waters located on the Navajo Nation Indian reservation and on private and public lands located in the State of New Mexico. Receiving waters are to tributaries of the Rio Puerco which include Coal Mine Wash, Defiance Draw, and Tse Bonita Wash.

The receiving waters within the Navajo Nation have the following designated uses:

Secondary Human Contact (ScHC), Fish Consumption (FC), Aquatic and Wildlife Habitat (A&WHbt), and Livestock and Wildlife Watering (L&W).

Receiving waters within the State of New Mexico have the following designated uses:

livestock watering, wildlife habitat, limited aquatic life and secondary contact.

### **IV. DESCRIPTION OF DISCHARGE**

McKinley Mine is a surface coal mine undergoing reclamation in the arid southwest. The discharge includes stormwater runoff from reclamation areas as well as roads and ancillary activities. The discharge meets the definition of “alkaline mine drainage”, defined at 40 CFR Part 434 as having a pH > 6.0 and total iron < 10 mg/L prior to treatment.

CMI asserted in a supplementary permit application (July 16, 2015) that only Outfall 003 remained subject to the requirements for Coal Preparation and Associated Areas, and that all other outfalls were subject to Western Alkaline Mine Reclamation Area standards. Since that time, CMI has further modified their permit application to state that no further mining, re-mining, or coal preparation activities are taking place and all areas of the mine site are in remediation. After reviewing more recent inspection reports from both the Navajo Nation and the State of New Mexico, EPA has determined that activities at other outfalls which previously were

subject to the “Alkaline Mine Drainage” and “Coal Preparation and Associated Areas” categories are, as of the date of this permit issuance, not being operated in a manner subject to those categories. Therefore, for all outfalls covered by this permit (003 thru 076, excluding the now non-existent outfalls 007, 008, 025, 034, 043, 073, and 074), the watersheds are under reclamation and fall under the NPDES Western Alkaline Coal Mining (reclamation area) discharge standards. Western Alkaline Coal Mining reclamation provisions focus on the implementation of a Sediment Control Plan built around attaining sediment discharge levels which do not exceed pre-mining conditions, with the primary attainment mechanism being watershed modeling leading to identification and compliance with Best Management Practices (BMPs). All discharges must also comply with the applicable water quality standards, whether discharging to Navajo Nation or New Mexico lands.

Additionally, the discharger is subject to Surface Coal Mine Reclamation Act (SCMRA) permits which incorporate plans for surface grading and hydrologic reclamation; acceptable control of sediment from the covered watersheds is defined as sediment loads not exceeding unaffected background conditions. The portion of the facility on Navajo Nation lands is covered by the Office of Surface Mining Reclamation and Enforcement (OSMRE) SCMRA permit NM-0001J, and the portion of the facility on non-Tribal lands is covered by SCMRA permit NM-2011-02 issued by the New Mexico Mining and Materials Division (NM-MMD).

Reclaimed lands at McKinley Mine fall into three regulatory time periods including Pre-Law Lands, Initial Program Lands, and Permanent Program Lands. Reclaimed lands at the mine are covered under 40 CFR Part 434 Subpart H-Western Alkaline Coal Mining. CMI has conducted surface water hydrologic modeling and post-mining topographic and hydrologic reconstruction design work to enable construction of reclaimed lands that will achieve an acceptable level of stability.

Stormwater runoff modeling programs including RUSLE, SEDCAD and Natural Regrade with Geofluv have been used to develop post-mining topography and hydrologic control structures for reclaimed areas. The use of these programs has been incorporated and developed by CMI over time as mining and reclamation has progressed. Initial program land designs relied on RUSLE and SEDCAD, while later designs incorporate geofluvial modeling capabilities. The goal of these efforts is stated to be creation of a stable landscape where soil detachment averages less than 5 tons per acre per year and drainages are reconstructed that will effectively pass concentrated stormwater runoff through reclaimed lands from various precipitation events, as specified by applicable mining and reclamation rules and regulations.

The mine has used a variety of methods and structures to route stormwater runoff onto and through reclaimed lands. These structures and measures include channels designed to pass stormwater runoff from specified precipitation events (unlined, vegetation lined and rip rap lined), loose rock check dams, small depressions, and gradient terraces with rip rap lined drains. The design and construction of these structures has evolved in response to mine site specific conditions, and advances in technology and engineering.

Currently, there are 67 outfall points for active reclamation areas, numbered 003 thru 076 (with the exceptions of 007, 008, 025, 034, 043, 073 and 074). Of these outfalls, 39 are spillways of impoundments and nine are open drainage channels. The mine has also participated in modeling stormwater runoff flows from reclaimed and undisturbed lands from watersheds of

various sizes. These studies have used design methods and computer programs such as RUSLE, SEDCAD, and AutoCAD. These models demonstrate that sediment detachment and transport from reclaimed lands is less than that from undisturbed lands with similar sized watersheds. The effectiveness of design processes used at the mine is documented by the various stormwater runoff monitoring programs that have been conducted over the years on Initial Program Lands and Permanent Program Lands at the mine. These studies have documented sediment contributions to stormwater runoff from lands undisturbed by mining and reclaimed lands. These studies have been conducted on small, medium, and large sized watersheds designed to allow direct comparisons between reclaimed and undisturbed land effluents. These monitoring programs have shown that stormwater runoff from reclaimed lands entrains lower suspended and settleable solids than that entrained in runoff from undisturbed lands.

The studies and monitoring programs that have been used to evaluate sediment contributions to stormwater runoff have been developed in cooperation with the OSMRE and Navajo Nation, with the results being submitted in reports to these agencies for review and approval.

#### A. Application Discharge Data

As part of the application for permit renewal, the permittee provided data from an analysis of the facility's stormwater discharge, shown in Table 1. Pollutants believed to be absent or never detected in the effluent are not included. While not all parameters were monitored at all outfalls, at times due to lack of flow, the limited data submitted with the application do not consistently meet existing permit effluent limits (listed in Table 2). Several of the parameters that were reported in the application are not limited in the 2009 permit (including residual alpha emitters, radium, aluminum, boron, cobalt, copper, nickel, selenium, zinc, and cyanide).

Table 1. Application Discharge Data.

Parameter	Units	Discharge Data <sup>(1)</sup> - Outfall 003		Discharge Data <sup>(1)</sup> - Outfall 004		Discharge Data <sup>(1)</sup> - Outfall 005	
		Maximum Daily Discharge	Long-term Average Discharge	Maximum Daily Discharge	Long-term Average Discharge	Maximum Daily Discharge	Long-term Average Discharge
Flow	MGD	0.504	-	0.0288	-	<b>NO DATA COLLECTED</b>	
pH	Standard Units	7.1-8.0 (min-max)		8.0-8.1 (min-max)			
Total Suspended Solids (TSS)	mg/L	28	16.8	Believed Present but no value reported		<b>NO DATA COLLECTED</b>	
Iron (Total)	mg/L	2.8	1.28	Believed Present but no value reported			
Manganese (Total)	mg/L	0.0537	0.04465	Believed Present but no value reported			
Oil & Grease	mg/L	1.7	1.67	Believed Present but no value reported			
Alpha Radiation	pCi/L	4.85	-	4.74	-		

Parameter	Units	Discharge Data <sup>(1)</sup> - Outfall 003		Discharge Data <sup>(1)</sup> - Outfall 004		Discharge Data <sup>(1)</sup> - Outfall 005	
		Maximum Daily Discharge	Long-term Average Discharge	Maximum Daily Discharge	Long-term Average Discharge	Maximum Daily Discharge	Long-term Average Discharge
Radium 226	pCi/L	0.771	-	1.84	-		
Aluminum (total)	mg/L	0.129	-	<0.0828	-		
Boron (total)	mg/L	0.0456	-	0.0485	-		
Cobalt (total)	mg/L	0.0012	-	<0.0013	-		
Copper (total)	mg/L	0.0039	-	0.0049	-		
Nickel (total)	mg/L	0.0018	-	0.0022	-		
Selenium (total)	mg/L	0.0077	-	0.00076	-		
Zinc (total)	mg/L	0.0074	-	-	-		
Cyanide (total)	mg/L	0.058	-	-	-		

<sup>(1)</sup> Based on permittee's NPDES renewal application and supplemental data.

### B. Recent Discharge Monitoring Report (DMR) Data (2010-2016)

Table 2 provides a summary of effluent limitations and monitoring data based on the facility's most recent 6 years of DMRs (2010 to 2016). The data show infrequent but repeated elevated levels of Total Suspended Solids, Iron and pH during the peak rain season of August to September. Exceedances are discussed further in Part VI.B.4.

Table 2. Discharge Monitoring Report Data for years 2010-2016.

Parameter	Units	Current Permit Effluent Limitations			Discharge Monitoring Data			Current Monitoring Requirements	
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly	Highest Average Weekly	Highest Maximum Daily	Monitoring Frequency	Sample Type
Flow Rate	MGD	Monitoring Only	--	Monitoring Only		--		Continuous	Calculated
Total Suspended Solids	mg/L	35		70	186.2		730	Once/ Day	Discrete
Oil and Grease	mg/L	15					<5	Once/ Day	Discrete
Iron, Total	mg/L	3.5		7.0	21.2		66.3	Once/ Day	Discrete
pH	Stand ard Units	Between 6.5 SU and 9.0 SU at all times			6.65 – 9.8 (min-max)			Once/ Day	Discrete

## V. SIGNIFICANT CHANGES TO PREVIOUS PERMIT

Permit Condition	Previous Permit (2009 – 2014)	Re-issued permit (2016 – 2021)	Reason for change
Alkaline Mine Drainage outfalls	5 outfalls categorized	0 outfalls categorized	Cessation of mining and transfer of outfalls to either Western Alkaline Reclamation status or outfall elimination.
Coal Preparation and Associated Area outfalls	3 outfalls categorized	0 outfalls categorized	Cessation of mining and transfer of outfalls to different status.
Navajo Nation and New Mexico narrative Water Quality Standards	Incorporated into general discharge specifications but not clearly stated	All WQS requirements incorporated by reference and specific requirements of interest listed	Clarification of all WQ standards which are applicable in different discharge areas, all of which must be met within those areas.
Total Dissolved Solids (TDS) monitoring	Not required	Added as a monitoring requirement	TDS data are necessary to determine whether Colorado River Salinity Forum provisions are met
Hardness monitoring	Not required	Added as a monitoring requirement	Hardness data are necessary to determine compliance with NN and NM metals standards
Cyanide permit limit	Not present	Incorporated into permit limits	Reasonable Potential found for exceedance of Cyanide standard, hence limit required.
Electronic Reporting requirements	Not present	Incorporated into monitoring requirements	A national E-reporting rule has been issued between the previous permit and the current.
Standard Permit Conditions	Some standard conditions incorporated into the body of the permit	All standard conditions stated in a single section of the permit (Attachment A)	Clarity of requirements
Definitions of common terms	Not included	Included as Attachment B	Clarity of requirements

## VI. DETERMINATION OF NUMERICAL EFFLUENT LIMITATIONS

EPA has developed effluent limitations and monitoring requirements in the permit based on an evaluation of the technology used to treat the pollutant (e.g., “technology-based effluent limits”) and the water quality standards applicable to the receiving water (e.g., “water quality-based effluent limits”). EPA has established the most stringent of applicable technology-based or water quality-based standards in the proposed permit, as described below.

### A. Applicable Technology-Based Effluent Limitations

#### *Effluent Limitations Guidelines (ELGs)*

EPA has established national standards based on the performance of treatment and control technologies for wastewater discharges to surface waters for certain industrial categories. Effluent limitations guidelines represent the greatest pollutant reductions that are economically achievable for an industry, and are based on Best Practicable Control Technology (BPT), Best

Conventional Pollutant Control Technology (BCT), and Best Available Technology Economically Achievable (BAT). (Sections 304(b)(1), 304(b)(4), and 304(b)(2) of the CWA respectively).

McKinley Mine is a surface coal mine undergoing reclamation in the arid southwest. The discharge includes stormwater runoff from “Western Alkaline Coal Mining” reclamation areas, subject to the Effluent Limitation Guidelines (ELGs) as specified in 40 CFR §434.80-81. This applies for all outfalls presently covered by this permit: 003 thru 076, excluding 007, 008, 025, 034, 043, 073, and 074. The discharge meets the definition of “alkaline mine drainage”, defined at 40 CFR Part 434.11(c) as having before treatment a pH greater than 6.0 and dissolved iron less than 10 mg/L (excluding rare excursions).

In accordance with the applicable ELGs, technology-based effluent limitations are proposed for the following pollutants based on nationally promulgated effluent limitation guidelines for Western Alkaline Coal Mining (40 CFR part 434, subpart H). These effluent ELGs represent the degree of effluent reduction attainable by the application of the best practicable control technology currently available (BPT) and best conventional pollutant control technology (BCT).

The ELG for Western Alkaline Coal Mining, applicable to reclamation areas, specifies the following requirements:

(a) The operator must submit a site-specific Sediment Control Plan to the permitting authority that is designed to prevent an increase in the average annual sediment yield from pre-mined, undisturbed conditions. The Sediment Control Plan must be approved by the permitting authority and be incorporated into the permit as an effluent limitation. The Sediment Control Plan must identify best management practices (BMPs) and also must describe design specifications, construction specifications, maintenance schedules, criteria for inspection, as well as expected performance and longevity of the best management practices.

(b) Using watershed models, the operator must demonstrate that implementation of the Sediment Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions. The operator must use the same watershed model that was, or will be, used to acquire the SMCRA permit.

(c) The operator must design, implement, and maintain BMPs in the manner specified in the Sediment Control Plan.

In accordance with the requirements established in Subpart H; the operator has:

- 1) submitted a site-specific Sediment Control Plan to EPA incorporating the minimum requirements of 40 CFR Part 434.82,
- 2) demonstrated that implementation of the Sediment Control Plan will result in average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions.

The operator submitted materials to OSMRE in a letter and attachments dated February 25, 2004. EPA reviewed these materials as part of the OSMRE review, and EPA concluded they are consistent with the requirements of the Sediment Control Plan requirements of 40 CFR Part

434.83. These materials are part of the Administrative Record for the proposed permit and are available for public review.

As existing outfalls defined in the previous permit as alkaline mine drainage were reclaimed, the Sediment Control Plan was updated to incorporate additional outfalls. A revised Plan must be submitted to EPA and approved by EPA before it becomes effective. The revised plan must also be reviewed by OSMRE prior to EPA approving the revisions. Revisions to the Sediment Control Plan must meet all requirements contained at 40 CFR Part 434.82, and 100% of the drainage areas to an outfall that has been disturbed by mining must meet the definition of Subpart H to be considered for coverage under Subpart H. EPA's approval of an updated Sediment Control Plan and reclassification of an existing outfall from alkaline mine drainage to Subpart H requirements will be considered a minor modification to this permit.

Such a modification was approved on August 26, 2013, transferring all remaining outfalls from the "Alkaline Mine Drainage" category and specifying 3 outfalls subject to "Coal Preparation and Associated Areas" (outfalls 003, 004, and 005), with the balance (006 and 009 thru 0074) subject to the requirements for "Western Alkaline Reclamation Areas".

Thereafter, as part of the revised permit application package submitted July 19, 2015, and then revised again in July 2016, outfalls 003, 004, and 005 were also transferred to the status of "Western Alkaline Reclamation Areas".

Therefore, EPA proposes to re-approve the Sediment Control Plan consistent with the requirements of Subpart H. Additionally, in accordance with Subpart H, the proposed permit requires that the approved Sediment Control Plan be incorporated into the permit as an effluent limit, and requires that the permittee design, implement, and maintain the BMPs in the manner specified in the Sediment Control Plan.

EPA Region IX and the Office of Surface Mining Reclamation and Enforcement (OSMRE) entered a Memorandum of Understanding on December 19, 2003: Process for Obtaining A NPDES Permit Under Subpart H - Western Alkaline Mine Drainage Category. Working through the process outlined in the MOU, OSM and EPA conduct technical reviews of the Sediment Control Plan submitted by the Permittee. EPA has concluded that the Sediment Control Plan has been submitted in accordance with the requirements of 40 CR Part 434, and that the Sediment Control Plan meets the minimum requirements to demonstrate that the average annual sediment yields that will not be greater than the sediment yield levels from pre-mined, undisturbed conditions.

## **B. Water Quality-Based Effluent Limitations**

Water quality-based effluent limitations are required in NPDES permits when the permitting authority determines that a discharge causes, has the reasonable potential to cause, or contributes to an excursion above any water quality standard (40 CFR 122.44(d)(1)).

When determining whether an effluent discharge causes, has the reasonable potential to cause, or contributes to an excursion above narrative or numeric criteria, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution, the variability of the pollutant or pollutant parameter in the effluent, the sensitivity of

the species to toxicity testing (when evaluating whole effluent toxicity) and where appropriate, the dilution of the effluent in the receiving water (40 CFR 122.44(d)(1)(ii)).

EPA evaluated the reasonable potential to discharge toxic pollutants according to guidance provided in the *Technical Support Document for Water Quality-Based Toxics Control* (TSD) (Office of Water Enforcement and Permits, U.S. EPA, March 1991) and the *U.S. EPA NPDES Permit Writers Manual* (Office of Water, U.S. EPA, December 1996). These factors include:

1. Applicable standards, designated uses and impairments of receiving water
2. Dilution in the receiving water [not applicable in this case]
3. Type of industry
4. History of compliance problems and toxic impacts
5. Existing data on toxic pollutants - Reasonable Potential Analysis

### **1. Applicable Standards, Designated Uses and Impairments of Receiving Water**

The Navajo Nation Water Quality Standards establish water quality criteria to protect the following beneficial uses in Navajo Nation waters:

Secondary Human Contact (ScHC), Fish Consumption (FC), Aquatic and Wildlife Habitat (A&WHbt), and Livestock and Wildlife Watering (L&W). EPA has taken into account the physical separation of the onsite collection ponds and monitoring points from the waterbodies for which these uses are designated, and based on best professional judgement determined that only the Livestock and Wildlife Watering use is likely to be affected by the discharge as measured on-site.

Receiving waters within the State of New Mexico have the following designated uses: livestock watering (LW), wildlife habitat (WH), limited aquatic life, and secondary contact.

In most cases under this permit, the New Mexico WQS are superseded by more stringent limits imposed in the Navajo Nation WQS. The more stringent limit for each parameter is listed below, except for cases where differing calculation-based limits apply.

Navajo Nation A&WHbt requirements set a pH requirement of 6.5 to 9.0 pH units at all times, superseding the limits of 6.0 to 9.0 from the coal mining ELG. The same A&WHbt requirements also set Aluminum standards of 0.75 mg/L acute and 0.087 mg/L chronic, and selenium requirements of 0.033 mg/L acute and 0.002 mg/L chronic. However, as noted above, the separation between the monitoring sites of this permit and the Tribal waters for which this use is designated renders this use unlikely to be affected or threatened by discharges from the mine remediation. Monitoring of these parameters is still required under the permit.

Navajo L&W standards set a limit of 5 mg/L for dissolved Boron, 1 mg/L for dissolved Cobalt, 0.0052 mg/L Cyanide (as free cyanide), and 30 pCi/L for combined Radium 226 and 228.

Navajo FC standards specify a maximum of 4.6 mg/L Nickel and 5.1 mg/L Zinc.

Navajo ScHC standards set a limit of 126 mg/L on total Boron. 0.933 mg/L Copper,

New Mexico WQS for LW stipulate a limit of 15 pCi/L alpha, 30.0 pCi/L Radium 226+228, 5 mg/L Boron (dissolved), 1 mg/L Cobalt (dissolved), 0.5 mg/L Copper (dissolved), as well as hardness-dependent limits for Aluminum, Copper, Manganese, Nickel, and Zinc. New Mexico WQS for WH specify a limit of 0,005 mg/L Selenium (total recoverable).

Additionally, the permit implements provisions of the Colorado River Salinity Forum, which specifies restrictions on Total Dissolved Solids (TDS) discharges to tributaries of the Colorado River and establishes certification conditions for facilities making such discharges or seeking exemption from the provisions. Due to the lack of prior data collection on TDS discharges from the facility, the permit requires regular monitoring of TDS discharges during rainfall events in order to facilitate comparisons with the Salinity Control Forum provisions for waivers of requirements (appendix B, section I.B.4) which are based on maximum TDS load. Further details on the provisions can be reviewed at [coloradoriversalinity.org/docs/2014 Final REVIEW - complete.pdf](http://coloradoriversalinity.org/docs/2014%20Final%20REVIEW%20-%20complete.pdf), appendix B; the provisions specific to existing industrial facilities like McKinley Mine are detailed on page B-8.

## 2. Dilution in the Receiving Water

Discharges from the Mine flow to various tributaries such as Coal Mine Wash, Defiance Draw, and Tse Bonita Wash, which may have no natural flow during certain times of the year. Therefore, no dilution of the effluent has been considered in the development of water quality-based effluent limits applicable to the discharge.

## 3. Type of Industry

As noted in the supporting documentation for the Effluent Limitation Guidelines, coal mines in western alkaline regions have several typical parameters of concern, including suspended solids, iron, manganese, and pH. Furthermore, data submitted by the facility show low but measurable levels of other parameters (see Table 1).

## 4. History of Compliance Issues and Toxic Impacts

The facility has had deficiencies in its data reporting, particularly during the first half of the previous permit term (2009-2012), which make it difficult to ascertain the overall performance of the treatment structures. Furthermore, within the limited data available there were infrequent but at times sizable exceedances of the limits for:

<b>TSS</b>	<b>Limits</b>	Units	8/31/2010	9/30/2010	8/31/2011	9/30/2011	12/31/2014
Monthly Avg	<b>35</b>	mg/L	147.6	69.9	186.2	45.5	n/a
Daily Max	<b>70</b>	mg/L	730	223	635	72	106

<b>Iron</b>	<b>Limits</b>	Units	8/31/2010	9/30/2010	9/30/2011
Monthly Avg	<b>3.5</b>	mg/L	21.2	4.36	6.85
Daily Max	<b>7.0</b>	mg/L	66.3	9.75	9.18

<b>pH</b>	<b>Limits</b>	Units	7/31/2015	8/31/2015
Minimum	<b>6.5</b>	Standard pH units	n/a	n/a
Maximum	<b>9.0</b>	Standard pH units	9.7	9.8

These exceedances suggest that the parameters in question remain potential issues for water quality downstream of the discharge, and that permit limits on these parameters are appropriate.

## 5. Existing Data on Toxic Pollutants

For pollutants with effluent data available, EPA has conducted a reasonable potential analysis based on comparisons with applicable water quality standards. Where data show discharges containing levels of a pollutant in excess of a standard, this demonstrates the reasonable potential for future exceedances and a limit for that pollutant has been incorporated into the permit:

Summary of Reasonable Potential Analysis:

Parameter <sup>(1)</sup>	Maximum Observed Concentration	Most Stringent Water Quality Criterion	Demonstrated Reasonable Potential?
Iron	66.3 mg/L	3.5 mg/L	Y
Alpha Radiation	4.85 pCi/L	15 pCi/L	N
Radium 226	1.84 pCi/L	30 pCi/L	N
Boron (total)	0.0485 mg/L	5 mg/L	N
Cobalt (total)	0.0012 mg/L	1 mg/L	N
Copper (total)	0.0049 mg/L	0.933 mg/L	N
Nickel (total)	0.0022 mg/L	4.6 mg/L	N
Zinc (total)	0.0074 mg/L	5.1 mg/L	N
Cyanide (total)	0.058 mg/L	0.0052 mg/L (free Cyanide)	Y

<sup>(1)</sup> For purposes of RP analysis, parameters measured as Non-Detect are considered to be zeroes. Only parameters with Maximum Observed Concentration >0 are included in this analysis.

Note that Copper and Cyanide are potentially misleading in this case because of differences in measurement standards; the New Mexico copper standard of 0.5 mg/L is for dissolved copper so the 0.933 mg/L total copper standard from the Navajo WQS has been used instead in order to make better use of the available data. Additionally for Cyanide, the Navajo L&W standard is based on free Cyanide while the reported data are for total Cyanide.

### C. Rationale for Numeric Effluent Limits and Monitoring

EPA evaluated the typical pollutants expected to be present in the effluent and selected the most stringent of applicable technology-based standards or water quality-based effluent limitations. Where effluent concentrations of toxic parameters are unknown or are not reasonably expected to be discharged in concentration that have the reasonable potential to cause or contribute to water quality violations, EPA may establish monitoring requirements in the permit. Where monitoring is required, data will be re-evaluated and the permit may be re-opened to incorporate effluent limitations as necessary.

### *Flow*

No limits established for flow, but flow rates must be monitored and reported. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *TSS*

Limits for TSS are established based on the data showing difficulty complying with limits under the previous permit. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Iron*

Limits for Iron are established based on the data showing difficulty complying with limits under the previous permit. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *pH*

Limits for pH are established based on the mining ELGs, and made more stringent based on the Navajo Nation WQS for Aquatic and Wildlife Habitat, as described above. These upper and lower pH limits are incorporated into the permit. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Manganese*

Manganese limits are not incorporated into the permit because the ELG explicitly waives the manganese limit when the pH of effluent, before treatment, is consistently above 6.0. This facility's effluent appears to fit that category, hence the manganese limit is waived for this permit. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Alpha Radiation*

The permit contains a monitoring requirement for Alpha Radiation based on Navajo Nation and New Mexico WQS. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Aluminum*

The permit contains a monitoring requirement for Aluminum based on Navajo Nation and New Mexico WQS. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Selenium (total)*

The permit contains a monitoring requirement for Selenium based on Navajo Nation and New Mexico WQS. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

### *Cyanide (total)*

Based on the reasonable potential analysis, EPA has determined that the discharge has a reasonable potential to cause or contribute to an exceedance of applicable water quality standards for Cyanide. Therefore, the permit contains an effluent limit for Cyanide based on the Navajo

Nation WQS for Aquatic and Wildlife Habitat. Monitoring is required daily during rainfall events unless there was no rainfall recorded during the reporting calendar month.

#### **D. Anti-Backsliding**

Section 402(o) of the CWA prohibits the renewal or reissuance of an NPDES permit that contains effluent limits less stringent than those established in the previous permit, except as provided in the statute due to changes in the type of operations at the site and, thus, changes in the applicable ELGs.

The permit does not establish any effluent limits less stringent than those in the previous permit and does not allow backsliding.

#### **E. Antidegradation Policy**

EPA's antidegradation policy at 40 CFR 131.12 and the Navajo Nation and New Mexico Water Quality Standards (§20.6.4.8) require that existing water uses and the level of water quality necessary to protect the existing uses be maintained.

As described in this document, the permit establishes effluent limits and monitoring requirements to ensure that all applicable water quality standards are met. The permit does not include a mixing zone, therefore these limits will apply at the end of pipe without consideration of dilution in the receiving water. A priority pollutant scan has been conducted of the effluent, demonstrating that most pollutants will be discharged below detection levels.

Therefore, due to the low levels of toxic pollutants present in the effluent, level of treatment being obtained, and water quality-based effluent limitations incorporated into this permit, the discharge is not expected to adversely affect receiving water bodies or result in any degradation of water quality.

### **VII. NARRATIVE WATER QUALITY-BASED EFFLUENT LIMITS**

The Navajo Nation Surface Water Quality Standards and the New Mexico Standards for Interstate and Intrastate Surface Waters contains narrative water quality standards applicable to the receiving water. Therefore, the permit incorporates applicable narrative water quality standards for each relevant jurisdiction.

### **VIII. MONITORING AND REPORTING REQUIREMENTS**

The permit requires the permittee to conduct monitoring for all pollutants or parameters where effluent limits have been established, at the minimum frequency specified. Additionally, where effluent concentrations of toxic parameters are unknown or where data are insufficient to determine reasonable potential, monitoring may be required for pollutants or parameters where effluent limits have not been established.

#### **A. Effluent Monitoring and Reporting**

The permittee shall conduct effluent monitoring to evaluate compliance with the proposed permit conditions. The permittee shall perform all monitoring, sampling and analyses in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit. All monitoring data shall be reported on monthly

DMRs and submitted quarterly as specified in the proposed permit. All DMRs are to be submitted electronically to EPA using NetDMR.

### **B. Priority Toxic Pollutants Scan**

A Priority Toxic Pollutants scan shall be conducted during the fourth year of the five-year permit term to ensure that the discharge does not contain toxic pollutants in concentrations that may cause a violation of water quality standards. Results of this scan shall be submitted along with the application for NPDES permit renewal. The permittee shall perform all effluent sampling and analyses for the priority pollutants scan in accordance with the methods described in the most recent edition of 40 CFR 136, unless otherwise specified in the proposed permit or by EPA. 40 CFR 131.36 provides a complete list of Priority Toxic Pollutants.

## **IX. SPECIAL CONDITIONS**

### **A. Development and Implementation of Best Management Practices**

Pursuant to 40 CFR 122.44(k)(4), EPA may impose Best Management Practices (BMPs) which are “reasonably necessary...to carry out the purposes of the Act.” The pollution prevention requirements or BMPs proposed in the permit operate as technology-based limitations on effluent discharges that reflect the application of Best Available Technology and Best Control Technology. Therefore, the draft permit requires that the permittee develop (or update) and implement a Pollution Prevention Plan with appropriate pollution prevention measures or BMPs designed to prevent pollutants from entering tributaries of the Rio Puerco and other surface waters while performing normal processing operations at the facility.

The permittee shall develop and implement BMPs that are necessary to control discharges in accordance with Subpart H of the coal mining ELG, and the approved Sediment Control Plan shall be incorporated into this permit as an effluent limit. The permit requires that the permittee design, implement, and maintain the BMPs in the manner specified in the Sediment Control Plan.

## **X. OTHER CONSIDERATIONS UNDER FEDERAL LAW**

### **A. Impact to Threatened and Endangered Species**

Section 7 of the Endangered Species Act of 1973 (16 U.S.C. § 1536) requires federal agencies to ensure that any action authorized, funded, or carried out by the federal agency does not jeopardize the continued existence of a listed or candidate species, or result in the destruction or adverse modification of its habitat.

There are 5 listed endangered species in the area potentially impacted by the facility and its discharge: the Mexican Spotted Owl, the Southwestern Willow Flycatcher, the Yellow-Billed Cuckoo, the Zuni Bluehead Sucker, and the Zuni Fleabane.

EPA conducted a biological analysis and found that the discharge will have “no effect” on any of these listed species. The listed species are:

- three birds which are not dependent on, and may see their habitat options enhanced by restoration of, lands on the former mine site;
- one fish which favors shady, boulder- and cobble-bottomed streams and is therefore unlikely to favor, or even occur in, the temporary stormwater catchbasins on the mine reclamation site, and also has its key habitat over 65 miles from the mine site in a different watershed; and

- one plant which favors sandstone outcrops and is unlikely to have its habitat negatively affected by the restoration of former mining lands

EPA has forwarded a copy of the biological analysis, draft permit, and this fact sheet to USFWS for review and comment on conclusions concerning the effects of the proposed permit on listed species.

### **B. Impact to Coastal Zones**

The Coastal Zone Management Act (CZMA) requires that Federal activities and licenses, including Federally permitted activities, must be consistent with an approved state Coastal Management Plan (CZMA Sections 307(c)(1) through (3)). Section 307(c) of the CZMA and implementing regulations at 40 CFR 930 prohibit EPA from issuing a permit for an activity affecting land or water use in the coastal zone until the applicant certifies that the proposed activity complies with the State (or Territory) Coastal Zone Management program, and the State (or Territory) or its designated agency concurs with the certification.

The proposed permit does not affect land or water use in the coastal zone.

### **C. Impact to Essential Fish Habitat**

The 1996 amendments to the Magnuson-Stevens Fishery Management and Conservation Act (MSA) set forth a number of new mandates for the National Marine Fisheries Service, regional fishery management councils and other federal agencies to identify and protect important marine and anadromous fish species and habitat. The MSA requires Federal agencies to make a determination on Federal actions that may adversely impact Essential Fish Habitat (EFH).

The proposed permit contains technology-based effluent limits and numerical and narrative water quality-based effluent limits as necessary for the protection of applicable aquatic life uses. The proposed permit does not directly discharge to areas of essential fish habitat. Therefore, EPA has determined that the proposed permit will not adversely affect essential fish habitat.

### **D. Impact to National Historic Properties**

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effect of their undertakings on historic properties that are either listed on, or eligible for listing on, the National Register of Historic Places. Pursuant to the NHPA and 36 CFR §800.3(a)(1), EPA is making a determination that issuing this proposed NPDES permit does not have the potential to affect any historic properties or cultural properties. As a result, Section 106 does not require EPA to undertake additional consulting on this permit issuance.

## **XI. STANDARD CONDITIONS**

### **A. Reopener Provision**

In accordance with 40 CFR 122 and 124, this permit may be modified by EPA to include effluent limits, monitoring, or other conditions to implement new regulations, including EPA-approved water quality standards; or to address new information indicating the presence of effluent toxicity or the reasonable potential for the discharge to cause or contribute to exceedances of water quality standards.

### **B. Standard Provisions**

The permit requires the permittee to comply with EPA Region IX Standard Federal NPDES Permit Conditions, dated July 1, 2001.

## **XII. ADMINISTRATIVE INFORMATION**

### **A. Public Notice (40 CFR 124.10)**

The public notice is the vehicle for informing all interested parties and members of the general public of the contents of a draft NPDES permit or other significant action with respect to an NPDES permit or application.

### **B. Public Comment Period (40 CFR 124.10)**

Notice of the draft permit will be placed in a daily or weekly newspaper within the area affected by the facility or activity, with a minimum of 30 days provided for interested parties to respond in writing to EPA. After the closing of the public comment period, EPA is required to respond to all significant comments at the time a final permit decision is reached or at the same time a final permit is actually issued.

### **C. Public Hearing (40 CFR 124.12(c))**

A public hearing may be requested in writing by any interested party. The request should state the nature of the issues proposed to be raised during the hearing. A public hearing will be held if EPA determines there is a significant amount of interest expressed during the 30-day public comment period or when it is necessary to clarify the issues involved in the permit decision.

### **D. Water Quality Certification Requirements (40 CFR 124.53 and 124.54)**

For States, Territories, or Tribes with EPA approved water quality standards, EPA is requesting certification from the affected State, Territory, or Tribe that the proposed permit will meet all applicable water quality standards. Certification under section 401 of the CWA shall be in writing and shall include the conditions necessary to assure compliance with referenced applicable provisions of sections 208(e), 301, 302, 303, 306, and 307 of the CWA and appropriate requirements of Tribal and State law.

After the draft permit has been revised to include any relevant comments from the 30-day public comment period, it will be forwarded to NNEPA and NM EPA for CWA Section 401 certification. This certification ensures that the permit will comply with applicable Federal CWA standards as well as with the applicable state and tribal environmental laws.

## **XIII. CONTACT INFORMATION**

Comments, submittals, and additional information relating to this proposal may be directed to:

Pascal Mues, (415) 972-3768,

[mues.pascal@epa.gov](mailto:mues.pascal@epa.gov)

EPA Region IX

75 Hawthorne Street (WTR 2-3)

San Francisco, California 94105

#### **XIV. REFERENCES**

- EPA. 1991. *Technical Support Document for Water Quality-based Toxics Control*. Office of Water, EPA. EPA/505/2-90-001.
- EPA. 1996. *Regions IX & X Guidance for Implementing Whole Effluent Toxicity Testing Programs*, Interim Final, May 31. 1996.
- EPA. 2002a. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms - Fifth Edition*. Office of Water, EPA. EPA-821-R-02-012.
- EPA. 2002b. *National Recommended Water Quality Criteria*. Office of Water, EPA. EPA-822-R-02-047.
- Navajo Nation, 2008. *Navajo Nation Surface Water Quality Standards 2007*, Navajo Nation Resources Committee, 13 May 2008.
- EPA. 2010. *U.S. EPA NPDES Permit Writers' Manual*. Office of Water, EPA. EPA-833-K-10-001.
- New Mexico, 2012. *Standards for Interstate and Intrastate Surface Waters*, New Mexico Administrative Code, Title 20, Ch. 6, Part 4.
- Colorado River Forum, 2014. *2014 Review, Water Quality Standards for Salinity, Colorado River System*, Colorado River Basin Salinity Control Forum, [coloradoriversalinity.org/docs/2014 Final REVIEW - complete.pdf](http://coloradoriversalinity.org/docs/2014%20Final%20REVIEW%20-%20complete.pdf), retrieved 14 Dec 2016.