

STATE OF COLORADO

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Executive Director and Chief Medical Officer

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

December 18, 2013

John Niernberger, Production Manager
Ritchie Exploration Inc.
8100 East 22nd Street North, Suite 700
Wichita, KS 67226-2328

RE: Certification, Colorado Discharge Permit System – Produced Water Treatment Facilities
Permit Number COG840000 Certification Number: COG840016

Dear Mr. Niernberger;

Enclosed please find a copy of the permit certification for the Ann Allison #1 facility, which was issued under the Colorado Water Quality Control Act. **Please read the enclosed permit and certification as well as this letter, which outline the requirements under this permit, and the explanation of how certain limitations were developed.** The Division holds the permittee legally liable for all permit requirements.

The Water Quality Control Division (Division) has reviewed the existing permit certification and previous application submitted for the **Ann Allison #1** facility and determined that it qualifies for coverage under the CDPS General Permit for **Produced Water Treatment Facilities**. This certification is a conversion from the MINDI general permit certification COG600493. Note that the Division will not renew the MINDI general permit and therefore, this conversion is needed.

The following information describes how the limitations and permit requirements were developed.

Facility Information:

- **Industry Description**

The Ann Allison #1 facility (WWTF) treats wastewater associated with crude oil production operations. This existing facility treats approximately 0.0075 million gallons per day (MGD) of wastewater.

This facility may be subject to Colorado Department of Public Health and Environment Solid Waste regulations pertaining to solid waste sites and facilities and may need a Certificate of Designation. The facility may also be subject to permitting by the Air Pollution Control Division. The discharge of treated water to adjacent surface waters requires a discharge permit from the Water Quality Control Division (WQCD). Groundwater discharges are subject to regulation by the Colorado Oil and Gas Conservation Commission.

- **Treatment Facility Description**

The treatment process consists of oil/water separation via a heater treater, followed by a skim pit and a series of retention pits. The maximum anticipated flow rate to be discharged is estimated at 0.0075 MGD. To ensure the flow rate is not exceeded, the permitted flow will be set at a rate of 0.0076 MGD. The retention pits are unlined. It should be noted that a discharge to groundwater from an oil production operation is beyond the permitting jurisdiction of the Division. The Colorado Oil and Gas Conservation Commission (COGCC) regulates groundwater discharges from oil and gas operations. The COGCC is included in the distribution list for this permit certification.

The discharge from the Ann Allison #1 facility is to an intermittent drainage. Aerial images indicate the discharge may not immediately be contained in a drainage channel or conveyance. In the case that the discharge does not directly enter a drainage but rather is land applied, then the COGCC may have additional jurisdiction over the land application. Discharges

to state waters are subject to permitting by the WQCD and it appears the Ann Allison #1 facility discharge does enter state waters.

Operator Requirements may be found in Regulation No. 100, Water and Wastewater Facility Operator Certification Requirements.

A review of the Discharge Monitoring Reports (DMRs) for the previous permit term indicates compliance with limits for this facility with the exception of occasional late reporting.

- **Chemical Usage**

The application identified no chemicals which are added during or after the treatment process; therefore, no chemicals are approved for use.

Basis of Certification Limitations:

- **Stream Segment Information**

The discharge is to an unnamed intermittent stream tributary to Vega Creek, tributary to Sand Creek, tributary to Beaver Creek, tributary to the South Platte River located within Segment 02a of the Lower South Platte River Sub-basin, South Platte River Basin, found in the Classifications and Numeric Standards for the South Platte River Basin (Regulation No. 38; last effective update effective September 30, 2013). Segment COSPLS02a is designated Use Protected and is classified for the following beneficial uses: Recreation Class N, Aquatic Life – Class 2 Warm, and Agriculture without a full suite of standards to protect aquatic life but rather standards to protect Agricultural uses.

- **Technology Based Standards**

The limitations for total suspended solids (TSS) are from Regulation No. 62, which apply to all discharges that would be covered under this General Permit.

The limitations for oil and grease are in accordance with the federal effluent limit guideline developed by EPA for the Oil and Gas Extraction Industry for the protection of Agricultural and Wildlife Water Use in 40 CFR 435 Subpart E. Note, in accordance with Regulation No. 62 at 62.4(2), this federal limit overrides the Colorado limit.

- **Water Quality Standards**

Effluent limitations for metals and inorganics are based on the water quality standards specific to stream segment COSPLS02a. Metals standards are based on the agricultural uses of the segment.

The discharge from the Ann Allison #1 facility enters an unnamed intermittent drainage tributary to Vega Creek, then Sand Creek then Beaver Creek and ultimately to the South Platte River approximately 42 miles downstream. Water diverted from Vega Creek is used for livestock watering and irrigation; therefore, agricultural standards will be applied.

Note that there are no known drinking water intakes in the vicinity of the discharge. Public and private well records did not indicate any groundwater under the influence of surface water domestic wells in a 15 mile distance downstream; therefore, water supply standards do not apply.

For organic parameters, the aquatic life limits from Regulation No. 31 will be applied.

Temperature limitations will not be applied as the temperature of the discharge is unlikely to affect downstream uses.

Effluent limits for certification under this general permit are set at the water quality standard without allowances for dilution.

Note that the previous General Permit this facility was certified under the “MINDI” or minimal discharge general permit is being phased out. That permit had very minimal requirements. The Produced Water general permit has more stringent requirements when compared to the MINDI permit which results in new monitoring requirements and effluent limits for the facility. A compliance schedule has been included to provide time to come into compliance with the new limits. A compliance schedule is unnecessary for the BTEX parameters previously limited in the existing permit.

- **Antidegradation**

As the stream segment is designated Use Protected, an antidegradation evaluation does not apply.

- **Total Maximum Daily Loads (TMDLs)**

Stream Segment COSPLS02a is not on the State's 303(d) list of impaired waters; therefore, TMDLs do not apply.

- **Narrative Standards**

Section 31.11(1)(a)(iv) of The Basic Standards and Methodologies for Surface Waters (Regulation No. 31) includes the narrative standard that State surface waters shall be free of substances that are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life.

- **Agricultural Protection**

Metals limitations are protective of the agricultural uses of the water including livestock watering and irrigation.

The interpretation of the conditions "no harm to plants" and "no harm to the beneficial uses", and how they were to be applied in permits were contemplated by the Division as part of an Agricultural Work Group, and culminated in the most recent policy entitled Implementing Narrative Standards in Discharge Permits for the Protection of Irrigated Crops (hereafter the Narrative Standards policy).

The Heagney Irrigation System Ditch diverts water from Vega Creek 7 miles below the Ann Allison #1 discharge; however, communication with the Water Commissioner indicates the ditch water is not currently used for irrigation but it used for livestock watering. The next downstream ditch diversion, the Bushman Ditch, is an additional 3 miles below the Heagney Ditch. At this location 10 miles below the discharge and further downstream, there is likely sufficient dilution to not warrant EC and SAR limits in the permit. The Narrative Standards Policy will not be applied in this permit term.

A limitation for TDS based on protection of livestock watering of 3500 mg/L will be included.

- **Reasonable Potential**

Data needs to be gathered in order to determine reasonable potential for parameters to be present in the discharge. Parameters requiring data to make a definitive evaluation will have a Report only requirement. Parameters known to be present in the discharge at will be limited throughout this permit term.

- **Whole Effluent Toxicity**

This discharge may contain metals and/or salts at concentrations that may be toxic to aquatic life as well as organics found in the treated water. Chronic WET testing will be required. The IWC for this permit is 100%, which represents a wastewater concentration of 100 % effluent to 0% receiving stream. This IWC correlates to chronic WET testing.

General Information:

- **Permit Action Fees** - The Annual Fee for this certification is \$2150 [Category 12, Subcategory 2 for Manufacturing and Other Industry per CRS 25-8-502] and is invoiced every July. Do Not Pay This Now as an invoice will be **prorated** and sent to the legal contact shortly.
- **Changes to the Certification** – Any changes that need to be made to the certification page – changes in outfalls, monitoring requirements, etc., must be submitted using the "Permit and Certification Modification form" available on our website: coloradowaterpermits.com, and signed by the legal contact.
- **Discharge Monitoring Report (DMR)** - forms will be mailed out within the next month. Reports must be submitted **monthly** as long as the certification is in effect. The permittee shall provide the Division with any additional monitoring data on the permitted discharge collected for entities other than the Division. This will be supplied to the Division within 48 hours of the receipt of the data by the permittee. If forms have not been received, please contact the Division at 303-692-3517.
- **Sampling Requirements** - Sampling shall occur at a point after treatment, or after the implementation of any Best Management Practices (BMPs). If BMPs or treatment are not implemented, sampling shall occur where the discharge leaves control of the permittee, and prior to entering the receiving stream or prior to discharge to land. Samples must be representative of what is entering the receiving stream.
- **Termination requirements** - For termination of permit coverage, the permittee must initiate this by sending the "CDPS Permits and Authorization Termination Form." This form is also available on our web site and must be signed by the legal contact.

- **Certification Records Information** - The following information is what the Division records show for this certification. For any changes to Contacts – Legal, Local, Billing, or DMR – a “Notice of Change of Contacts form” must be submitted to the Division. This form is also available on our web site and must be signed by the legal contact.

Facility: Ann Allison #1

Washington County

Industrial Activities: Oil and Gas Extraction

SIC Code: 1300

Legal Contact *Receives all legal documentation, pertaining to the permit certification. [including invoice; is contacted for any questions relating to the facility; and receives DMRs.]*

John Niernberger, Production Manager

Phone number: 316-691-9500

Ritchie Exploration Inc.

Email: jniernberger@ritchie-exp.com

8100 East 22nd Street North, Suite 700

Wichita, KS 67226-2328

Facility Contact *Contacted for general inquiries regarding the facility*

Gary Rowe, Operator

Phone number: 620-214-0330

Email:

Billing Contact

Same as Legal

Phone number:

Email:

DMR Contact

Same as Legal

Phone number:

Email:

If you have any other questions please contact me at 303-692-6318.

Sincerely,



Susan Applegate,

Assessment Based Permits Unit

WATER QUALITY CONTROL DIVISION

Enclosures: Certification page; General Permit

xc: Regional Council of Government
Washington County, Local County Health Department
John Axelson, Colorado Oil and Gas Conservation Commission
Field Services Section, WQCD
Permit File: COG840016