

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144
June 1, 2004

For drilling and production facilities, submit to
appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☐

Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

OCT 29 2007

OCD-ARTESIA

Operator: Nadel & Gussman Permian, LLC

Telephone: 432-682-4429

e-mail address: kemm@naguss.com

Address: 601 N. Marienfeld, Suite 508, Midland, Texas 79701

Facility or well name: **Cronos Fee No. 1** API #: **30-015-35569 U/L E Sec 20 T23S R28E, 1950' FNL 660' FWL**

County: **Eddy** Latitude **N** Longitude **W** NAD: 1927 ☐ 1983 ☐

Surface Owner: Federal State Private X Indian ☐

Pit

Type: Drilling ☒ Production ☐ Disposal ☐

Workover ☐ Emergency ☐

Lined ☒ Unlined ☐

Liner type: Synthetic ☒ Thickness: **20ml HDPE liner** Clay ☐

Pit Volume: **1500 bbl. Approximately**

Below-grade tank **N/A**

Volume: **N/A** bbl Type of fluid: **N/A**

Construction material: **N/A**

Double-walled, with leak detection? ☐ If not, explain why not.

Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of groundwater.) **Groundwater levels in this area show <50'. However, NGP procured soil samples for background data which indicate 20,000 to 30,000 ppm of soil chlorides naturally occurring in the area. NGP has also closed two other pits in this area and found groundwater not to be a problem with the solidification process. Groundwater was never encountered during burial.**

Less than 50 feet

(20 points) 20 pts.

50 feet or more, but less than 100 feet

(10 points)

100 feet or more

(0 points)

Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)

Yes

(20 points)

No ☒

(0 points) 0 pts.

Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)

Less than 200 feet

(20 points). 0 pts.

200 feet or more, but less than 1000 feet

(10 points).

1000 feet or more

(0 points)

Ranking Score (Total Points)

20 pts.

If this is a pit closure: (1) Attach a diagram of the facility showing the pit's relationship to other equipment and tanks. **Digital Photos shall be submitted for before and after remediation activity in closure report.** (2) Indicate disposal location: **Solidification onsite.** offsite If offsite, name of facility: (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☒ Yes ☐ If yes, show depth below ground surface _ ft. and attach sample results (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: **Please refer to the attached letter for detailed "Closure Plan" information.**

Solidification

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines X, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Date: **26 October 2007**

Printed Name/Title: **Kem McCready, Operation Manager**

Signature

Kem McCready

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

NOTIFY OCD 24 HOURS PRIOR to beginning closure and 24 HOURS PRIOR to obtaining samples. Samples are to be obtained from pit area and analyses submitted to OCD prior to back-filling.

Signature

Signed By

Mike Brannon

Date:

OCT 29 2007

- If burial trench is to be constructed in pit area, samples are to be obtained and analyses submitted to OCD **PRIOR** to lining trench.

Mr. Kem McCready
Operations Manager
NADEL AND GUSSMAN PERMIAN, LLC
601 N. Marienfeld
Suite 508
Midland, TX 79701

26 October 2007

Mr. Mike Bratcher
OIL CONSERVATION DIVISION
1301 West Grand Avenue
Artesia, NM 88210

Re: Cronos Fee No. 1 Pit Closure Documents

Dear Mr. Bratcher:

Pursuant to the State of New Mexico regulatory requirements for permanent closure of drilling pits, enclosed herewith is the completed Form C-144 and additional information constituting the "Closure Plan" for closure of the Nadel and Gussman Permian, LLC, hereinafter "NGP", Cronos Fee No. 1 drilling pit (API No. 30-015-35569) located in U/L E S20 T23S, R28E, 1950' FNL, 660' FWL of Eddy County, New Mexico.

INTRODUCTION

Remediation of the NGP Cronos Fee No. 1, hereinafter "Cronos", drilling pit is targeted to begin 30 October 2007 with completion expected by 15 November 2007, permitting weather and the occurrence of unexpected conditions not within the Operator's control do not create delays or exacerbate the proposed schedule in any way. NGP intends to maintain its commitment to environmental health and safety and fully comply with the Regulatory Performa of the State of New Mexico, OCD regarding this disposal action and permanent closure of the Cronos drilling pit.

Potential, temporary contamination from the Cronos drilling pit site, should any exist, resulted solely from oil and gas production activities. Potential contaminants of concern are typical mid to high-level concentrations of brines, typical polymers (such as xanthium gum and starch) and in general, drilling mud and fluids remaining upon completion of said drilling operations.

Area land use is primarily ranching with domestic pasturage and oil and gas production activities. The NGP, Cronos Fee No. 1 drilling pit is located in an area wherein groundwater depth to surface demonstrates an average depth of less than 50 feet. However NGP has drilled two other wells in the area and closed their pits. In doing so Trace Analysis has provided analytical data verifying extremely high sodium chlorides naturally occurring in the soils which is also supported by the local vegetation and lack thereof. Consequently for this location, background samples were taken of

the soils which were found to range between 20,000 and 30,000 ppm. This analytical data is attached for your reference.

NGP has consequently elected to solidify the drilling pit contents due to the depth of the groundwater table. The disposal pit, however, will not be placed near the more shallow water area but rather in the known deeper area within the existing pit to ensure compliant environmental performance and reduction of liability in this potentially designated water sensitive area as defined by New Mexico, OCD Rule 50 regulations.

Mode of Closure: Insitu Solidification Burial

NGP shall use the Certified Kiln Dust (CKD) solidification process, depositing the material into a 20ml HDPE lined pit on location capped with a 20 ml HDPE liner. The process utilized in this disposal method shall be as described above with the exception of the solidification itself prior to initiation of the insitu burial action.

The CKD solidification procedure shall be as follows:

Two trenches shall be established, one for encapsulation and one to function as a CKD work pit constructed within the original reserve pit immediately adjacent to the existing two pits.

1. Cuttings will be mixed with a track hoe and the contents lifted and dropped in a stirring fashion. Once the Certified Kiln Dust (CKD) and the pit contents are sufficiently combined solidification will occur.
2. The CKD ratio to measured pit contents on the average shall be 1 yard drill fines to 240 pounds CKD or 1K cy to 240 pounds of drill fines. Should the fines be too dry fresh water will be introduced to initiate the combining process.
3. To ensure proper QA/QC, the CKD is precisely weighed before delivery and pit size is set for a predetermined volume of pit contents.

CLOSURE PLAN

Prior to commencement of closure activities, NGP contractor will contact One-Call for line spot clearance confirming the State of New Mexico, OCD is in agreement with the proposed "Closure Plan" for removal of approximately 1,500 bbl. of liquid followed by the removal of all fines (drill cuttings) assuming these fines have sufficiently dried allowing for maneuverability of heavy equipment in the pit area, enabling final closure.

Environmental health and safety regulations mandate control of pit volumes at all times. Thus, the liquid material was pumped off as needed and properly disposed of during active drilling operations. Water accumulated since this time is either due to liquid material not completely hauled from actual drilling operations or rain. This water has subsequently been hauled from the location and properly disposed of pursuant to OCD Regulatory Performance.

- ❖ Contractor shall mobilize to Cronos Fee No. 1 drilling pit site located east of Carlsbad, New Mexico (see Form C-144). Personnel necessary to provide for the initiation and completion of said remediation activities presented above shall be engaged as is appropriate to the mandated exercise.
- ❖ No remediation activity shall occur off the existing pad or already disturbed areas as authorized by the APD and approved Best Management Practices (BMP's). NGP shall consider weather conditions and necessary equipment positioning to provide a clear area for adequate staging for site control and safety compliance, ensuring operations shall be compliant with New Mexico, OCD Regulatory Performa.
- ❖ The Cronos Fee No. 1 drilling pit is currently lined with a 20ml HDPE liner, which shall be removed by heavy equipment and disposed of with the solidified drilling fines pursuant to New Mexico, OCD requirements.
- ❖ Prior to initiation of backfilling, the Operator shall take appropriate samples of the pit area to ensure compliance with OCD Standards for remediation of possible TPH, ND for BTEX and levels of less than 250ppm of chlorides. However if levels at the bottom of the drilling pit test too high, a background set of samples shall be obtained for testing from the immediate vicinity and compared to those of the pit bottom. Simultaneously, more soil shall be removed from the "hot spots". Once completed, new data acquisition shall occur and sample results determine whether or not compliance has been reached in order to begin backfilling. No backfilling shall begin without authorization by the State of New Mexico, OCD.
- ❖ Backfilling of the Cronos Fee No. 1 drilling pit shall be commensurate with existing topography and terrain relief features (contouring) so as to return it to its "near-as" previous condition, including a contour for prevention of water impoundment.
- ❖ The "Closure Plan" shall include a final report providing lab analysis of the backfill material, digital project photos and evidentiary narrative to support the completed disposition of the reclaimed Cronos Fee No. 1 drilling pit site.

Should you have questions, please call 432-682-4429 (office) or 432-425-6347 (cell).

Sincerely,


Kem McCready
Operations Manager

cc: State of New Mexico, OCD, Form C-144

Summary Report

Kem McCready
Nadel & Gussman Permian LLC
601 N. Marienfeld
Suite 508
Midland, TX, 79701

Report Date: May 30, 2007

Work Order: 7052902



Project Name: Caronos Fee No. 1 Background Data

30-015-35569

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
125610	Quad No. 1 Comp	soil	2007-05-24	17:00	2007-05-26
125611	Quad No. 2 Comp	soil	2007-05-24	17:30	2007-05-26
125612	Quad No. 3 Comp	soil	2007-05-24	17:50	2007-05-26
125613	Quad No. 4 Comp	soil	2007-05-24	18:00	2007-05-26
125614	Well Head Area @ 20'	soil	2007-05-24	18:25	2007-05-26
125615	Area Comp @ 60' X 600'	soil	2007-05-24	18:45	2007-05-26

Sample: 125610 - Quad No. 1 Comp

Param	Flag	Result	Units	RL
Chloride		30400	mg/Kg	5.00

Sample: 125611 - Quad No. 2 Comp

Param	Flag	Result	Units	RL
Chloride		23800	mg/Kg	5.00

Sample: 125612 - Quad No. 3 Comp

Param	Flag	Result	Units	RL
Chloride		23800	mg/Kg	5.00

Sample: 125613 - Quad No. 4 Comp

Param	Flag	Result	Units	RL
Chloride		30300	mg/Kg	5.00

Sample: 125614 - Well Head Area @ 20'

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

This is only a summary. Please, refer to the complete report package for quality control data.

Param	Flag	Result	Units	RL
Chloride		19000	mg/Kg	5.00

Sample: 125615 - Area Comp @ 60' X 600'

Param	Flag	Result	Units	RL
Chloride		21900	mg/Kg	5.00



6731 Aberdeen Avenue, Suite 9 Midland, Texas 79701 800•376•1496 805•794•1296 FAX 805•794•1296
260 East S. 3rd Street, Suite 5 El Paso, Texas 79902 800•398•3443 915•585•3443 FAX 915•585•4944
4001 Basin Street, Suite A1 Midland, Texas 79703 432•689•6307 FAX 432•689•6310
801 E. Hill Street, Suite 110 Fort Worth, Texas 76102 817•211•5250
E-Mail: info@traceanalysis.com

Analytical and Quality Control Report

Kem McCready
Nadel & Gussman Permian LLC
601 N. Marienfeld
Suite 508
Midland, TX, 79701

Report Date: May 30, 2007

Work Order: 7052902



Project Name: Caronos Fee No. 1 Background Data
Project Number: Caronos Fee No. 1 Background Data

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
125610	Quad No. 1 Comp	soil	2007-05-24	17:00	2007-05-26
125611	Quad No. 2 Comp	soil	2007-05-24	17:30	2007-05-26
125612	Quad No. 3 Comp	soil	2007-05-24	17:50	2007-05-26
125613	Quad No. 4 Comp	soil	2007-05-24	18:00	2007-05-26
125614	Well Head Area @ 20'	soil	2007-05-24	18:25	2007-05-26
125615	Area Comp @ 60' X 600'	soil	2007-05-24	18:45	2007-05-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 5 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Standard Flags

B - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project Caronos Fee No. 1 Background Data were received by TraceAnalysis, Inc. on 2007-05-26 and assigned to work order 7052902. Samples for work order 7052902 were received intact at a temperature of 4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method
Chloride (Titration)	SM 4500-Cl B

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 7052902 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 125610 - Quad No. 1 Comp

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37628	Date Analyzed:	2007-05-29	Analyzed By:	JS
Prep Batch:	32603	Sample Preparation:	2007-05-29	Prepared By:	JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		30400	mg/Kg	200	5.00

Sample: 125611 - Quad No. 2 Comp

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37628	Date Analyzed:	2007-05-29	Analyzed By:	JS
Prep Batch:	32603	Sample Preparation:	2007-05-29	Prepared By:	JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		23800	mg/Kg	200	5.00

Sample: 125612 - Quad No. 3 Comp

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37628	Date Analyzed:	2007-05-29	Analyzed By:	JS
Prep Batch:	32603	Sample Preparation:	2007-05-29	Prepared By:	JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		23800	mg/Kg	200	5.00

Sample: 125613 - Quad No. 4 Comp

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37628	Date Analyzed:	2007-05-29	Analyzed By:	JS
Prep Batch:	32603	Sample Preparation:	2007-05-29	Prepared By:	JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		30300	mg/Kg	200	5.00

Sample: 125614 - Well Head Area @ 20'

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	37628	Date Analyzed:	2007-05-29	Analyzed By:	JS
Prep Batch:	32603	Sample Preparation:	2007-05-29	Prepared By:	JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		19000	mg/Kg	200	5.00

Sample: 125615 - Area Comp @ 60' X 600'

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A
 QC Batch: 37628 Date Analyzed: 2007-05-29 Analyzed By: JS
 Prep Batch: 32603 Sample Preparation: 2007-05-29 Prepared By: JS

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		21900	mg/Kg	200	5.00

Method Blank (1) QC Batch: 37628

QC Batch: 37628 Date Analyzed: 2007-05-29 Analyzed By: JS
 Prep Batch: 32603 QC Preparation: 2007-05-29 Prepared By: JS

Parameter	Flag	MDL Result	Units	RL
Chloride		<3.25	mg/Kg	5

Laboratory Control Spike (LCS-1)

QC Batch: 37628 Date Analyzed: 2007-05-29 Analyzed By: JS
 Prep Batch: 32603 QC Preparation: 2007-05-29 Prepared By: JS

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<3.25	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	101	mg/Kg	1	100	<3.25	101	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 125655

QC Batch: 37628 Date Analyzed: 2007-05-29 Analyzed By: JS
 Prep Batch: 32603 QC Preparation: 2007-05-29 Prepared By: JS

continued ...

matrix spikes continued ...

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	¹ 212	mg/Kg	4	400	17.4	49	84.6 - 117

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	² 207	mg/Kg	4	400	17.4	47	84.6 - 117	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 37628			Date Analyzed: 2007-05-29			Analyzed By: JS		
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Chloride		mg/Kg	100	100	100	85 - 115	2007-05-29	

Standard (CCV-1)

QC Batch: 37628			Date Analyzed: 2007-05-29			Analyzed By: JS		
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Chloride		mg/Kg	100	99.9	100	85 - 115	2007-05-29	

¹Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

²Matrix spike recoveries out of control limits due to matrix spike being diluted out. Use LCS/LCSD to demonstrate analysis is under control.

