# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745




January 4, 2014

Doctor Tomas Oberding
NMOCD District 1
1625 French Drive
Hobbs, NM 88240
Via E-Mail

RE: Temporary Pit Closure Report
Caravan "BVW" State Com. No. 8H API #30-025-41602
Unit D, Section 33, T24S, R33E, Lea County

Dear Dr. Oberding:

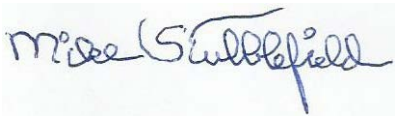
On behalf of Yates Petroleum Corporation, R.T. Hicks Consultants submits this closure report for the above-referenced temporary pit in accordance with the approved C-144 closure plan. This report includes the following information listed in Part 21 of the C-144 form:

| Requirements | Location in this Submission |
|---|---|
| Proof of Closure Notice (to surface owner and Division) | Attachment 1 |
| Proof of Deed Notice (on-site closure on private land only) | Not applicable; State Land (no deed) |
| Plot Plan, C-105 form (for on-site closures and temporary pits) | Attachment 2 |
| Confirmation Sampling Analytical Results | Not applicable. |
| Waste Material Sampling Analytical Results (required for on-site closure) | Attachment 3 |
| Disposal Facility Name and Permit Number | Not applicable; on-site closure |
| Soil Backfilling and Cover Installation | Attachment 4 |
| Re-vegetation Application Rates and Seeding Technique | Attachment 5 |
| Site Reclamation (photo documentation) | To follow |
| Updated C-144 form | Attachment 6 |

R.T. Hicks Consultants will notify NMOCD and provide photo-documentation when re-vegetation obligations described in subsection H of 19.15.17.13 NMAC are met.

Sincerely,
R.T. Hicks Consultants





Mike Stubblefield
Project Manager

# *ATTACHMENT 1*

# R. T. HICKS CONSULTANTS, LTD.

901 Rio Grande Blvd NW ▲ Suite F-142 ▲ Albuquerque, NM 87104 ▲ 505.266.5004 ▲ Fax: 505.266-0745


November 19, 2014

Dr. Tomáš Oberding
NMOCD District 1
1625 French Drive
Hobbs, New Mexico 88240
*VIA EMAIL*

RE: Caravan State Unit #7H & #8H Temporary Pit, In-place Burial Notice
Unit D, Section 33, T24S, R33E, API #30-025-41655, #30-025-41602

Dr. Oberding:

On behalf of Yates Petroleum Corporation, R. T. Hicks Consultants is provides this notice to NMOCD with a copy to the State Land Office (certified, return receipt request) that closure operations at the above- referenced pit will begin on **Friday, November 21, 2014**. The closure process should require about two weeks, depending on the availability of machinery. The rig was released on July 5, 2014.

After hydraulic fracturing and flow-back were completed, 4-point composite samples were collected from the inner horseshoe cell, outer horseshoe cell, and from the clean soil of the berms (beneath the liner) of the pit on October 28, 2014 for laboratory analyses. The table below calculates the concentration for "3:1 stabilized" material to allow comparison with Table II the Pit Rule (Closure Criteria for Burial Trenches and Waste Left in Place in Temporary Pits). The formula use in the table below is:

$$3{:}1\ \text{Stabilized Solids} = \frac{((\text{Outer Composite}*0.66)+(0.34*\text{Inner Composite})+(\text{Mixing Dirt}*3))}{4}$$

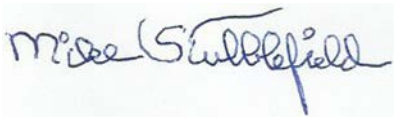
| Well Name | Sample Name | Sample Type | Sample Date | Chloride | Benzene | BTEX | GRO+DRO | TPH 418.1 | GRO+DRO+ DROext | GRO | DRO | MRO | T | E | X | Lab | Report | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | *80,000* | *10* | *50* | *1000* | *2500* | | | | | | | | | | |
| Caravan 7H Pit | Outer Composite | | 10/28/2014 | 35000 | 0.79 | 14.29 | 500 | 2200 | 640 | 160 | 340 | 140 | 5.1 | 1.6 | 6.8 | Hall | 2 | |
| Caravan 7H Pit | Inner Composite | | 10/28/2014 | 150000 | 0 | 0.15 | 119.7 | 110 | 193.7 | 9.7 | 110 | 74 | 0 | 0 | 0.15 | Hall | 2 | |
| Caravan 7H Pit | Mixing Dirt Comp. | | 10/28/2014 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Hall | 2 | |
| Caravan 7H Pit | **3:1 Stabilized** | *CALCULATED* | | *18150.00* | *0.13* | *2.37* | *92.38* | *372.08* | *121.58* | | | | | | | | | PASS |

The inner composite and outer composite ratio in the formula approximates the solids volume generated during drilling.The solids placed in the outer shoe are derived from drilling the surface casing string and production string. The inner shoe contains solids from drilling intermediate casing string plus periodic disposal of the steel pit solids.

Laboratory analyses of the component samples and the calculation of stabilized cuttings "demonstrate that, after the waste is solidified or stabilized with soil or other non-waste material at a ratio of no more than 3:1 soil or other non-waste material to waste, the concentration of any contaminant in the stabilized waste is not higher than the parameters listed in Table II of 19.15.17.13 NMAC." This mathematic mixing of the component samples has been reviewed and approved by OCD.

I will follow up this notice with a phone call the day before closure begins.

Sincerely,
R.T. Hicks Consultants



Mike Stubblefield
Project Manager

Copy: Yates Petroleum Corporation
, Ed Martin
New Mexico State Land Office
PO Box 1148
Santa Fe, NM 87504-1148
CERTIFIED MAIL – RETURN RECIEPT REQUEST

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SANTA FE NM 87504

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| Postage | $ $0.49 | 0615 |
| Certified Fee | $3.30 | 05 |
| Return Receipt Fee (Endorsement Required) | $2.70 | Postmark Here |
| Restricted Delivery Fee (Endorsement Required) | $0.00 | |
| Total Postage & Fees | $ $6.49 | 11/19/2014 |

7014 1820 0000 0276 0440

Sent To: New Mexico State Land Office Att: Ed Martin
Street & Apt. No., or PO Box No.: PO 1148
City, State, ZIP+4: Santa Fe, New Mexico 87504-1148

PS Form 3800, July 2014 — See Reverse for Instructions

**SENDER: COMPLETE THIS SECTION**

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

New Mexico State Land Office
Att: Ed Martin
P.O. Box 1148
Santa Fe, NM 87504-1148

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature
X
☐ Agent
☐ Addressee

B. Received by (Printed Name) — C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

SANTA FE MAIN POST OFFICE NOV 26 2014

3. Service Type
☐ Certified Mail® ☐ Priority Mail Express™
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ Collect on Delivery

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) 7014 1820 0000 0276 0440

PS Form 3811, July 2013 — Domestic Return Receipt

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

November 13, 2014

Mike Stubblefield

R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104
TEL: (505) 266-5004
FAX (505) 266-0745

RE: Caravan State UT No. 7H Caravan State UT No. 8H OrderNo.: 1411183

Dear Mike Stubblefield:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/30/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

**Analytical Report**
Lab Order **1411183**
Date Reported: **11/13/2014**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** R.T. Hicks Consultants, LTD
**Client Sample ID:** Outer Composite
**Project:** Caravan State UT No. 7H Caravan State
**Collection Date:** 10/28/2014 2:43:00 PM
**Lab ID:** 1411183-001 **Matrix:** SOIL
**Received Date:** 10/30/2014 10:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BCN** | |
| Diesel Range Organics (DRO) | 340 | 10 | | mg/Kg | 1 | 11/8/2014 10:41:24 AM | 16264 |
| Motor Oil Range Organics (MRO) | 140 | 50 | | mg/Kg | 1 | 11/8/2014 10:41:24 AM | 16264 |
| Surr: DNOP | 98.9 | 63.5-128 | | %REC | 1 | 11/8/2014 10:41:24 AM | 16264 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 160 | 50 | | mg/Kg | 10 | 11/8/2014 6:14:59 PM | 16272 |
| Surr: BFB | 116 | 80-120 | | %REC | 10 | 11/8/2014 6:14:59 PM | 16272 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 0.79 | 0.50 | | mg/Kg | 10 | 11/8/2014 6:14:59 PM | 16272 |
| Toluene | 5.1 | 0.50 | | mg/Kg | 10 | 11/8/2014 6:14:59 PM | 16272 |
| Ethylbenzene | 1.6 | 0.50 | | mg/Kg | 10 | 11/8/2014 6:14:59 PM | 16272 |
| Xylenes, Total | 6.8 | 1.0 | | mg/Kg | 10 | 11/8/2014 6:14:59 PM | 16272 |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %REC | 10 | 11/8/2014 6:14:59 PM | 16272 |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **LGP** | |
| Chloride | 35000 | 1500 | | mg/Kg | 1E | 11/11/2014 2:23:21 PM | 16315 |
| **EPA METHOD 418.1: TPH** | | | | | | Analyst: **JME** | |
| Petroleum Hydrocarbons, TR | 2200 | 100 | | mg/Kg | 10 | 11/7/2014 12:00:00 PM | 16262 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** R.T. Hicks Consultants, LTD
**Client Sample ID:** Inner Composite
**Project:** Caravan State UT No. 7H Caravan State
**Collection Date:** 10/28/2014 2:53:00 PM
**Lab ID:** 1411183-002
**Matrix:** SOIL
**Received Date:** 10/30/2014 10:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BCN** | |
| Diesel Range Organics (DRO) | 110 | 10 | | mg/Kg | 1 | 11/8/2014 11:24:06 AM | 16264 |
| Motor Oil Range Organics (MRO) | 74 | 50 | | mg/Kg | 1 | 11/8/2014 11:24:06 AM | 16264 |
| Surr: DNOP | 95.2 | 63.5-128 | | %REC | 1 | 11/8/2014 11:24:06 AM | 16264 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 9.7 | 5.0 | | mg/Kg | 1 | 11/8/2014 6:43:43 PM | 16272 |
| Surr: BFB | 121 | 80-120 | S | %REC | 1 | 11/8/2014 6:43:43 PM | 16272 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 6:43:43 PM | 16272 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 6:43:43 PM | 16272 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 6:43:43 PM | 16272 |
| Xylenes, Total | 0.15 | 0.10 | | mg/Kg | 1 | 11/8/2014 6:43:43 PM | 16272 |
| Surr: 4-Bromofluorobenzene | 101 | 80-120 | | %REC | 1 | 11/8/2014 6:43:43 PM | 16272 |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **LGP** | |
| Chloride | 150000 | 7500 | | mg/Kg | 5E | 11/11/2014 2:35:45 PM | 16315 |
| **EPA METHOD 418.1: TPH** | | | | | | Analyst: **JME** | |
| Petroleum Hydrocarbons, TR | 110 | 9.9 | | mg/Kg | 1 | 11/7/2014 12:00:00 PM | 16262 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** R.T. Hicks Consultants, LTD
**Client Sample ID:** Mixing Soil
**Project:** Caravan State UT No. 7H Caravan State
**Collection Date:** 10/28/2014 2:57:00 PM
**Lab ID:** 1411183-003 **Matrix:** SOIL **Received Date:** 10/30/2014 10:00:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **BCN** | |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 11/12/2014 11:49:25 AM | 16264 |
| Motor Oil Range Organics (MRO) | ND | 50 | | mg/Kg | 1 | 11/12/2014 11:49:25 AM | 16264 |
| Surr: DNOP | 71.8 | 63.5-128 | | %REC | 1 | 11/12/2014 11:49:25 AM | 16264 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 11/8/2014 1:29:45 AM | 16272 |
| Surr: BFB | 92.3 | 80-120 | | %REC | 1 | 11/8/2014 1:29:45 AM | 16272 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 1:29:45 AM | 16272 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 1:29:45 AM | 16272 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 11/8/2014 1:29:45 AM | 16272 |
| Xylenes, Total | ND | 0.099 | | mg/Kg | 1 | 11/8/2014 1:29:45 AM | 16272 |
| Surr: 4-Bromofluorobenzene | 96.4 | 80-120 | | %REC | 1 | 11/8/2014 1:29:45 AM | 16272 |
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **LGP** | |
| Chloride | ND | 30 | | mg/Kg | 20 | 11/10/2014 4:46:11 PM | 16315 |
| **EPA METHOD 418.1: TPH** | | | | | | Analyst: **JME** | |
| Petroleum Hydrocarbons, TR | ND | 10 | | mg/Kg | 1 | 11/7/2014 12:00:00 PM | 16262 |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

**Qualifiers:**

| | |
|---|---|
| * | Value exceeds Maximum Contaminant Level. |
| E | Value above quantitation range |
| J | Analyte detected below quantitation limits |
| O | RSD is greater than RSDlimit |
| R | RPD outside accepted recovery limits |
| S | Spike Recovery outside accepted recovery limits |
| B | Analyte detected in the associated Method Blank |
| H | Holding times for preparation or analysis exceeded |
| ND | Not Detected at the Reporting Limit |
| P | Sample pH greater than 2. |
| RL | Reporting Detection Limit |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID | **MB-16315** | SampType: | **MBLK** | TestCode: | **EPA Method 300.0: Anions** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16315** | RunNo: | **22456** | | | | | |
| Prep Date: | **11/10/2014** | Analysis Date: | **11/10/2014** | SeqNo: | **661887** | Units: | **mg/Kg** | | | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID | **LCS-16315** | SampType: | **LCS** | TestCode: | **EPA Method 300.0: Anions** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16315** | RunNo: | **22456** | | | | | |
| Prep Date: | **11/10/2014** | Analysis Date: | **11/10/2014** | SeqNo: | **661888** | Units: | **mg/Kg** | | | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 93.1 | 90 | 110 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID | **MB-16262** | SampType: | **MBLK** | | TestCode: | **EPA Method 418.1: TPH** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16262** | | RunNo: | **22396** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660067** | Units: | **mg/Kg** | | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Petroleum Hydrocarbons, TR | ND | 20 | | | | | | | | |

| Sample ID | **LCS-16262** | SampType: | **LCS** | | TestCode: | **EPA Method 418.1: TPH** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16262** | | RunNo: | **22396** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660068** | Units: | **mg/Kg** | | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Petroleum Hydrocarbons, TR | 110 | 20 | 100.0 | 0 | 106 | 80 | 120 | | | |

| Sample ID | **LCSD-16262** | SampType: | **LCSD** | | TestCode: | **EPA Method 418.1: TPH** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS02** | Batch ID: | **16262** | | RunNo: | **22396** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660069** | Units: | **mg/Kg** | | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Petroleum Hydrocarbons, TR | 120 | 20 | 100.0 | 0 | 119 | 80 | 120 | 11.6 | 20 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID | **MB-16305** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16305** | | RunNo: | **22412** | | | | |
| Prep Date: | **11/10/2014** | Analysis Date: | **11/10/2014** | | SeqNo: | **660791** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 7.8 | | 10.00 | | 77.7 | 63.5 | 128 | | | |

| Sample ID | **LCS-16305** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16305** | | RunNo: | **22412** | | | | |
| Prep Date: | **11/10/2014** | Analysis Date: | **11/10/2014** | | SeqNo: | **660792** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 3.6 | | 5.000 | | 71.4 | 63.5 | 128 | | | |

| Sample ID | **MB-16264** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16264** | | RunNo: | **22401** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660923** | Units: | **mg/Kg** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Motor Oil Range Organics (MRO) | ND | 50 | | | | | | | | |
| Surr: DNOP | 10 | | 10.00 | | 101 | 63.5 | 128 | | | |

| Sample ID | **MB-16266** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16266** | | RunNo: | **22401** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660924** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 7.9 | | 10.00 | | 79.4 | 63.5 | 128 | | | |

| Sample ID | **LCS-16264** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16264** | | RunNo: | **22401** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660925** | Units: | **mg/Kg** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 51 | 10 | 50.00 | 0 | 101 | 68.6 | 130 | | | |
| Surr: DNOP | 5.0 | | 5.000 | | 99.3 | 63.5 | 128 | | | |

| Sample ID | **LCS-16266** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16266** | | RunNo: | **22401** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660926** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.2 | | 5.000 | | 84.4 | 63.5 | 128 | | | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID | **MB-16334** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16334** | | RunNo: | **22488** | | | | |
| Prep Date: | **11/11/2014** | Analysis Date: | **11/12/2014** | | SeqNo: | **663176** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.6 | | 10.00 | | 96.2 | 63.5 | 128 | | | |

| Sample ID | **LCS-16334** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Diesel Range Organics** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16334** | | RunNo: | **22488** | | | | |
| Prep Date: | **11/11/2014** | Analysis Date: | **11/12/2014** | | SeqNo: | **663181** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.7 | | 5.000 | | 93.2 | 63.5 | 128 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID | **MB-16279** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16279** | | RunNo: | **22407** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660422** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 900 | | 1000 | | 90.3 | 80 | 120 | | | |

| Sample ID | **LCS-16279** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16279** | | RunNo: | **22407** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660423** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 980 | | 1000 | | 98.1 | 80 | 120 | | | |

| Sample ID | **MB-16272** | SampType: | **MBLK** | | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: | **16272** | | RunNo: | **22407** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660430** | Units: | **mg/Kg** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 920 | | 1000 | | 91.5 | 80 | 120 | | | |

| Sample ID | **LCS-16272** | SampType: | **LCS** | | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: | **16272** | | RunNo: | **22407** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660431** | Units: | **mg/Kg** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 104 | 65.8 | 139 | | | |
| Surr: BFB | 1000 | | 1000 | | 99.7 | 80 | 120 | | | |

| Sample ID | **LCSD-16272** | SampType: | **LCSD** | | TestCode: | **EPA Method 8015D: Gasoline Range** | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS02** | Batch ID: | **16272** | | RunNo: | **22407** | | | | |
| Prep Date: | **11/6/2014** | Analysis Date: | **11/7/2014** | | SeqNo: | **660432** | Units: | **%REC** | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 1000 | | | | | | | 0 | 0 | |

**Qualifiers:**

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| Sample ID **MB-16279** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **16279** | RunNo: **22407** |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | SeqNo: **660519** Units: **%REC** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 0.94 | | 1.000 | | 94.5 | 80 | 120 | | | |

| Sample ID **LCS-16279** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **16279** | RunNo: **22407** |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | SeqNo: **660520** Units: **%REC** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 0.99 | | 1.000 | | 99.5 | 80 | 120 | | | |

| Sample ID **MB-16272** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **16272** | RunNo: **22407** |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | SeqNo: **660526** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.95 | | 1.000 | | 95.0 | 80 | 120 | | | |

| Sample ID **LCS-16272** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **16272** | RunNo: **22407** |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | SeqNo: **660527** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.98 | 0.050 | 1.000 | 0 | 97.7 | 80 | 120 | | | |
| Toluene | 0.96 | 0.050 | 1.000 | 0 | 96.2 | 80 | 120 | | | |
| Ethylbenzene | 0.98 | 0.050 | 1.000 | 0 | 97.9 | 80 | 120 | | | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 97.2 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

| Sample ID **LCSD-16272** | SampType: **LCSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS02** | Batch ID: **16272** | RunNo: **22407** |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | SeqNo: **660528** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.97 | 0.050 | 1.000 | 0 | 96.9 | 80 | 120 | 0.833 | 20 | |
| Toluene | 0.97 | 0.050 | 1.000 | 0 | 96.8 | 80 | 120 | 0.643 | 20 | |
| Ethylbenzene | 0.97 | 0.050 | 1.000 | 0 | 97.4 | 80 | 120 | 0.478 | 20 | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 97.1 | 80 | 120 | 0.140 | 20 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1411183**

***13-Nov-14***

**Client:** R.T. Hicks Consultants, LTD

**Project:** Caravan State UT No. 7H Caravan State UT No.

| | | | | | |
|---|---|---|---|---|---|
| Sample ID **LCSD-16272** | SampType: **LCSD** | | TestCode: **EPA Method 8021B: Volatiles** | | |
| Client ID: **LCSS02** | Batch ID: **16272** | | RunNo: **22407** | | |
| Prep Date: **11/6/2014** | Analysis Date: **11/7/2014** | | SeqNo: **660528** | Units: **mg/Kg** | |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 102 | 80 | 120 | 0 | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| O | RSD is greater than RSDlimit | P | Sample pH greater than 2. |
| R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| S | Spike Recovery outside accepted recovery limits | | |

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

*Hall Environmental Analysis Laboratory*
*4901 Hawkins NE*
*Albuquerque, NM 87109*
*TEL: 505-345-3975 FAX: 505-345-4107*
*Website: www.hallenvironmental.com*

# Sample Log-In Check List

Client Name: **RT HICKS** Work Order Number: **1411183** RcptNo: 1

Received by/date: AT 10/30/14

Logged By: **Lindsay Mangin** **10/30/2014 10:00:00 AM**

Completed By: **Lindsay Mangin** **11/5/2014 3:03:22 PM**

Reviewed By: CS 11/5/14

## Chain of Custody

| | | | |
|---|---|---|---|
| 1. Custody seals intact on sample bottles? | Yes ☐ | No ☐ | Not Present ☑ |
| 2. Is Chain of Custody complete? | Yes ☑ | No ☐ | Not Present ☐ |
| 3. How was the sample delivered? | Client | | |

## Log In

| | | | |
|---|---|---|---|
| 4. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 5. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 6. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 7. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 8. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 9. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 10. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 11. Were any sample containers received broken? | Yes ☐ | No ☑ | # of preserved bottles checked for pH: (<2 or >12 unless noted) |
| 12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) | Yes ☑ | No ☐ | Adjusted? |
| 13. Are matrices correctly identified on Chain of Custody? | Yes ☑ | No ☐ | |
| 14. Is it clear what analyses were requested? | Yes ☑ | No ☐ | |
| 15. Were all holding times able to be met? (If no, notify customer for authorization.) | Yes ☑ | No ☐ | Checked by: |

## Special Handling (if applicable)

| | | | |
|---|---|---|---|
| 16. Was client notified of all discrepancies with this order? | Yes ☐ | No ☐ | NA ☑ |

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 1.0 | Good | Not Present | | | |

# Chain-of-Custody Record

Client: R.T. Hicks Consultants, LTD

Mailing Address: 901 Rio Grande Blvd, NW
Albuquerque, NM. 87104

Phone #: 505.266.5004

email or Fax#: rd@rthicksconsult.com

QA/QC Package: mike@rthicksconsult.com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name:
Caravan State Ut No. 7H
Caravan State Ut No. 8H.

Project #:

Project Manager:
Mike Stubblefield

Sampler: mike Stubblefield

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.0

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

**Analysis Request**

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1411183 | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F^-$, $Cl^-$, $NO_3$, $NO_2$, $PO_4$, $SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | 100 grams | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/28/14 | 2:47P | soil | Outer Composite | 8oz 1 glass | ice | -001 | ✓ | | ✓ | ✓ | | | | ✓ | | | | ✓ | | | | |
| 10/28/14 | 2:53P | soil | Inner Composite | 8oz. 1 glass | ice | -002 | ✓ | | ✓ | ✓ | | | | ✓ | | | | ✓ | | | | |
| 10/28/14 | 2:52P | soil | Mixing soil | 8oz. 1 glass | ice | -003 | ✓ | | ✓ | ✓ | | | | ✓ | | | | ✓ | | | | |

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 10/29/14 | 7PM | mike Stubblefield | | | |
| 10/30 | 10am | | | 10/29 | 1PM |
| | | | | 11/3/14 | 1000 |

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

## Mike Stubblefield

**From:** Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
**Sent:** Friday, November 21, 2014 3:50 PM
**To:** Randall Hicks
**Cc:** mike@rthicksconsult.com
**Subject:** RE: Yates Caravan 8H & 7H

Hi Randy and Mike,

Thank you for the detailed explanation. I greatly appreciate your patience and this chance to learn even more about the confounded regs we have.

Based on the these documents I've gone ahead and approved start of closure and accounted for the secondary permit #. Regarding the dates… I will always err on the side of shorter schedules (the sooner it gets to "clean" the less chance something bad happens to Jim's water)… that being said, I also understand the interpretation for the longer period, and am (until told I'm wrong) open to discussion on sites that may need that extra time based on the complex mixing of fluids.
Many thanks again. Have a wonderful weekend and safe travels!
Cheers
-Doc

Tomáš 'Doc' Oberding, PhD
Senior Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

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**From:** Randall Hicks [mailto:r@rthicksconsult.com]
**Sent:** Thursday, November 20, 2014 3:58 PM
**To:** Oberding, Tomas, EMNRD
**Cc:** mike@rthicksconsult.com
**Subject:** FW: Yates Caravan 8H & 7H

Tomas

With respect to permitting one pit for 2 wells – the Rule implies that the C-144 will be associated with only one of the two wells. In the case of the Caravan 8H and 7H, the pit permit may be associated with the 8H only. If the 8H was drilled first, then the clock for closure activities at the pit is dictated by these parts of the Pit Rule:

**19.15.17.12 OPERATIONAL REQUIREMENTS:**
**B. (4)** The operator shall remove all free liquids from the surface of a temporary pit within 60 days from the date that the operator releases the last drilling or workover rig associated with the relevant pit permit. The operator shall note the date of the drilling or workover rig's

release on form C-105 or C-103 upon well or workover completion. The appropriate division district office may grant an extension of up to two
months, not to exceed temporary pit life span under Subsection R of 19.15.17.7 NMAC.

So with respect to the C-105 or C-103 showing the rig release – as it applies to the pit – the Rule suggests it is the release of the LAST rig, which would be the release of the drilling rig for the 7H in this example. If the pit is used to hold flowback, then we believe the rig release is the release of the workover rig associated with the flow back. BUT WAIT…

Here is what the Rule says about the closure clock

**R.** "Temporary pit" means a pit, including a drilling or workover pit, which is constructed with the intent that the pit will hold liquids and mineral solids. Temporary pits may be used for one or more wells and must be located at one of the associated permitted well drilling
locations. Temporary pits must be closed within six months from the date the operator releases the drilling or workover rig from the first well
using the pit. Any containment structure such as a pond, pit, or other impoundment that holds only fresh water that has not been treated for oil
field purposes, is not a temporary pit.

**19.15.17.13 CLOSURE AND SITE RECLAMATION REQUIREMENTS:**
**G. (2)** An operator shall close a permitted temporary pit within six months from the date that the operator releases the drilling or workover rig. The operator shall note the date of the drilling or workover rig's release on form C-105 or C-103, filed with the division, upon the
well's or work-over's completion. The appropriate division district office may grant an extension not to exceed three months.

Bottom lines

1. The Rule is confusing, but can be interpreted
2. A pit permit is associated with only one well
3. Another well can use the same pit
4. Fluids can stay in the pit for 60 days after the LAST rig is released
5. The pit must be closed within 6 months after the FIRST rig that used the pit is released.
6. The operator (and their consultants) need to pay attention to
    a. The last rig release date – as it applies to the fluids getting off the pit and
    b. The first rig release date – as that starts the clock for closing the pit

Now, here is a good question: given these these conditions:

A. One pit permitted for 3 wells on the same location
B. The rig is released from the first well on "day 0" and starts drilling the second well on the location on day 3
C. Workover/stimulation does not start on these 3 wells until the rig is released from the 3rd well (which day 70 after the rig is released from the first well)
D. So the stimulation/workover rig for the FIRST wells is released on day 75
E. The stimulation rig for the 3rd well on the location is released on day 87
F. Fluids must be off the pit by Day 87+60 = 147

Does the pit need to be closed on day

a. 180 (6 months from day 0) or
b. Day 180 + 75 = 235?

I guess we can cross that bridge when we get to it.

Randall Hicks
RT Hicks Consultants
Office: 505-266-5004

Cell: 505-238-9515

---

**From:** Randall Hicks [mailto:r@rthicksconsult.com]
**Sent:** Wednesday, February 26, 2014 4:02 PM
**To:** 'Leking, Geoffrey R, EMNRD'; twarnell@slo.state.nm.us
**Cc:** Tim Bussell (Tim@yatespetroleum.com); Travis Hahn (THahn@yatespetroleum.com); Scott Pitts (ScottP@yatespetroleum.com); Bruce Noles (Brucen@yatespetroleum.com); mike@rthicksconsult.com
**Subject:** Yates Caravan 8H & 7H

Geoff

Paper copy in today's mail.

Randall Hicks
RT Hicks Consultants
Office: 505-266-5004
Cell: 505-238-9515

# *ATTACHMENT 2*

| Submit To Appropriate District Office<br>Two Copies<br>District I<br>1625 N. French Dr., Hobbs, NM 88240<br>District II<br>811 S. First St., Artesia, NM 88210<br>District III<br>1000 Rio Brazos Rd., Aztec, NM 87410<br>District IV<br>1220 S. St. Francis Dr., Santa Fe, NM 87505 | State of New Mexico<br>Energy, Minerals and Natural Resources<br><br>Oil Conservation Division<br>1220 South St. Francis Dr.<br>Santa Fe, NM 87505 | Form C-105<br>Revised August 1, 2011<br>1. WELL API NO. 30-025-41602<br>2. Type of Lease<br>X STATE ☐ FEE ☐ FED/INDIAN<br>3. State Oil & Gas Lease No.<br>VO-7363 |
|---|---|---|

## WELL COMPLETION OR RECOMPLETION REPORT AND LOG

4. Reason for filing:

☐ **COMPLETION REPORT** (Fill in boxes #1 through #31 for State and Fee wells only)

X **C-144 CLOSURE ATTACHMENT** (Fill in boxes #1 through #9, #15 Date Rig Released and #32 and/or #33; attach this and the plat to the C-144 closure report in accordance with 19.15.17.13.K NMAC)

5. Lease Name or Unit Agreement Name: Caravan BVW State

6. Well Number: 8H

7. Type of Completion:
X NEW WELL ☐ WORKOVER ☐ DEEPENING ☐ PLUGBACK ☐ DIFFERENT RESERVOIR ☐ OTHER

8. Name of Operator **Yates Petroleum Corporation**

9. OGRID 025575

10. Address of Operator 105 South Fourth Street Artesia, New Mexico

11. Pool name or Wildcat Triple X Bone Spring, West

| 12.Location | Unit Ltr | Section | Township | Range | Lot | Feet from the | N/S Line | Feet from the | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|---|
| **Surface:** | D | 33 | 24S | 33E | | 50' | N | 450' | W | Lea |
| **BH:** | | | | | | | | | | |

| 13. Date Spudded | 14. Date T.D. Reached | 15. Date Rig Released | 16. Date Completed (Ready to Produce) | 17. Elevations (DF and RKB, RT, GR, etc.) |
|---|---|---|---|---|
| 5/12/14 | 6/8/14 | 6/12/14 | 8/16/14 | |

| 18. Total Measured Depth of Well | 19. Plug Back Measured Depth | 20. Was Directional Survey Made? | 21. Type Electric and Other Logs Run |
|---|---|---|---|
| | | | |

22. Producing Interval(s), of this completion - Top, Bottom, Name

23. **CASING RECORD** (Report all strings set in well)

| CASING SIZE | WEIGHT LB./FT. | DEPTH SET | HOLE SIZE | CEMENTING RECORD | AMOUNT PULLED |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

24. LINER RECORD

| SIZE | TOP | BOTTOM | SACKS CEMENT | SCREEN |
|---|---|---|---|---|
| | | | | |
| | | | | |

25. TUBING RECORD

| SIZE | DEPTH SET | PACKER SET |
|---|---|---|
| | | |
| | | |

26. Perforation record (interval, size, and number)

27. ACID, SHOT, FRACTURE, CEMENT, SQUEEZE, ETC.

| DEPTH INTERVAL | AMOUNT AND KIND MATERIAL USED |
|---|---|
| | |
| | |
| | |

28. **PRODUCTION**

| Date First Production | Production Method *(Flowing, gas lift, pumping - Size and type pump)* | Well Status *(Prod. or Shut-in)* |
|---|---|---|
| | | |

| Date of Test | Hours Tested | Choke Size | Prod'n For Test Period | Oil - Bbl | Gas - MCF | Water - Bbl. | Gas - Oil Ratio |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

| Flow Tubing Press. | Casing Pressure | Calculated 24-Hour Rate | Oil - Bbl. | Gas - MCF | Water - Bbl. | Oil Gravity - API - *(Corr.)* |
|---|---|---|---|---|---|---|
| | | | | | | |

30. Test Witnessed By

31. List Attachments

32. If a temporary pit was used at the well, attach a plat with the location of the temporary pit.

33. If an on-site burial was used at the well, report the exact location of the on-site burial:

Latitude 32° 10' 50.68" N Longitude 103° 35' 03.56" W NAD 1983

*I hereby certify that the information shown on both sides of this form is true and complete to the best of my knowledge and belief*

Signature Mike Stubblefield Printed Name Mike Stubblefield Title Agent for YPC

Date 2/4/15

E-mail Address mike@rthicksconsult.com

# INSTRUCTIONS

This form is to be filed with the appropriate District Office of the Division not later than 20 days after the completion of any newly-drilled or deepened well and not later than 60 days after completion of closure. When submitted as a completion report, this shall be accompanied by one copy of all electrical and radio-activity logs run on the well and a summary of all special tests conducted, including drill stem tests. All depths reported shall be measured depths. In the case of directionally drilled wells, true vertical depths shall also be reported. For multiple completions, items 11, 12 and 26-31 shall be reported for each zone.

INDICATE FORMATION TOPS IN CONFORMANCE WITH GEOGRAPHICAL SECTION OF STATE

| Southeastern New Mexico | | Northwestern New Mexico | |
|---|---|---|---|
| T. Anhy_____ | T. Canyon_____ | T. Ojo Alamo_____ | T. Penn A"_____ |
| T. Salt_____ | T. Strawn_____ | T. Kirtland _____ | T. Penn. "B"_____ |
| B. Salt_____ | T. Atoka_____ | T. Fruitland_____ | T. Penn. "C"_____ |
| T. Yates_____ | T. Miss_____ | T. Pictured Cliffs_____ | T. Penn. "D"_____ |
| T. 7 Rivers_____ | T. Devonian_____ | T. Cliff House_____ | T. Leadville_____ |
| T. Queen_____ | T. Silurian_____ | T. Menefee_____ | T. Madison_____ |
| T. Grayburg_____ | T. Montoya_____ | T. Point Lookout_____ | T. Elbert_____ |
| T. San Andres_____ | T. Simpson_____ | T. Mancos_____ | T. McCracken_____ |
| T. Glorieta_____ | T. McKee_____ | T. Gallup_____ | T. Ignacio Otzte_____ |
| T. Paddock_____ | T. Ellenburger_____ | Base Greenhorn_____ | T.Granite _____ |
| T. Blinebry_____ | T. Gr. Wash_____ | T. Dakota_____ | |
| T.Tubb_____ | T. Delaware Sand_____ | T. Morrison_____ | |
| T. Drinkard_____ | T. Bone Springs_____ | T.Todilto_____ | |
| T. Abo_____ | T._____ | T. Entrada_____ | |
| T. Wolfcamp_____ | T._____ | T. Wingate_____ | |
| T. Penn_____ | T._____ | T. Chinle_____ | |
| T. Cisco (Bough C)_____ | T._____ | T. Permian_____ | |

**OIL OR GAS SANDS OR ZONES**

No. 1, from……..…..….to……. No. 3, from……to…….……

No. 2, from……to…… No. 4, from……to…….

**IMPORTANT WATER SANDS**

Include data on rate of water inflow and elevation to which water rose in hole.

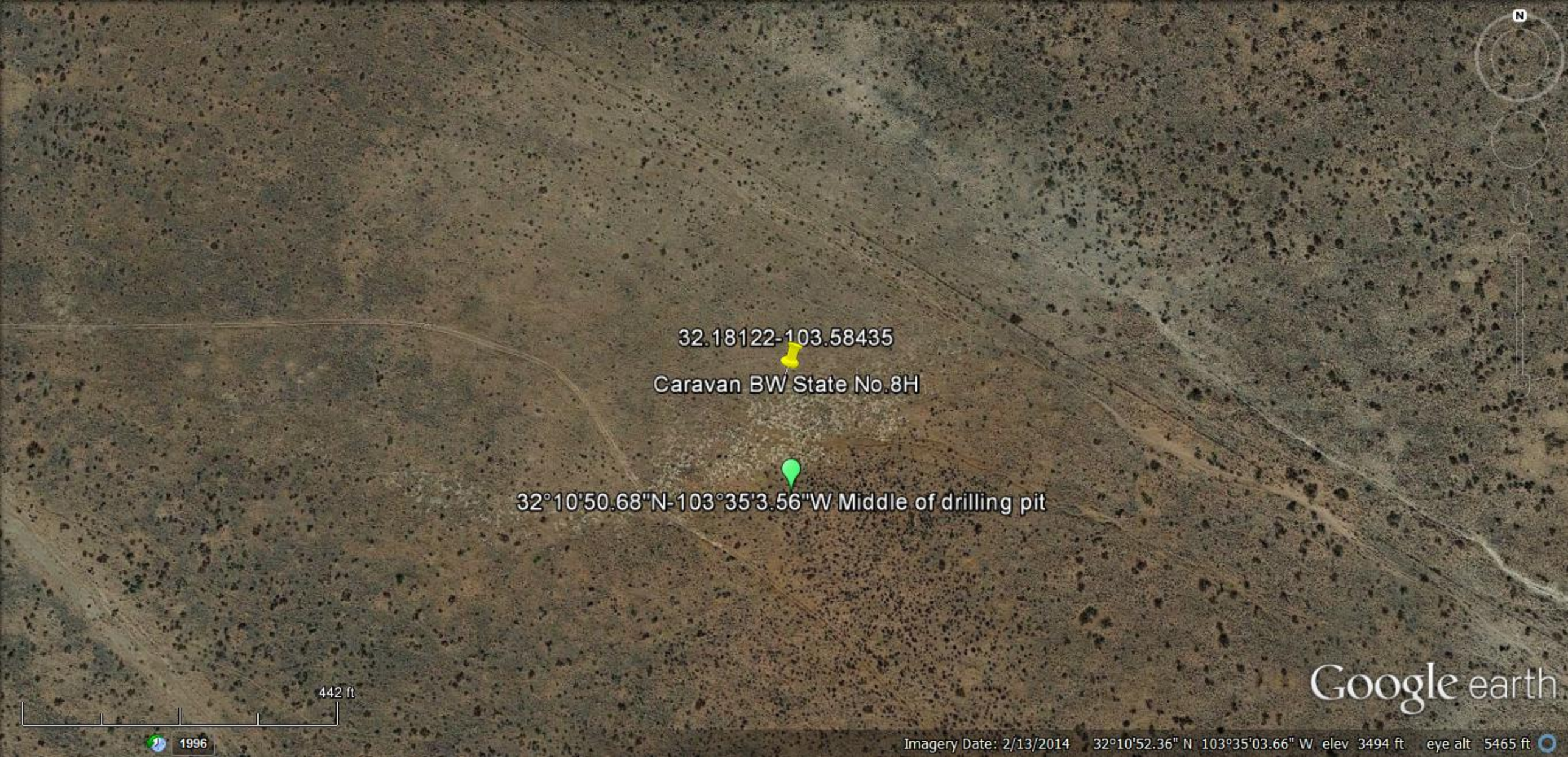
No. 1, from…….to……feet……

No. 2, from…….to……feet……

No. 3, from…….to……feet……

LITHOLOGY RECORD (Attach additional sheet if necessary)

| From | To | Thickness In Feet | Lithology | | From | To | Thickness In Feet | Lithology |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |


32.18122-103.58435
Caravan BW State No.8H
32°10'50.68"N-103°35'3.56"W Middle of drilling pit
442 ft
1996
Google earth
Imagery Date: 2/13/2014 32°10'52.36" N 103°35'03.66" W elev 3494 ft eye alt 5465 ft

# Waste Material Sampling Analytical Results

On October 28, 2014, eight-point composite samples were collected from the temporary pit. Clean mixing soil was collected from under the liner. The composite samples was submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico for BTEX (8260B), GRO/GRO (8015M), TPH (418.1), and Chloride (SM4500) analyses.

The table below depicts the samples collected from the cuttings in this pit and their concentrations of the parameters listed in Table II of 19.15.17.13 NMAC (June 2013 Pit Rule). These analyses demonstrate that this site meets the criteria for in-place closure.

| Well Name | Sample Name | Sample Type | Sample Date | Chloride *80,000* | Benzene *10* | BTEX *50* | GRO+DRO *1000* | TPH 418.1 *2500* | GRO+DRO+ DROext | GRO | DRO | MRO | T | E | X | Lab | Report |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Caravan 7H Pit | Outer Composite | | 10/28/2014 | 35000 | 0.79 | 14.29 | 500 | 2200 | 640 | 160 | 340 | 140 | 5.1 | 1.6 | 6.8 | Hall | 2 |
| Caravan 7H Pit | Inner Composite | | 10/28/2014 | 150000 | 0 | 0.15 | 119.7 | 110 | 193.7 | 9.7 | 110 | 74 | 0 | 0 | 0.15 | Hall | 2 |
| Caravan 7H Pit | Mixing Dirt Comp. | | 10/28/2014 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Hall | 2 |
| Caravan 7H Pit | **3:1 Stabilized** | *CALCULATED* | | *27637.50* | *0.07* | *1.20* | *61.00* | *199.65* | ***84.76*** | | | | | | | | |

# *ATTACHMENT 4*