

## Statement of Basis

Permittee: Southern Ute Indian Tribe (SUIT)

Facility: Southern Ute Tribe POTW (Ignacio)  
SIC: 4592 Sewerage System  
Domestic Wastewater, Mechanical Plant

Permit Number: CO-0022853

Responsible Official: Matthew Box, Chairman  
Southern Ute Indian Tribe

Facility Contacts: Fred Robyns, Wastewater Superintendent  
Southern Ute Tribe POTW  
970.563.0296  
(fax) 970.563.5510  
frobyns@suitutil.com

Permit Type: Minor, POTW, discharge to surface water,  
Indian Country, permit renewal

Facility Location: 16364 US HWY 172  
Ignacio, CO 81137  
La Plata County  
37° 6' 12.67"N, 107° 37' 51.14"W.

Discharge Point: 002A, South of POTW into Rock Creek

### **Section 1.0 – Background Information**

#### 1.1 – Permit history

This Statement of Basis is for the renewal of the permit for the Southern Ute Indian Tribe (SUIT) Publicly Owned Treatment Works (POTW), which treats wastewater from the Town of Ignacio, Colorado and a tribally owned collection system located within the external boundaries of the Southern Ute Indian Tribe.

The current permit was issued by the EPA NPDES Permitting Division on August 6, 2004 and expired on June 30, 2009. SUIT submitted the permit application to EPA on April 9, 2009. EPA determined the application to be complete on April 16, 2009.. EPA provided an administratively extension of the permit in June 2009. All of the requirements and

conditions of the extended permit remain fully effective until the renewal permit is issued and effective.

According to records maintained for this facility, this is the 3<sup>rd</sup> permit renewal for the original permit issued in 1992. The original permit was issued to the Ignacio Sanitation District, which previously used lagoons to treat wastewater from the service area. The SUIT took control of the wastewater treatment and the collection system in 1999 and replaced the wastewater lagoon with a mechanical POTW.

1.2 – Plant Performance and Compliance History

The data in Table 1 is collected from discharge monitoring report (DMR) data submitted to EPA from 2004 through 2008. Table 1 shows the average and maximum pollutant values calculated from the DMR data. The average and maximum data presented for ammonia was calculated using a regression order statistics program found in Pro UCL. In addition, Table 1 provides a comparison of the 4-year POTW performance history to the previous permit limits.

<b>Table 1 – SUIT POTW Performance History January 2004 – July 2008</b>				
<b>Parameter</b>	<b>Number of Samples</b>	<b>Reported Concentrations Avg/Max (mg/L)</b>	<b>Previous Permit Limit 7D/30D</b>	<b>No. of Excursions</b>
Biochemical Oxygen Demand (BOD <sub>5</sub> )	55	2.0/4.2	45/30	0
BOD % Removal	55	99.0%	85 % Removal	0
BOD Loading (Calculated from DMR data)	55	645.6/1,345.1 (lbs/day)	---- Design Capacity = 1500 lbs day <sup>(1)</sup>	
Total Suspended Solids (TSS)	55	2.1/11.4	45/30	0
TSS % Removal	55	99.0%	85 % Removal	0
TSS Loading (Calculated from DMR data)	55	993.7/2962.8 (lbs/day)	---- Design Capacity = 1500 lbs day <sup>(1)</sup>	
pH	55	Max – 7.8 Min – 7.4	Shall not be less than 6.5 or greater than 9.0	0

		(Std Units)	in any single sample or analysis	
Effluent Flow	55	0.26/0.58 (MGD)	0.6 MGD	N/A
Oil and Grease	51	No visual sheen was reported <i>Note: Visual Observations only, no analytical data.</i>	10	0
Ammonia as N	51	0.11/0.12 Note: Regression Order Statistics Calculated with Pro UCL, 2 outliers, 0.23 and 0.19	May 1-Aug 31 = 3.0 Sept 1-April 30 = 7.0	0
Fecal Coliform	50	50 total samples with 10 non-detect values: (#/100mL) Average is not calculated Maximum value is 19.3	---/415	0

<sup>(1)</sup> Design Capacity calculated from the Processing Operating Manual developed by Baker Hughes

**Effluent Flow:** Based on the DMR data in Table 1, the average effluent flow for the past 5 years is 43% of the average daily design capacity. The hydraulic capacity of the SUIT POTW appears to be adequate for the wastewater received from the service area.

**BOD<sub>5</sub>:** The BOD loadings for the SUIT POTW appear to be below the design organic BOD capacity of 1500 lbs/day. The average BOD loading for the 4-year period is 646 lbs/day, which is approximately 43% of the organic design capacity. The 4-year average BOD Removal percentage of 99.0% outperforms the previous permit BOD removal limit of 85%.

An evaluation of the compliance history of the SUIT POTW for BOD indicates that the average effluent BOD levels were 4.4% of the 7-day compliance limit of 45 mg/L and 6.7% of the 30-day compliance limit of 30 mg/L. In addition, the POTW's maximum effluent BOD levels were 9.3% of the 7-day compliance limit and 14% of the 30-day compliance limit.

**TSS:** The TSS loadings for the SUIT POTW appear to be below the design TSS capacity of 1500 lbs/day. The average TSS loading for the 4-year period is 994 lbs/day, which is approximately 66% of the solids design capacity. The 4-year average TSS removal percentage of 99.0% outperforms the previous permit removal limit of 85%.

An evaluation of the compliance history of the SUIT POTW for TSS indicates that the average effluent TSS levels were 4.7% of the 7-day compliance limit of 45 mg/L and 7.0% of the 30-day compliance limit of 30 mg/L. In addition, the POTW's maximum effluent TSS levels were 25.3% of the 7-day compliance limit and 38.0% of the 30-day compliance limit.

**pH:** The minimum pH value of 7.4 and maximum pH value of 7.8 are within the compliance limits of between 6.5 and 9.0 in any single analysis. The previous compliance limits will be maintained in the reissued permit.

**Oil and Grease:** The SUIT POTW did not collect and analyze sampling events for oil and grease, except for sampling required by the permit application in 2009 (Table 4). The 3 data points submitted in the permit application indicate that oil and grease is not detected in the effluent discharge. In addition, the daily observations, as required in the previous permit indicated that there was not an observed visual sheen in the evaluated time period.

**Ammonia:** Approximately 40% of the ammonia dataset consisted of non-detect data, therefore, the data was evaluated using ProUCL. ProUCL is a statistical software package that can be used to determine upper confidence limits (UCL), evaluate outliers, normalize data distribution and perform regression order statistics to “fit” censored non-detect data based on a normal distribution. The regression order performed on a normal distribution of the ammonia data indicated that the mean of the data from the 4-year period is 0.11 mg/L. The mean of the dataset is 3.6% of the 30-day seasonal (May 1-Aug 31) limit of 3.0 mg/L and 1.6% of the 30-day seasonal (Sept 1 – April 30) limit of 7.0 mg/L.

During the evaluation of the dataset in ProUCL, the statistical software package identified 2 outliers when normalizing the data distribution and determine the mean based on the fit of the censored non-detect data. However, for compliance evaluation the maximum value for the 4-year period is used and not considered to be an outlier. The maximum of the dataset is 0.23 mg/L, which is 7.7% of the 30-day seasonal (May 1-Aug 31) limit and 3.3% of the 30-day seasonal (Sept 1 – April 30) limit.

**Fecal Coliforms:** There were 50 samples taken for fecal coliforms from 2004 through 2008. 10 of these samples indicate non-detect concentrations. In addition, the maximum of the dataset showed a value of 19.3 colonies/100 mL, significantly below the permit limit of 415 colonies/100 mL. From 2006-2008, there were a total of 31 samples taken, with 9 non-detect values and a maximum of 3 colonies/100 mL.

1.2.1 – Biosolids Data

The monitoring data for biosolids was generated from the Region 8 Biosolids Database Management System (BDMS) for the SUIT POTW. The report indicated that 1 sample was taken from the biosolids in 2001. The data from the biosolids sampling event is shown in Table 2. The biosolids compliance limits for land application found in 40 CFR Part 503.13 are shown in Table 3.

The biosolids data was evaluated as an indicator of long term averages for metals due to pollutant partitioning of metals within the POTW and the detention time. Although 1 sampling event is not considered adequate for a thorough evaluation, it appears that based on the 2001 data, metals are partitioning to the biosolids below the compliance limits.

<b>Table 2 – Biosolids Monitoring Data for the SUIT POTW in 2001</b>				
<b>Pollutant</b>	<b>Result (mg/kg)</b>		<b>Pollutant</b>	<b>Result</b>
Arsenic	5.50		Fecal Coliform	4.00 #/g
Cadmium	2.00		Salmonella	0.00 #/4g
Chromium	20.00		Helminth OVA	0.00 #/g
Copper	530		Enteric Virus	0.00 PFU/g
Lead	35.00		Nitrite and Nitrate	0.25 %
Mercury	1.20		TKN	1.60 %
Molybdenum	12.00		Ammonia	0.07%
Nickel	20.00		Solids	73.00 %
Selenium	25.00		Nitrogen	0.00 %
Zinc	770.00		Phosphorus	0.18 %

<b>Table 3 – Table 3 of § 503.13 – Pollutant Concentrations</b>		
<b>Pollutant</b>	<b>Monthly Average Concentrations (mg/kg)</b>	<b>Percentage of Biosolids data to the §503.13 compliance limits</b>
Arsenic	41	13.4 %
Cadmium	39	5.1 %
Copper	1500	35.3 %
Lead	300	11.7 %
Mercury	17	7.1 %
Molybdenum (Table 1 of §503.13)	75	16.0 %
Nickel	420	4.8 %
Selenium	100	25.0 %
Zinc	2800	27.5 %

### 1.2.2 – Data Submitted on the Permit Application

The SUI POTW submitted effluent data as a requirement of the NPDES permit application, as shown in Table 4.

<b>Table 4 – Permit Application Data - 2009</b>	
<b>Pollutant</b>	<b>Result (mg/L) Avg/Max</b>
Nitrate/Nitrite as N	5.31/7.10
Oil and Grease	<5.0/<5.0
Phosphorus, total	2.39/2.82
TKN	1.96/2.11

### 1.3 – Conclusions

The data generated from the discharge monitoring reports, biosolids, and the permit application were evaluated to determine the compliance history of the SUI POTW and identify pollutants of concern. Based on the data evaluation, it appears that the SUI POTW is maintaining compliance with the permit standards.

## **Section 2.0 – Service Area**

### 2.1 – Domestic Wastewater Contribution

The collection system for the SUI POTW consists of a tribally owned collection system and the Ignacio Sanitation District. The collection systems consist of separate storm and sanitary sewers. The Town of Ignacio has a population of 669, according to the 2000 census and the SUI population serviced by the POTW is about 1,400. The service area also includes a commercial base including Sky Ute Casino.

### 2.2 – Industrial and Commercial Wastewater Sources

It does not appear that the service area of the SUI POTW contain industrial facilities that would be categorized as categorical under Pretreatment Standards promulgated by EPA and found in 40 CFR Chapter I, Subchapter N, Parts 403-471. In addition, it does not appear the service area contain commercial or industrial facilities that would be considered Significant Industrial Users under the definition found in 40 CFR 403.3(v).

The new Sky Ute Casino Resort (website: <http://www.skyutecasino.com/>) replaces a casino that has been operating since the 1970's. The new casino, located at 14324 US HWY 172 N, includes 140 hotel room and 6 suites and 5 restaurants. Estimates from the permit application indicate a short term projected wastewater contribution of 25,000 to 50,000 gallons per day with an expected 100,000 gallons per day at full operational status. The casino was sized with a multi-stage grease interceptor that was engineered to accommodate the commercial wastewater generated from the 5 restaurants. The grease interceptor is on a service schedule that will be monitored by the Utility staff.

It appears that there are no other significant commercial sources in the service area of the SUIT POTW. According to the permit application, the Inflow and Infiltration in the collection system is approximately 5,000 to 15,000 gallons per day. The collection system is in good condition and no significant improvements are needed at the time of permit renewal.

The SUIT POTW is required in the permit to “properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed and used by the permittee to achieve compliance with the conditions of the permit. This includes collections systems that contribute to the POTW. The POTW is required to evaluate maintenance schedules for all contributing collection systems to ensure adequate maintenance and minimize the potential for sanitary sewer overflows to occur.

### **Section 3.0 – SUIT POTW Process Information**

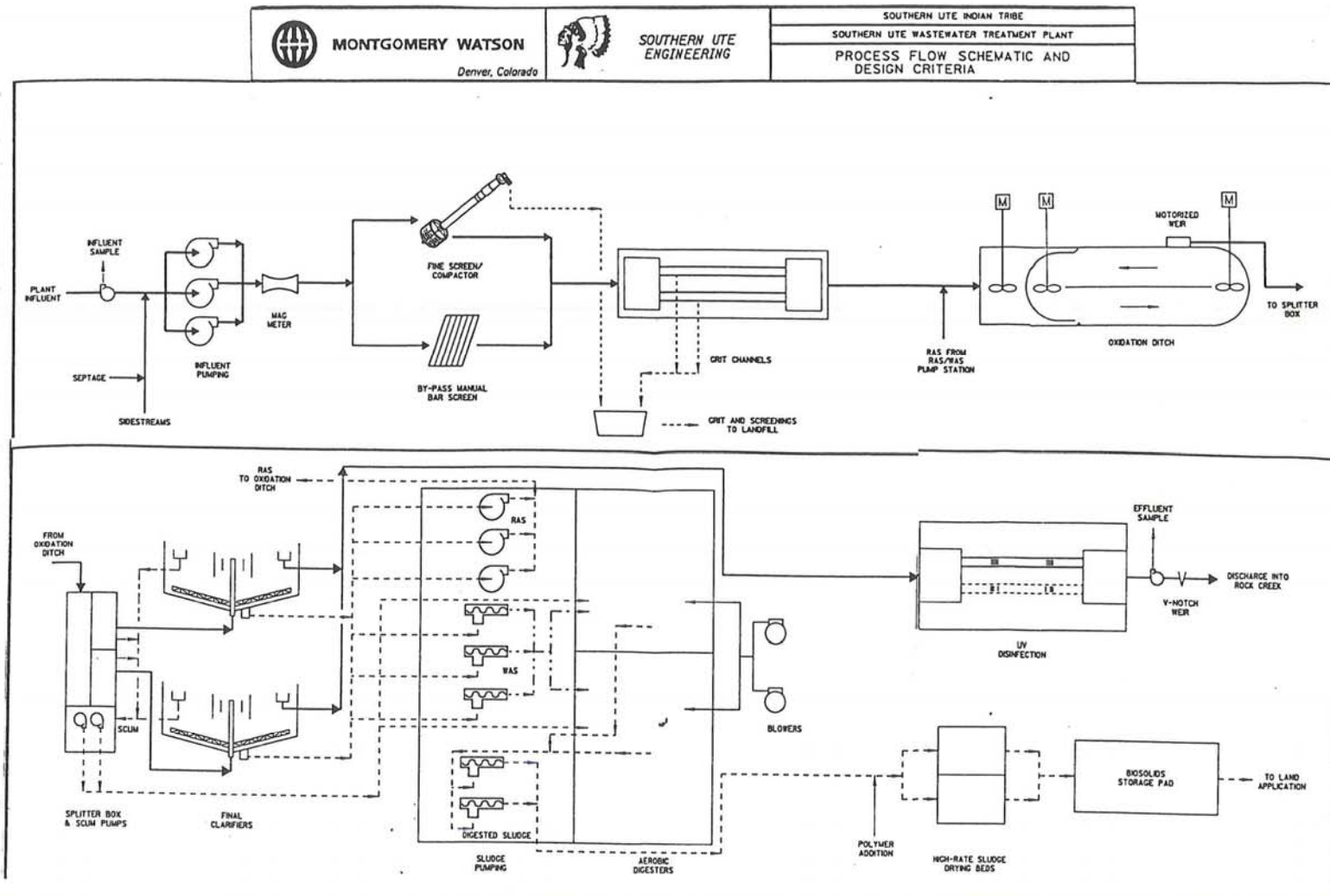
The SUIT POTW is located in the tribally-owned reservation and discharges within the tribally boundaries. The POTW is located approximately ¼ mile south of the southern edge of Ignacio and about ¾ mile south of the intersection of highways 151 and 172 at 16364 Hwy 174 (Figure 2). The Latitude and Longitude coordinates for the SUIT POTW are 37° 6' 12.67"N, 107° 37' 51.14"W. The discharge point for the SUIT POTW, designated 002A is located at 37° 6' 16.42"N, 107° 37' 51.31"W. The POTW currently treats tribally generated wastewater and wastewater from the town of Ignacio. The POTW is currently treating about 0.25 to 0.4 MGD of wastewater. An aerial view generated from Google Earth of the SUIT POTW is shown in Figure 1.



**Figure 1 - Southern Ute Indian Tribe (SUIT) POTW**

A process flow schematic diagram of the SUIT POTW is shown in Figure 2.





**Figure 2 - SUT POTW Process Flow Schematic**

### 3.1 – Wastewater

Note: Photos of the SUIT POTW processes are contained within the permit records. The wastewater generated from the Town of Ignacio and the Tribe arrives to the POTW through gravity flow into the influent pit at the facility and is pumped into the Headworks. The Headworks consists of an automated Rotomat Fine Screen and two grit channels. The screenings are washed and deposited into a two yard open top dumpster. Grit channels are cleaned by hand and the grit also is placed in the dumpster. Sewage from Headworks flows by gravity into the anoxic zone of the oxidation ditch. The ditch is a race track design with two vertical mixer aerators. Mixed liquors flow over an adjustable slide gate and into one of two secondary clarifiers. Each clarifier is designed to accommodate the full flow from the oxidation ditch. The current operating practice is to rotate the clarifiers annually to ensure proper maintenance. The overflow from the clarifiers is plumbed to an ultraviolet (UV) channel that has two 10-bank four lamp units. Current operating practice is to use the light banks one at a time and alternate after routine cleaning. The treated wastewater effluent flows to the discharge point 002 A, located southeast of the POTW, where it discharges into Rock Creek.

Description of 002 A: Wastewater discharged from the final UV disinfection system through the v-notch weir and into the effluent outfall pipe. The effluent outfall pipe terminates 5 feet from Rock Creek and spills onto rockworks leading to Rock Creek (Figure 3).



**Figure 3 - Discharge Point 002A into Rock Creek**

### 3.2 – Solids

Waste activated sludge from the clarifier is placed into an open aerobic digester where it is managed for maximum detention time. A SOUR test is performed at least once a month to confirm the degree of digestion. Solids in the ditch are held long enough to prestart the digestion process. Digested solids are mixed with polymer solution and poured onto a plastic perforated dewatering bed. Liquid is drained back into the influent pit and the solids are held on dewatering bed for a week. Solids are removed with a small tractor with a squeegee bucket and placed on a concrete drying pad. Solids are windrowed with a composter mixer to air/wind/sunlight treat until dry and crumbly. The solids are typically stored onsite for one to two years before land application to Tribal pastures and hay fields as a Class B biosolid.

### **Section 4.0 – Receiving Waters**

The Southern Ute Indian Tribe is in the San Juan Watershed. The San Juan Watershed is located within the upper basin of the Colorado River Watershed and is defined by the San Juan River and its tributaries, including the Los Pinos River.

The treated effluent from the SUIIT POTW is discharged to Rock Creek, which is a tributary of the Los Pinos River. The Ignacio Stream and two other unnamed streams are tributaries of Rock Creek and are located upstream of the SUIIT POTW discharge. According to Mr. Sal Valdez, Water Quality for the Southern Ute Indian Tribe, the Ignacio Stream is used mostly for agricultural and there are no municipal sources upstream of the SUIIT POTW. The Los Pinos River flows through the reservation where it exits the SUIIT boundary and enters the state waters of New Mexico.

#### 4.1 – Salinity Control

The Colorado River Basin Salinity Control Forum policy was established in 1973 to develop salinity water quality standards. (<http://www.nrcs.usda.gov/programs/salinity>) The developed standards include numeric salinity standards and a basin-wide plan of implementation for salinity control.

Previous permits required quarterly monitoring of total dissolved solids in the effluent and the intake water. The objective of this monitoring requirement was to determine if the effluent contains a concentration of TDS in excess of 400 mg/L of the raw intake water, indicating a significant contribution of salinity to the watershed. The data history for TDS did not indicate a significant contribution of salinity to the watershed (Table 5). This was to be expected for a small town with limited industrial development. It appears that the town of Ignacio has not experienced significant industrial development since the last permit issuance; however, a monitoring requirement will be included in the permit to gather current TDS data.

<b>Table 5 – Total Dissolved Solids Data History</b>			
<b>Date</b>	<b>Intake water (mg/L)</b>	<b>POTW Effluent (mg/L)</b>	<b>Difference</b>
Dec 2003	---	361	---
Sept 2003	---	286	---
June 2003	---	274	---
Dec 2002	120	448	328
Sept 2002	113	271	158
June 2002	---	300	---
Mar 2002	41	525	484
Dec 2001	81	295	214
Sept 2001	21	169	148
June 2001	41	277	236
Mar 2001	---	238	---
<b>Averages (using paired data only in last column)</b>	70	313	261

### **Section 5.0 – Technology and Water Quality Standards**

Effluent limitations for the SUIT POTW were derived through a three step process. The Secondary Treatment Technology standards found in 40 CFR Part 133 are applicable to the POTW owned and managed by the SUIT. The secondary treatment technology-based standards and limitations define the minimum level of treatment that must be met by all facilities and establish a level of effluent quality attainable through the application of secondary or equivalent treatment.

However, secondary treatment standards may be insufficient to protect all water quality parameters. Therefore, the 2<sup>nd</sup> step in the establishment of effluent limitations is to evaluate the water quality standards and the assimilative capacity for the receiving stream and establish limitations based on these standards to ensure the receiving stream water quality is protected.

The 3<sup>rd</sup> step is to evaluate narrative standards that may be applicable to this facility to further protect the characteristics and water quality of the receiving stream.

Section 5.1 – Technology Based Standards

The treated effluent from the SUIT POTW is subject to the provisions of the Secondary Treatment Technology Standards found in 40 CFR 122 Part 133. These standards establish the limitations listed in Table 6.

<b>Table 6 – Secondary Treatment – 40 CFR Part 133</b>			
<b>Effluent Limitations</b>			
<b>Parameter</b>	<b>30-Day Average mg/L</b>	<b>7-Day Average mg/L</b>	<b>Daily Maximum</b>
BOD <sub>5</sub>	30	45	---
BOD <sub>5</sub> % Removal	85% Removal	---	
TSS	30	45	
TSS % Removal	85% Removal	---	---
pH	---	---	The effluent values for pH shall be maintained within the limits of 6.0 to 9.0

Section 5.2 – Water Quality Standards

The Southern Ute Indian Tribe adopted water quality standards that apply to waters within the external boundary of the Southern Ute Indian Reservation. The water quality standards were submitted to EPA for approval, but were subsequently withdrawn before they were approved by EPA. Under the Tribe’s water quality standards, Rock Creek (a tributary of the Los Pinos River) is classified for the following:

- Aquatic Life Cold Class 1,
- Recreation Class 2,
- Water Supply, and
- Agriculture.

The Los Pinos River is classified for the following:

- Aquatic Life Cold Class 1,
- Recreation Class 1,
- Water Supply, and
- Agriculture.

Although EPA has not approved the water quality standards, the Tribe expects dischargers within the tribal reservation boundaries to comply. Therefore, EPA is considering these water quality standards during the permit writing of the direct discharge permit for the SUIT

POTW and ensure the discharge complies with the Tribe’s water quality standards. The biological and inorganic water quality standards established by the SUIT that are evaluated for this permit issuance are included in Table 7.

<b>Table 7 – SUIT Physical and Biological Numeric Criteria</b>			
<b>Parameter</b>	<b>Beneficial Use Designation</b>	<b>Water Quality Standard</b>	<b>Units</b>
Fecal Coliform <sup>(1)</sup>	Recreational Class 2, Secondary Contact	200	#/100 mL (geometric mean)
pH	Recreational Class 2, Secondary Contact	6.5 – 9.0	Std units

(1) Fecal Coliform is an indicator only. It may indicate the presence of pathogenic organisms; however, fecal coliforms counts from agriculture and urban runoff may not indicate organisms detrimental to human health. Where data are sufficient, compliance with the criterion shall be based on the geometric mean of at least five samples taken over a 30-day period. Where less than five samples are available, no single sample may be more than 200 colonies per 100 mL.

Ammonia:

Ammonia is present in the aqueous environment in both ionized and un-ionized forms. It is the un-ionized form which is toxic. The proportion of total ammonia present in un-ionized form in the receiving stream is a function of the combined upstream and effluent ammonia concentrations, as well as pH and temperature measurements in the receiving water. Ammonia is non-conservative (i.e., concentrations are affected by biological processes) and its toxicity is affected by environmental conditions (pH and temperature) in the receiving stream.

AMMTOX Model, version 2 was used to model the processes that define the controlling conditions for ammonia toxicity, predict the biological removal of ammonia, and project the downstream affects of ammonia present in the discharge of the SUIT POTW.

Data inputs for the model were gathered from the USGS gage station 09353800, Los Pinos River near Ignacio (located upstream of the SUIT POTW) and USGS gage station 09354500, Los Pinos River near La Boca (located downstream of the SUIT POTW). To determine the low flows available to the SUIT POTW, low flows were calculated using EPA’s DFLOW software. The resulting allowable discharge concentrations for ammonia, based on the AMMTOX modeling software are presented in Table 8.

<b>Table 8– Ammonia as N, mg/L</b>		
<b>Monthly limits</b>		
<b>Parameter</b>	<b>30-day average, mg/L</b>	<b>Daily Maximum, mg/L</b>
January	2.8	4.0
February	2.6	4.0
March	2.3	4.0
April	2.0	4.0
May	1.7	4.0
June	1.6	4.0
July	1.4	4.0
August	1.4	4.0
September	1.5	4.0
October	1.9	4.0
November	2.3	4.0
December	2.5	4.0

### Section 5.3 – Applicable Narrative Standards

In addition to numeric water quality standards, the SUT established the following narrative water quality and biological criteria that will be evaluated to determine narrative permit limitations in the reissued permit.

#### 5.3.1 Narrative Water Quality Criteria

Reservation surface waters except constructed wetlands shall be free from substances attributable to human caused point source or non-point source discharge in amounts, concentrations or combinations which:

- settle to form bottom deposits detrimental to existing beneficial uses; or
- form floating debris, scum or other surface materials sufficient to harm existing beneficial uses; or
- produce color, odor or other conditions in such a degree as to create a nuisance or harm existing beneficial uses or impart any undesirable taste to significant edible aquatic species or to the water; or

- are harmful to existing beneficial uses or toxic to humans, animals, plants or aquatic life; or
- produce a predominance of undesirable aquatic life or animals which are detrimental to existing beneficial uses; or
- cause a film on the surface or produce a deposit on shorelines which is detrimental to existing beneficial uses.

### 5.3.2 Narrative Biological Criteria

- Reservation waters shall be free from substances, attributable to human-induced point source discharge or non-point source activities, in concentrations or combinations which would impair the aquatic community.

## Section 6.0 – Reasonable Potential

The NPDES regulations in 40 CFR 122.44(d)(1)(i - iii) require permit writers to assess effluent to evaluate impact of direct dischargers on downstream water quality. This assessment is used to determine permit limitations that are protective of water quality.

**Effluent Flow:** Based on the DMR data in Table 1, the average effluent flow for the past 5 years is 43% of the average daily design capacity. The hydraulic capacity of the SUIT POTW appears to be adequate for the wastewater received from the service area.

**BOD<sub>5</sub>:** A reasonable potential analysis for BOD using the Region 8 Reasonable Potential Spreadsheet indicated that the maximum effluent concentration (MEC) for acute limits based on the data is 3.7, and no reasonable potential for exceedance exists for the BOD daily maximum limit of 45 mg/L. The reasonable potential calculations in the spreadsheet indicate that the MEC for chronic limits, based on the data, is 4.9 mg/L, and no reasonable potential for exceedance exist for the BOD monthly average limit of 30 mg/L. However, the secondary treatment limits for BOD will be included in the SUIT permit because these are technology-based limitations applicable to the POTW.

**TSS:** The Region 8 Reasonable Potential Spreadsheet was not configured to determine potential for limit exceedances for TSS. However, an evaluation of the 4-year data indicates that the effluent data is significantly below the compliance limits of 45 daily and 30 monthly. The average daily limits are approximately 4.4% of the daily limit and 6.6% of the monthly limit. However, the secondary treatment limits for TSS will be included in the SUIT permit because these are technology-based limitations applicable to the POTW. However, the secondary treatment limits for TSS will be included in the SUIT permit because these are technology-based limitations applicable to the POTW.



**pH:** The minimum pH value of 7.4 and maximum pH value of 7.8 are within the compliance limits of between 6.5 and 9.0 in any single analysis. The previous compliance limits will be maintained in the reissued permit.

**Oil and Grease:** Although there were no sampling events collected and analyzed, the visual observations indicated that there was not an observed visual sheen in the evaluated time period. The previous compliance limits will be maintained in the reissued permit.

**Ammonia:** Approximately 40% of the ammonia dataset consisted of non-detect data, therefore, the data was evaluated using ProUCL. ProUCL is a statistical software package that can be used to determine upper confidence limits (UCL), evaluate outliers, normalize data distribution and perform regression order statistics to “fit” censored non-detect data based on a normal distribution. The regression order performed on a normal distribution of the ammonia data indicated that the mean of the data from the 4-year period is 0.11 mg/L. The mean of the dataset is 3.6% of the 30-day seasonal (May 1-Aug 31) limit of 3.0 mg/L and 1.6% of the 30-day seasonal (Sept 1 – April 30) limit of 7.0 mg/L. During the evaluation of the dataset in ProUCL, the statistical software package identified 2 outliers when normalizing the data distribution and determined the mean based on the fit of the censored non-detect data. However, for compliance evaluation the maximum value for the 4-year period is used and not considered to be an outlier. The maximum of the dataset is 0.23 mg/L, which is 7.7% of the 30-day seasonal (May 1-Aug 31) limit and 3.3% of the 30-day seasonal (Sept 1 – April 30) limit. New monthly ammonia limits, based on AMMTOX modeling software are developed.

**Fecal Coliforms:** An evaluation of a 3-year dataset (2006-2008) from SUIT POTW show that approximately 1/3 of the dataset is below detection of 1 colony/100mL. The average for the 3-year period is mathematically less than the detection limit of 1colony/100mL. The average of the 5 year dataset for SIUT POTW is approximately 4 colonies/100 mL. These averages are well below the 200 colonies/100 mL water quality standard established for the stream segment. However, fecal coliform is an indicator only. It may indicate the presence of pathogenic organisms; however, fecal coliforms counts from agriculture and urban runoff may not indicate organisms detrimental to human health. Therefore, a monitoring requirement for Escherichia Coli will be included in the permit to collect data for the permit life.

**Narrative Water Quality Standards:** The narrative standards adopted by the SUIT (Section 5.3) were evaluated qualitatively to determine potential for these standards to be violated. The service area of the SUIT POTW is not highly industrialized and based on the evaluation of compliance history data and data submitted in the permit application (Section 1.2), it appears that the SUIT POTW does not have the potential to exceed the narrative water quality standards. However, the following narrative water quality standard will be included in the permit to ensure adequate and complete treatment at the POTW:

- The effluent shall be free from floating debris, oil, scum or other surface materials in quantities sufficient to harm existing beneficial uses of the receiving water.

**Section 7.0 – Permit Limitations**

The final effluent limitations included in the permit renewal for SUIT were based on a combination of Secondary Treatment Technology standards, found in 40 CFR Part 133 and water quality standards adopted by the SUIT, and AMMTOX modeling software for ammonia monthly limits. The effluent limitations are included in Table 9.

<b>Table 9 – Effluent Limitations</b>			
<b>Parameter</b>	<b>30-Day Average mg/L</b>	<b>7-Day Average mg/L</b>	<b>Daily Maximum mg/L</b>
Biochemical Oxygen Demand (BOD <sub>5</sub> ) <sup>(1)</sup>	30	45	N/A
Total Suspended Solids (TSS) <sup>(1)</sup>	30	45	N/A
Fecal Coliform, (#/100 mL)	200	N/A	N/A
E. coli	N/A		
pH	N/A	N/A	The pH of the discharge shall not be less than 6.5 or greater than 9.0 at any time.
Oil and Grease	N/A	N/A	10
Ammonia as N, mg/L, Monthly limits			
January	2.8	N/A	4.0
February	2.6	N/A	4.0
March	2.3	N/A	4.0
April	2.0	N/A	4.0
May	1.7	N/A	4.0
June	1.6	N/A	4.0

July	1.4	N/A	4.0
August	1.4	N/A	4.0
September	1.5	N/A	4.0
October	1.9	N/A	4.0
November	2.3	N/A	4.0
December	2.5	N/A	4.0

The effluent shall be free from floating debris, oil, scum or other surface materials in quantities sufficient to harm existing beneficial uses of the receiving water.

(1) Percentage Removal Requirements - Total Suspended Solids and Biochemical Oxygen Demand The 30-day average percent removal shall not be less than 85 percent.

7.1 – Justification of Permit Limitations

- The permit limits for BOD, TSS and pH are technology based and are found in the secondary treatment requirements found at 40 CFR Part 133.
- The permit limits for fecal coliform are based on tribal water quality standards for Rock Creek and the Los Pinos River found in the latest revision of the Southern Ute Water Quality Standards submitted to EPA. As per EPA policy, the Coliform limits are applied at the end of discharge to ensure protection of public health in the receiving waters designated for recreation.
- In addition to the limits for fecal Coliform, a monitoring requirement is included for E. Coli to gather data during the life of the next permit.
- Total Residual Chlorine is not included as a pollutant of concern because the SUIT POTW uses ultraviolet disinfection technology.

**Section 8.0 – Self-Monitoring Requirements**

Sampling and test procedures for pollutants listed in this part shall be in accordance with guidelines promulgated by the Administrator in 40 CFR part 136, as required in 40 CFR Part 133.104(a). The self-monitoring requirements are shown in Table 10.

<b>Table 10– Monitoring Requirements</b>		
<b>Parameter</b>	<b>Frequency</b>	<b>Sample Type</b>
Flow, MGD	Daily	Continuous

Biochemical Oxygen Demand (BOD <sub>5</sub> ), mg/L	Weekly	Composite
Total Suspended Solid (TSS), mg/L	Weekly	Composite
Fecal Coliform, No./100 mL	Monthly	Grab
<i>E. Coli</i> , No./100 mL	Monthly	Grab
Total Dissolved Solids (TDS), mg/L	Quarterly	Composite
Oil and Grease	Daily	Visual
Total Ammonia as N, mg/L	Monthly	Grab
pH, std units	Weekly	Field measurement

**Changes to Monitoring Requirements:**

1. A monthly monitoring requirement was added for E. Coli.
2. A quarterly monitoring requirement was added for total dissolved solids.
3. The monitoring frequency for Fecal Coliform was decreased from weekly to monthly because the SUIT POTW's compliance history showed levels well below the included permit limit of 200 mg/L as a 30 day average.
4. The ammonia monthly limits were developed using the AMMTOX model.

**Section 9.0 – Miscellaneous**

9.1 – Southern Ute Indian Tribe Land Jurisdiction

Indian tribal boundaries have come into question in recent litigation issues by EPA in Region 8. Therefore, any actions performed by EPA Region 8 including permitting activities require a concurrence from the Office of Region Council and Tribal Assistance Program to ensure the permit is appropriate and the Tribal sovereignty is protected. Based on a search of Google Earth, the latitude and longitude for the SUIT POTW discharge is 37°6'16.42"N by 107°37'51.31"W. The latitude and longitude of the discharge point from the SUIT POTW has been mapped and is included in the permit records.

9.2 – SUIT POTW Impacts to the Endangered Species Act

Section 7(a) of the Endangered Species Act requires federal agencies to insure that any actions authorized, funded, or carried out by an Agency are not likely to jeopardize the

continued existence of any federally-listed endangered or threatened species or adversely modify or destroy critical habitat of such species.

As discussed in Section 4.0 of this document, the SUIIT POTW discharges into Rock Creek. Rock Creek is a tributary of the Los Pinos River, located within the Upper Colorado River Basin. Table 11 lists the federally-listed endangered, threatened, proposed and candidate species for La Plata County, Colorado. The determinations of impact to the species listed in Table 11 are based on the following criteria:

1. This is the third permit re-issuance for the SUIIT POTW. There does not appear to be documented impacts to the endangered or threatened species listed in Table 11 from the effluent discharge from the SUIIT POTW.
2. With the exception of the Colorado pikeminnow and the Razorback sucker, the listed species do not appear to primarily reside in the riparian habitat. These species appear to have incidental contact with waterways during transport or consumption.
3. The Colorado pikeminnow and the Razorback sucker are listed as endangered due to water depletions of the Upper Colorado River and San Juan River Basins. The SUIIT POTW permit does not contribute to water depletions of these basins.
4. It does not appear that a critical habitat designation exists in La Plata County for the listed species.

<b>Table 11 – Federally-Listed Endangered, Threatened, Proposed and Candidate Species for La Plata County, CO</b>			
<b>Species</b>	<b>Scientific Name</b>	<b>Status</b>	<b>Impact</b>
Black-footed Ferret	<i>Mustela nigripes</i>	E	NLAA
Canada Lynx	<i>Lynx Canadensis</i>	T	NLAA
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	E *	NLAA
Knowlton Cactus	<i>Pediocactus knowltonii</i>	E	NLAA
Mexican Spotted Owl	<i>Strix occidentalis lucida</i>	T	NLAA
New Mexico Meadow Jumping Mouse	<i>Zapus hudsonius luteus</i>	C	NLAA
Razorback Sucker	<i>Xyrauchen texanus</i>	E *	NLAA
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	NLAA
Uncompahgre Fritillary Butterfly	<i>Boloria acrocynema</i>	E	NLAA
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	C	NLAA

\* Water Depletions in the Upper Colorado River and San Juan River Basins may affect the species and/or critical habitat in downstream reaches in other states.

Symbols/Acronyms:

T	Threatened
E	Endangered
P	Proposed
C	Candidate
NLAA	Not Likely to Adversely Affect
LAA	Likely to Adversely Affect

*Note: Information regarding the endangered or threatened species used to determine the impact of the SUIT POTW permit reissuance is maintained with the permit records.*

Correspondence was submitted to the U.S. Fish and Wildlife Service – Western Slope Field Office in Grand Junction, CO to gather concurrence with the determinations prior to the public notice period of the permit.

### 9.3 – SUIT POTW Impacts to the Historic Preservation Act

Section 106 of the National Historic Preservation Act (NHPA), 16 U.S.C. § 470(f) requires that federal agencies consider the effects of federal undertakings on historic properties. EPA has evaluated its planned reissuance of the NPDES permit for the SUIT POTW to assess this action’s potential effects on any listed or eligible historic properties or cultural resources. This correspondence is typically conducted with the Tribal Historic Preservation Office (THPO).

EPA does not anticipate any impacts on listed/eligible historic or cultural properties because this permit is a renewal and will not be associated with any new ground disturbance or changes to the volume or point of discharge. During the public comment period, EPA will notify the Tribal Historic Preservation Offices (THPOs) of the Southern Ute Tribes of the planned issuance of this NPDES permit and request their input on potential effects on historic properties and EPA’s preliminary determination in this regard.

Permit Drafted by Al Garcia, Environmental Scientist, NPDES Wastewater Unit, EPA Region 8,  
August 26, 2010

Permit Reviewed by Bruce Kent and Robert D. Shankland, P.E., SEE, NPDES Wastewater Unit,  
EPA Region 8