



STATE OF  
COLORADO

EnviroScan - DNR, OGCC <dnr\_ogcc.enviroscan@state.co.us>

DOC 2142379

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## Rice Lease Remediation Projects #8461 & 8517

1 message

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**Axelson - DNR, John** <john.axelson@state.co.us>

Fri, Oct 31, 2014 at 11:04 AM

To: "Teff, John" <johnt@cmproductionllc.com>

Cc: Matt Lepore - DNR <matt.lepore@state.co.us>, Greg Deranleau - DNR <greg.deranleau@state.co.us>, Jeremy Ferrin - DNR <jeremy.ferrin@state.co.us>, James Hix <jhix@olssonassociates.com>, Rob Young - DNR <rob.young@state.co.us>, OGCC EnviroScan - DNR <OGCC.EnviroScan@state.co.us>

Mr. Teff,

Please see the attached letter in response to the recent reports submitted by Olsson & Associates in regard to the subject remediation projects. The original will be sent to you via USPS.

Please give me a call if you have any questions.

Thank you,

John E. Axelson, P.G.

East Environmental Supervisor



P 303.894.2100 x5115 | F 303.894.2109 | C 303-916-0527

1120 Lincoln Street, Suite 801, Denver, CO 80203

[john.axelson@state.co.us](mailto:john.axelson@state.co.us) | [www.colorado.gov/cogcc](http://www.colorado.gov/cogcc)

Cc. NOAV #200399090 - Correspondence

Rem #s 8461, 8517 - Correspondence

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**CM Rice Letter Rem 8517\_8461 10-30-14.pdf**  
6619K



## COLORADO

Oil & Gas Conservation  
Commission

Department of Natural Resources

1120 Lincoln Street, Suite 801  
Denver, CO 80203

October 30, 2014

Mr. John Teff  
CM Production LLC  
390 Union Blvd., Suite 620  
Lakewood, CO 80228

Re: Rice Production Facility (ID #436124), Logan County  
Remediation Project #8517 – Oily Waste Excavation  
Remediation Project #8461 – Sensitive Area Determination

Mr. Teff,

The Colorado Oil & Gas Conservation Commission (COGCC) is providing this letter in response to two reports dated September 2014 and October 7, 2014, prepared by Olsson Associates, Inc. (Olsson) on behalf of CM Production (CM) to document remedial activities and sensitive area determination at the Rice Production Facility in Logan County. As you are aware, this work was performed in response to corrective actions required by a Notice of Alleged Violation (NOAV Document #200399090) issued to CM on March 18, 2014. The NOAV required several corrective actions including remediation of oily waste that was placed and buried on location as well as a sensitive area determination to verify that the three unlined production pits at the location are not threatening or causing impact to groundwater or surface water.

### Remediation Project #8517 – Oily Waste Excavation

Based on review of the information provided, COGCC agrees that soil samples collected from the excavation where oily waste was buried confirm that the remaining soils are in compliance with Table 910-1 standards. As a result, COGCC approves backfilling the excavation with clean fill and performing surface reclamation of the disturbed area. The October 7, 2014, report indicated that the oily waste would be properly disposed off site. The sample of the overburden material (composite sample, TBE-CO) also contained diesel range organics (DRO) in excess of the Table 910-1 standard. As a result, please properly dispose all impacted material including the overburden and provide COGCC with the disposal documentation required by Rule 907.b.(2) by November 30, 2014. Upon receipt of the disposal documentation, COGCC will close remediation project #8517.



Mr. John Teff  
CM Production LLC  
Rice Production Facility, Logan County  
October 30, 2014

Remediation Project #8461 – Sensitive Area Determination

In the conclusions of the October 7, 2014, report, Olsson concluded that the current operations of the produced water pits are not the source of impact to soils in the drainages adjacent to the east side of the produced water pits. Furthermore, Olsson concluded that, “..... these impacts are related to historic produced water releases, allowed by the COGCC, by previous operators of the field.” Based on this information, Olsson concluded that no further action is warranted in regard to impacted soils within the drainage.

The purpose of the sensitive area determination requested by COGCC was to determine if operation of the unlined produced water pits presented a threat or was causing impact to waters of the state. The NOAV corrective actions required that CM perform the sensitive area determination to characterize site-specific groundwater conditions and any impacts to surface water.

Based on the sampling, analysis and investigation performed to date, COGCC agrees that there is no apparent seepage from the base of the southeast produced water pit at PZ-1 at the time of installation or when it was checked again in September 2014. The analytical results from the samples of produced water indicate elevated TDS ranging from 11,300 mg/L to 12,400 mg/L, which is significantly higher than typical shallow groundwater or surface water concentrations. The sampling and analysis performed by COGCC and Olsson indicates impacts to adjacent soils in the drainage and elevated TDS in the surface water samples collected from the drainage. No upstream sample of surface water in the drainage was collected during the sensitive area determination to establish background concentrations.

Based on the investigation done to date there has been no information collected to verify that there is not seepage from the northern-most produced water pit into the adjacent drainage. In addition, there has been no site specific groundwater determination made as required by the NOAV and as detailed in an email from COGCC Environmental Protection Specialist (EPS), John Noto to Olsson with a copy to Mr. Teff on June 5, 2014 (Attachment 1). In the email, Mr. Noto specifically required the installation of a temporary well or boring to log subsurface lithologies and to measure the depth to shallow groundwater. Although Olsson installed PZ-1 to a reported depth of 10-feet, it was insufficient to determine if shallow groundwater is present underlying the site or if there are confining barriers that would prevent migration of produced water from the unlined pits to shallow groundwater.



Mr. John Teff  
CM Production LLC  
Rice Production Facility, Logan County  
October 30, 2014

In the October 7, 2014, report, Olsson asserted that COGCC had allowed historic discharges of produced water from the pits on location that has resulted in impacts to the adjacent drainage. Based on file review of the associated pit permit for Pit Facility ID #116281, COGCC strongly disagrees with this assertion. The Application For Permit To Use Earthen Pit at the location was received by COGCC October 29, 1971 (Attachment 2). The pit permit was conditionally approved on March 22, 1974. The permit was conditioned with a memo from G.C. Hazenbush, in which he performed an evaluation of the subject pit on behalf of COGCC on January 28, 1974. Based on the presence of a well developed fresh water sand from 134-feet to 190-feet in a nearby Sinclair Oil Well known as the Hiscock No. 2, Mr. Hazenbush stated in the memo that, "It is recommended that the pit be lined or sealed and the produced water disposed of by reinjection as soon as possible."

In addition, on March 21, 1972, the Commission issued the findings of a hearing in Cause No. 1, Order No. R-11, specific to lands in northern Logan County where the Rice lease is located. Even at this early date, the Commission was acting to protect shallow groundwater resources found in the alluvium in northern Logan County. Operators at the time were required to comply with the appropriate rules regarding pit design and location. If a pit was not lined, the applicant was required to supply substantial evidence to the Director that the quality of the produced water was substantially the equivalent of the underlying aquifer. In addition, the applicant had to supply substantial evidence that seepage from an unlined pit would not reach any underlying aquifer or other waters of the State if the water quality of the produced water was not equivalent to that of the underlying aquifer.

Based on this information, it is evident that past operators did not comply with the intent of the conditional approval of the pit permit for Facility ID #116281 and did not comply with Commission Order No. R-11. CM has continued to operate the unlined produced water pits out of compliance since it became the operator of record on October 1, 2010. In addition, COGCC does not have authority to authorize discharges of produced water to surface waters of the state as asserted by Olsson in the October 7, 2014, report. The Colorado Department of Public Health & Environment has the authority to issue such discharge permits (as delegated by EPA) and no such permit is on record for this facility.

Based on the information provided to date, COGCC has determined that the Rice Production Facility is located in a sensitive area. Operation of the three unlined production pits has caused impact to the adjacent drainage, which by definition constitutes waters of the state. Operation of the three unlined production pits is an ongoing threat to groundwater.



Mr. John Teff  
CM Production LLC  
Rice Production Facility, Logan County  
October 30, 2014

Based on the sensitive area determination finding, COGCC requires that CM perform the following corrective actions:

1. Immediately discontinue use of the three unlined produced water pits at the Rice Production Facility;
2. By November 30, 2014, submit a Form 27 for appropriate closure of the three unlined produced water pits.
3. With the Form 27 submittal, include a surface reclamation plan to properly reclaim all disturbed areas from pit closure and impacted areas documented during the recent site assessments including the area south of the southwest produced water pit and the adjacent drainage;
4. Stabilize all disturbed locations to stop ongoing soil erosion at the location. Maintain stormwater controls and control weeds throughout the pit closure and surface reclamation project;
5. All work shall be completed no later than June 30, 2015.

CM may continue to produce the Rice wells and properly dispose of the produced water in accordance with Rule 907.c.(2), A, C, E or F. If CM chooses, it can submit a Pit Permit, Form 15 for a properly lined evaporation pit in accordance with 907.c.(2), B. If approved, CM could use a properly constructed, lined evaporation pit for disposal of produced water at the Rice Production Facility in addition to the other options provided by Rule 907.c.

If you have any questions, please contact me via email at [John.Axelson@state.co.us](mailto:John.Axelson@state.co.us) or by phone at 303-894-2100, ext. 5115.

Sincerely,



John Axelson, P.G.  
East Environmental Supervisor

Cc. Matt Lepore – COGCC Director  
Greg Deranleau – COGCC Environmental Manager  
Jeremy Ferrin – COGCC Enforcement Officer  
James Hix, PG – Olsson Associates, Inc.  
File – NOAV Doc #200399090



Mr. John Teff  
CM Production LLC  
Rice Production Facility, Logan County  
October 30, 2014

**Attachment 1**





STATE OF  
COLORADO

mailto:john.noto@state.co.us

## Fwd: Form 27 - Sensitive Area Determination CM Production LLC, Rice #2 Well and Production Facility, API#05-121-07216, NOAV#200399090

**Noto - DNR, John** <john.noto@state.co.us>

Thu, Jun 5, 2014 at 8:18 AM

To: James Hix <jhix@olssonassociates.com>

Cc: "Teff, John" <johnt@cmproductionllc.com>, Jeremy Ferrin - DNR <jeremy.ferrin@state.co.us>, John Axelson - DNR <john.axelson@state.co.us>, "Kirk.mueller@dgslaw.com" <Kirk.mueller@dgslaw.com>, "Roger Freeman (roger.freeman@dgslaw.com) (roger.freeman@dgslaw.com)" <roger.freeman@dgslaw.com>, OGCC EnviroScan - DNR <OGCC.EnviroScan@state.co.us>, Greg Deranleau - DNR <greg.deranleau@state.co.us>

### **CM Production LLC, Rice #2 Well and Production Facility, API#05-121-07216, NOAV#200399090, Remediation #8461, Document #2141171**

James,

COGCC has assigned Remediation #8461 and Document #2141171 to the Form 27 for the CM Production Rice Production Facility. Comments and Conditions of Approval for the Form 27 are detailed below. A copy of the signed Form 27 is also attached for your records.

The COGCC inspection performed on January 14, 2014 (Document # 670600199) included sampling and analysis of soil and sediment collected adjacent to the facility. The findings from this limited assessment revealed apparent impacts from produced water. Based on these findings and other site conditions, COGCC prepared a Notice of Alleged Violation (NOAV), document #200399090, which was issued to CM Production on March 18, 2014. Specific abatement or corrective actions were listed on the NOAV with corrective action dates.

A Form 27, Site Investigation and Remediation Workplan was required by April 11, 2014 either for pit closure or for planning a Sensitive Area Determination if CM planned to continue using the pits. Olsson Associates submitted a Site Assessment Determination Report to COGCC in April 2014. COGCC received a Form 27 on May 27, 2014 for a Sensitive Area Determination and remediation work. The implementation schedule on the Form 27 was not filled out.

The Sensitive Area Determination Assessment Report partially fulfilled the Sensitive Area Determination in accordance with Rules 901.c. and 901.e. The Assessment Report included site specific information about the background and operational history. The Assessment Report also included a description of the regional geology, hydrogeology, and an evaluation of surface water drainages via topographic maps. However, the Assessment Report did not include site-specific groundwater conditions or characterization of potential/actual impacts to the nearby intermittent streams. The Assessment Report did not include a sampling/analysis plan to evaluate potential impacts to soil, groundwater and surface water.

The following information is necessary for completion of the Sensitive Area Determination in accordance with Rules 901.c. and 901.e. :

1. Install a temporary well or boring to log subsurface lithologies and to measure the depth to shallow groundwater or to verify that shallow groundwater is not present. Submit a map with the proposed

location to COGCC and complete the boring/well no later than July 3, 2014.

2. If shallow groundwater is present or if pathways to deeper groundwater are indicated, submit a plan with proposed groundwater monitoring locations, sampling, and analysis plan. The investigation shall be performed and results reported no later than 60 days after completion of the initial shallow groundwater determination.

3. Collect and analyze samples from the intermittent drainage east of the production facility to map the extent of the produced water impacts identified by COGCC and documented in Inspection #670600199. Complete the sampling/analysis by July 3, 2014.

The samples collected east of and adjacent to produced water pit bank by COGCC had elevated SAR and pH that may be from prior pit overflows or pit seepage. Determine if the produced water pits are actively seeping into the intermittent drainage to the east. Complete this study and report the findings to COGCC by July 3, 2014. If active seeps are occurring, provide a plan to COGCC for halting any seepage into the drainage. Also implement procedures to maintain a minimum of 2-feet of freeboard in the produced water pits in accordance with Rule 902.b.

Remediate/reclaim the impacted area south of the south produced water pit to establish uniform vegetative cover that reflects at least 80% of pre-disturbance levels excluding noxious weeds. Implement best management practices to prevent erosion and control weeds during reclamation. Begin remediation by July 7, 2014.

Please call or email if you have questions or concerns.

Thank you,

John Noto

Cc: Remediation #8461

[Quoted text hidden]



**Form 27 Sensitive Area Determination FNL Binder 052714 signed.pdf**  
270K

Mr. John Teff  
CM Production LLC  
Rice Production Facility, Logan County  
October 30, 2014

**Attachment 2**





STATE OF COLORADO  
OIL AND GAS CONSERVATION COMMISSION  
Department of Natural Resources

RECEIVED  
OCT 29 1971

APPLICATION FOR PERMIT TO USE EARTHEN PIT

COLORADO OIL & GAS CONSERVATION COMMISSION

1. CHECK ONE: NEW PIT  EXISTING PIT  TREATMENT FACILITY  OTHER

2. NAME OF OPERATOR: Monahan ~~Union Texas Petroleum~~ MONAHAN Cliff

3. ADDRESS OF OPERATOR: 1010 Lincoln Tower Building, Denver, Colorado 80203 PHONE NO. 534-8221

4. LEASE NAME: Rice 5. PRODUCING FORMATION: "D" Sand 6. GROUND ELEVATION: 4525

7. LOCATION (Report location clearly to the nearest 10 acres): NW SW NW Section 33-T12N-R54W 8. COUNTY: Logan 9. STATE: Colorado

10. SIZE OF PIT: LENGTH 150 FT. WIDTH 90 FT. DEPTH 6 FT.

11. CAPACITY: 14,426 BBLS. 12. ESTIMATED INFLOW: 303 BIS/DAY

13. DISPOSAL OF PIT CONTENT: See below HAULED  DISPOSAL WELL  EVAPORATION

14. MAXIMUM FLUID LEVEL ABOVE AVG. GROUND LEVEL: 3 FT.

15. DRAINAGE DISTANCE IN FEET TO CLOSEST FRESH WATER POND, STREAM OR LAKE: None in area FT.

16. SUBSOIL TYPE: See attached geologic log

17. TYPE OF SEALING MATERIAL (Including specifications and Method of Application): None

DVR	
FIP	
HICM	<input checked="" type="checkbox"/>
JAM	<input checked="" type="checkbox"/>
JHD	

18. ADDITIONAL INFORMATION (By attachment include detailed plan of operation, chemical analysis of produced water, necessary maps, logs and other information as may be required by Rules 325 and 326 of the Rules and Regulations of the Oil and Gas Conservation Commission.)

Final separation system consists of 400 barrel skimmer tank. All produced water passes through this tank prior to dumping into pits. Water discharges from pits into dry stream bed on lease.

19. I HEREBY CERTIFY THAT THE FOREGOING IS TRUE AND CORRECT

SIGNED: [Signature] TITLE: Production Engineer DATE: 10/25/71

THIS SPACE FOR COMMISSION USE

APPROVED BY: [Signature] TITLE: DIRECTOR DATE: MAR 28 1974

CONDITIONS OF APPROVAL, IF ANY:

Doc # 582014



1110281

MEMORANDUM  
\*\*\*\*\*

TO: D. V. Rogers

FROM: G. C. Hazenbush

SUBJECT: Union Texas Petroleum Cliff Field  
Retaining pit, Rice Lease, NW SW NW 33-12N-54W, Logan County

On January 28, 1974, an office evaluation was made of this pit. The 150' X 90' X 6' pit handles an estimated inflow of 303 bbls. per day of water from "D" sand wells. The water runs 9,776 ppm in TDS. The water from the pit is discharged into a dry stream bed on the lease.

The pit is in the White River Group which crops out at the surface. The electric log of the nearest well, Sinclair Oil & Gas Company - Hiscock No. 2, a  $\frac{1}{4}$  of a mile to the west in SE NE 32-12N-54W, shows the base of the White River at about 190' below the surface, and a well developed fresh water sand from 134' to 190'.

It is recommended that the pit be lined or sealed and the produced water disposed of by reinjection as soon as possible. Pit should be kept free of oil.

*9/24/74, GCH. 1-skim tank; Pit)- 150' x 30 at north end + 65' at S. end., Unlin.  
uncovered, fraced. 5% oil (2 1/2% each end), 95% clean water*