



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street SE, Charleston, WV 25304
(304) 926-0450 office (304) 926-0452 fax

Earl Ray Tomblin, Governor
Randy C. Huffman, Cabinet Secretary
dep.wv.gov

MEMORANDUM

Re: WVU LARGE IMPOUNDMENT / PIT STUDY
[Volume capacity designs greater than 5000 barrels]

Acknowledgement: Recognition and Response by Office of Oil and Gas Personnel

Date: December 3rd, 2012

Reported by: David J. Belcher, Assistant Chief – Enforcement

Attached are inspection documents for the fifteen site candidates of large impoundments and pits presented in the WVU study. These documents are the results of follow-up reviews by the Office of Oil and Gas (OOG) field inspector staff.

This memorandum recognizes the WVU 2012 large impoundment/pit study and hereby reports the actions and measures taken by the OOG as a response. WVU presented their investigations of selected impoundments and pits during the 2012 period. This involved various county locations and seven different owner/operators (company). WVU's observations were based on as-built conditions and included a few observations of the construction phases and maintenance performances by the companies represented; also interviews with the OOG Inspectors were added. WVU's concerns address training, maintenance, and construction; concerns reported as correctable areas of need. The fifteen structures covered by the WVU team are of three categories which represent the OOG large impoundment/pit inventory; centralized waste facilities, fresh water impoundments, and well-permitted waste pits. All fifteen are under the authority and registry with the OOG.

Due to this study, the OOG implemented in-house training with all field and office staff members. OOG field staff thereafter conducted inspections of all fifteen structures. They also directed corrective actions necessary on their findings. All company representatives accompanied those efforts for each site but one. Inspectors plan follow-up inspections for the corrective actions necessary.

Findings the inspectors report are somewhat similar in respect to the WVU findings; and they found no areas of imminent danger. Inspectors attempted to locate each survey deficiency reported by the WVU team. Inspectors applied the data from the survey and also utilized an in-house inspection checklist; this checklist was designed by the OOG Professional Engineer on

staff that has experience inspecting impoundment structures. They briefed those criteria with the operating representatives. Upon conclusion of their findings, parties agreed on the repair work necessary. Inspectors submitted those reports to the office which noted their findings and actions necessary for the repair work. The following briefly describes those efforts:

- Donna Completion Pit – Oil and Gas Inspector Hendershot inspected on November 16th and found the pit closed and reclaimed by the Energy Corporation of America. Vegetation is started. Pit is associated with the well permit activity API 47-049-02183.
- Donna Completion Impoundment – Oil and Gas Inspector Hendershot inspected on November 16th and found the pit closed and reclaimed by the Energy Corporation of America. Vegetation started. Pit is associated with the well permit activity API 47-049-02183.
- Pribble Freshwater Impoundment – Oil and Gas Inspector Haught inspected on November 30th in sunny conditions and found the following:
 1. Impoundment perimeter contained no safety devices – Stone Energy Company representative agreed to installation of safety equipment.
 2. Liner revealed a small tear near the anchor trench – Stone Energy Company representative agreed to patch the tear.
 3. Minor slope movement along the access road – Stone Energy Company representative agreed to make the necessary repairs to prevent further movement.
 4. Erosion on fill slope – Stone Energy Company representative agreed to dress slope and apply seed and mulch materials.
 5. Standing water on the crest – Stone Energy Company representative agreed to work crest to ensure proper drainage.

This is a centralized fresh water impoundment registered with OOG as #WMP-00277.

- Burch Ridge Wastewater Pit – Oil and Gas Inspector Haught inspected on November 28th in sunny conditions and found the following:
 1. Signage missing – Gastar Exploration USA, Inc. representative agreed to installation of safety equipment.
 2. Cracks found on crest where standing waters were during wet periods – Gastar Exploration USA, Inc. representative agreed to dress the crest and apply seed and mulch materials.

This is a waste pit associated with the well permit activity API 47-051-01505.

- MIP Freshwater Impoundment – Oil and Gas Inspector Ward inspected on November 27th in light snow and rain conditions and found standing waters on the crest isolated in minor areas and found some minor erosions. Corrections of the erosion areas were already being addressed by the Northeast Natural Energy. Inspector also reports the weather conditions did not hinder his inspection. Impoundment is associated with the well permit activity of API 47-061-01622 and 47-061-01624.

- Ball 1H Impoundment #2 – Oil and Gas Inspector Gainer and Supervisor Campbell inspected on November 28th in sunny conditions. Findings report only single crack on crest but minor and shallow believed a non-structural concern. Inspector and Supervisor report no corrective actions needed at this time. This is a large volume storage impoundment associated with the well permit activity API 47-095-02032.
- Mills-Wetzel Freshwater Impoundment – Oil and Gas Inspector Haught inspected on November 30th in sunny conditions and found the following:
 1. Trash observed around impoundment perimeter – Stone Energy Company representative agreed to address recovery and removal of trash.
 2. Fencing was down in areas – Stone Energy Company representative agreed to fence repairs.
 3. Standing waters on the crest – Stone Energy Company representative agreed to work crest to ensure proper drainage.

This is a fresh water impoundment associated with the well permit activity of API 47-103-02704.

- SHL 2 Centralized Pit – Oil and Gas Inspector Haught inspected on November 29th in sunny conditions and a minor amount of trash observed around the pit. Noble Energy representative agreed to address the trash recovery and removals. Inspector also observed bird netting installed. This is a centralized waste pit registered with OOG as #051-WV-0001.
- SHL 3 Centralized Pit – Oil and Gas Inspector Haught inspected on November 29th in sunny conditions and a minor amount of trash observed around the pit. Noble Energy representative agreed to address the trash recovery and removals. Inspector also observed bird netting installed. This is a centralized waste pit registered with OOG as #051-WV-0002.
- SHL 4 Centralized Pit – Oil and Gas Inspector Haught inspected on November 29th in sunny conditions and found the following:
 1. Areas for improvements needed with vegetation – Noble Energy representative agreed to address vegetation corrections.
 2. Slips located below two sediment traps – Nobel Energy representative agreed to the repairs and plans removal of traps instead install vegetative strips as a replacement.
 3. Inspector found bird netting installed.

This is a centralized waste pit registered with OOG as #051-WV-0003.

- Shields FW1 – Oil and Gas Inspector Haught inspected on November 28th in sunny conditions and found the following:
 1. Signage and safety equipment missing – Gastar Exploration USA, Inc. representative agreed to installation of signage and safety equipment.
 2. Minor erosion areas on fill slope – Gastar Exploration USA, Inc. representative agreed to dress areas on slope and install straw matting.

3. Standing water on the crest – Gastar Exploration USA, Inc. representative agreed to work crest to ensure proper drainage.

This is a waste pit associated with the well permit activity API 47-051-01533.

- Flanigan Pit – Oil and Gas Inspector Jenkins and Supervisor Harris inspected on November 27th in light snow and rain conditions and found small puddles rain waters on liner and ditch line. Inspector and Supervisor report no corrective actions necessary by the Antero Resources. Pit is associated with the well permit activity API 47-033-05570.
- Larry Pit – Oil and Gas Inspector Jenkins and Supervisor Harris inspected on November 27th in light snow and rain conditions and found some standing rain on the crest. Also Inspector and Supervisor found small erosion trench on fill slope; instructed company to monitor. Inspector and Supervisor report no corrective actions needed at this time; this is a temporary impoundment to be closed in a few months by the Antero Resources. Pit is associated with the well permit activity API 47-033-05538.
- MWV Large Water Storage Pond 1 – Oil and Gas Inspector Gainer and Supervisor Campbell inspected on November 27th in fog conditions and findings were positive with no issues. Inspector and Supervisor report no corrective actions needed at this time. This is a large volume storage impoundment associated with the well permit activity API 47-067-0940, API 47-067-0941, API 47-067-0942, and API 47-067-0943.
- Plum Creek South Fork – Oil and Gas Inspector Gainer and Supervisor Campbell inspected on November 27th in rain and fog conditions. Findings were positive with no issues detected. Inspector and Supervisor report no corrective actions needed at this time. This is a large volume storage impoundment associated with the well permit activity API 47-025-00035, and API 47-025-00039.

Large impoundments and pits addressed in this WVU study are recognized under the regulatory authority of the OOG. In this state such structures did not enter into activities as a common practice for completions until the year 2007. Applications began then with the Marcellus completions containing high volumes of fracturing fluids and fracturing stages; those interests by industry remain so today. Various regulatory requirements are in place for large structures; this includes necessities for engineering controls, vigilant monitoring, OOG reviews, and regulatory assurances with routine and quality inspections. Presently one hundred sixty large impoundments and pits are on file and registered; few are closed and reclaimed yet new applications are submitted routinely.

In conclusion, the OOG recognizes a continuous need for in-house training programs provided for its field staff. Workshops for industry must continue. Also recognized are the needs for routine field visits and quality reviews by the OOG; this is predicted to improve by the on-going progress in the hiring additional Inspectors and the sustained training initiatives.

State of West Virginia
Office of Oil and Gas

INSPECTORS REPORT

Operator: Wako + ECA

API Number: 4902183

Findings:

UPON INSPECTION OF RECLAIMED FRESHWATER
 IMPOUNDMENT + FRAC FLUID PITS I FOUND BOTH
 HAVE BEEN RECLAIMED + HAD VEGETATION GROWING
 ON THEM AS OF 11/16/12 SOME VEGETATION IS
 SPOTTY ON IMPOUNDMENT THE VEGETATION ON THE
 FLOWBACK PIT IS IN GOOD CONDITION
 PICTURES 1-4 IMPOUNDMENT 4-10 - IS THE FLOWBACK
 PIT



Oil & Gas Inspector

11-16-12

Date

RECEIVED
 OFFICE OF OIL & GAS
 2012 NOV 21 P 1:16
 DEPARTMENT OF
 ENVIRONMENTAL PROTECTION

IMPOUNDMENT/PIT INSPECTION CHECKLIST

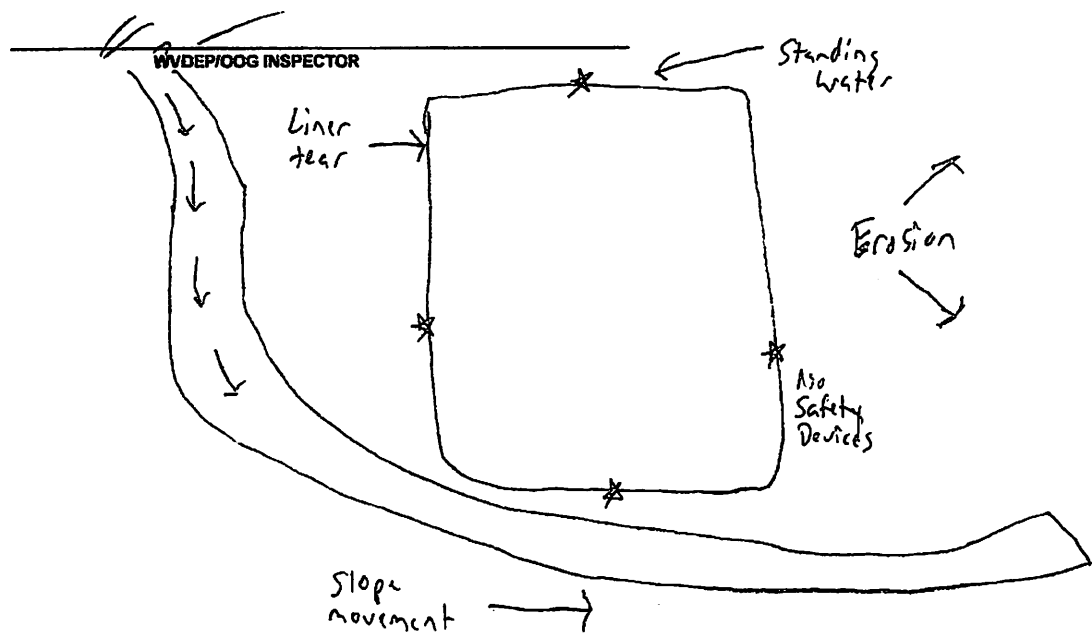
IR-11B 11/8/12

API# WHP-00277
 COMPANY Stone Energy
 WELL PAD _____
 DATE 11-30-12
 WEATHER CONDITIONS Sunny 53°
 CURRENT FREEBOARD(FT.) 15'
 GATED-YES NO _____ FENCING INTACT-YES NO _____
 STANDING WATER ON CREST-YES NO _____
 ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES _____ NO
 ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES NO _____
 ANY SEEPAGE EVIDENT ON FILL SLOPES-YES _____ NO ; IF YES, ESTIMATE FLOW _____
 DOES LINER APPEAR INTACT-YES _____ NO

INSPECTOR Derek M. Haught
 IMPOUNDMENT/PIT (NAME) Pribble FWI
 ASSOCIATED CENTRALIZED
 COMPANY PERSONNEL AT SITE Scott Hutson
 IS VEGETATION ADEQUATE-YES NO _____
 SIGNS & SAFETY-YES _____ NO
 SLOPE EROSION-YES NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. There are no safety devices around impoundment.
Stone has agreed to install safety equipment
2. Liner has small tear near anchor trench.
Stone has agreed to patch.
3. Minor slope movement along access road.
Stone has agreed to make necessary repairs to prevent further movement.
4. There is erosion on fill slope.
Stone has agreed to dress slope and re-seed/mulch.
5. There is standing water on the crest.
Stone has agreed to work crest to ensure proper drainage.



IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/18/12

AP# 051-01505

COMPANY Gaster Exploration USA, Inc.

INSPECTOR Derek M. Haight

WELL PAD Burch Ridge

IMPOUNDMENT/PIT (NAME) Burch Ridge Wastewater Pit

DATE 11-28-12

ASSOCIATED CENTRALIZED

WEATHER CONDITIONS Sunny 39°

COMPANY PERSONNEL AT SITE Jerry Duell

CURRENT FREEBOARD (FT.) 7'

GATED--YES NO FENCING INTACT--YES NO

IS VEGETATION ADEQUATE--YES NO

STANDING WATER ON CREST--YES NO

SIGNS & SAFETY--YES NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST--YES NO

SLOPE EROSION--YES NO

ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES--YES NO

ANY SEEPAGE EVIDENT ON FILL SLOPES--YES NO ; IF YES, ESTIMATE FLOW _____

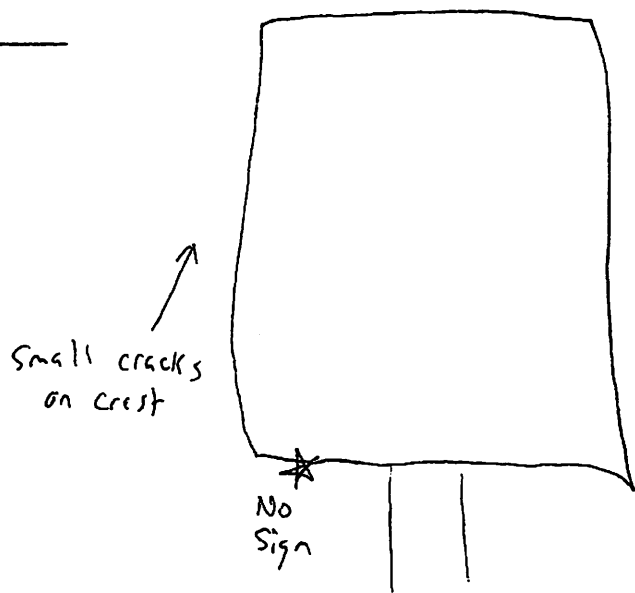
DOES LINER APPEAR INTACT--YES NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. There is no sign.
Gaster has agreed to have signs made and installed at all pits.

2. There are cracks on crest where water has been standing during wet periods.
Gaster has agreed to dress crest and seed/mulch.

[Signature]
WVDEP/OOG INSPECTOR



IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/0/12

API# 47-61-1622/1624
 COMPANY Northeast Natural Energy
 WELL PAD MIP
 DATE 11/27/12
 WEATHER CONDITIONS Rain/Snow
 CURRENT FREEBOARD(FT.) 13'4"
 GATED-YES NO FENCING INTACT-YES NO
 STANDING WATER ON CREST-YES NO
 ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES NO
 ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES NO
 ANY SEEPAGE EVIDENT ON FILL SLOPES-YES NO ; IF YES, ESTIMATE FLOW _____
 DOES LINER APPEAR INTACT-YES NO

INSPECTOR Sam Wood
 IMPOUNDMENT/PIT (NAME) MIP
 ASSOCIATED CENTRALIZED
 COMPANY PERSONNEL AT SITE Dave McDougal
 IS VEGETATION ADEQUATE-YES NO
 SIGNS & SAFETY-YES NO
 SLOPE EROSION-YES NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

Standing water on the crest of the impoundment is
minor areas which appear to be old tire track depressions.
There are some minor erosion areas that are being addressed
already. For the most part, any problems listed in the
Impoundment Study are minor at best, and some
I disagree with completely

Rain + Snow was not a hindrance to my inspection

SDW
11/28/2012

S-PDW III WV DEP
 WVDEP/OOG INSPECTOR

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

API# 095-02032

COMPANY Petro Edge

WELL PAD _____

DATE 11/23/12

WEATHER CONDITIONS Bunny 40°

CURRENT FREEBOARD (FT.) 3'

GATED-YES NO _____ FENCING INTACT-YES _____ NO _____

STANDING WATER ON CREST-YES _____ NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES NO _____


ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES _____ NO

ANY SEEPAGE EVIDENT ON FILL SLOPES-YES _____ NO ; IF YES, ESTIMATE FLOW _____

DOES LINER APPEAR INTACT-YES _____ NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

Pit lined was intact and very good condition.
Noted in report that cone & and ribs were found on
fill top but were above water level and not deep
enough to be structural or as failure problems



WIDEPIGGS INSPECTOR
Rick Campbell

INSPECTOR Ed Cooner Rick Campbell

IMPOUNDMENT/PIT (NAME) Bulk 115 # R

ASSOCIATED CENTRALIZED _____

COMPANY PERSONNEL AT SITE No

IS VEGETATION ADEQUATE-YES NO _____

SIGNS & SAFETY-YES NO _____

SLOPE EROSION-YES _____ NO

IMPOUNDMENT/PIT INSPECTION CHECKLIST

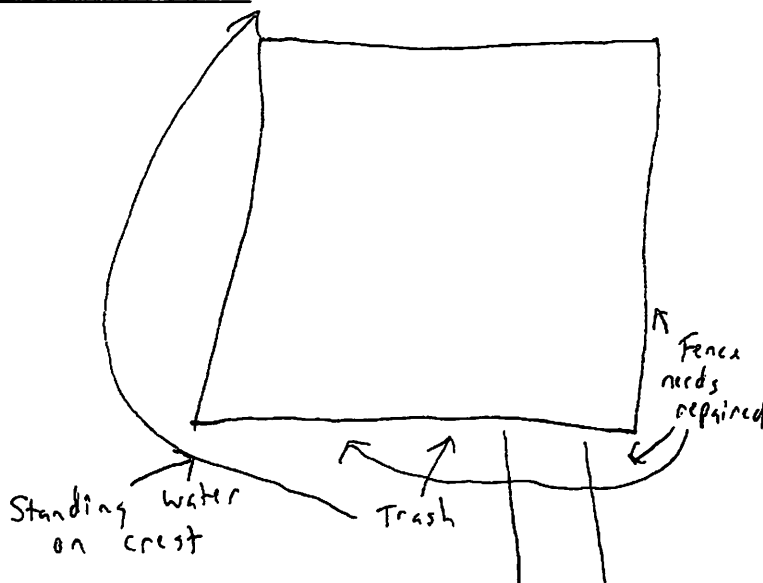
IR-11B 11/2/12

API# 103-02704
 COMPANY Stone Energy
 WELL PAD _____
 DATE 11-30-12
 WEATHER CONDITIONS Sunny 35°
 CURRENT FREEBOARD(FT.) 12'
 GATED-YES NO _____ FENCING INTACT-YES _____ NO
 STANDING WATER ON CREST-YES NO _____ IS VEGETATION ADEQUATE-YES NO _____
 ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES _____ NO SIGNS & SAFETY-YES NO _____
 ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES _____ NO SLOPE EROSION-YES _____ NO
 ANY SEEPAGE EVIDENT ON FILL SLOPES-YES _____ NO ; IF YES, ESTIMATE FLOW _____
 DOES LINER APPEAR INTACT-YES NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. Trash observed around impoundment.
Stone has agreed to address.
2. Fence is down in areas.
Stone has agreed to repair.
3. There is water standing on crest during wet periods.
Stone has agreed to work crest and ensure proper drainage.

[Signature]
WVDE/POG INSPECTOR



IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

API# 051-WPC-00001 WV-051-0001

COMPANY Noble Energy

INSPECTOR Derek M. Hought

WELL PAD

IMPOUNDMENT/PIT (NAME) SHL 2 Centralized Pit

DATE 11-29-12

ASSOCIATED CENTRALIZED

WEATHER CONDITIONS Sunny 34° 4'

COMPANY PERSONNEL AT SITE Clayton Murrell

CURRENT FREEBOARD(F.T.)

GATED-YES [checked] NO FENCING INTACT-YES [checked] NO

IS VEGETATION ADEQUATE-YES [checked] NO

STANDING WATER ON CREST-YES NO [checked]

SIGNS & SAFETY-YES [checked] NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES NO [checked]

SLOPE EROSION-YES NO [checked]

ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES NO [checked]

ANY SEEPAGE EVIDENT ON FILL SLOPES-YES NO [checked]; IF YES, ESTIMATE FLOW

DOES LINER APPEAR INTACT-YES [checked] NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. Minor amount of trash observed around pit. Noble has agreed to address.

Note: Bird netting has been installed.

[Signature] WVDEP/DOG INSPECTOR

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

AP# 051-WPE-00002 WV-051-0002

COMPANY Noble Energy

INSPECTOR Derek A. Haught

WELL PAD _____

IMPOUNDMENT/PIT (NAME) SHL 3 Centralized Pit

DATE 11-29-12

ASSOCIATED CENTRALIZED

WEATHER CONDITIONS Sunny 34°

COMPANY PERSONNEL AT SITE Clayton Murrell

CURRENT FREEBOARD(F.T.) 3'

GATED--YES NO _____ FENCING INTACT--YES NO _____

IS VEGETATION ADEQUATE--YES NO _____

STANDING WATER ON CREST--YES _____ NO

SIGNS & SAFETY--YES NO _____

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST--YES _____ NO

SLOPE EROSION--YES _____ NO

ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES--YES _____ NO

ANY SEEPAGE EVIDENT ON FILL SLOPES--YES _____ NO ; IF YES, ESTIMATE FLOW _____

DOES LINER APPEAR INTACT--YES NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. Minor amount of trash observed around pit.
Noble has agreed to address.

Note: Bird netting has been installed.

[Signature]
WVDEP/OOG INSPECTOR

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

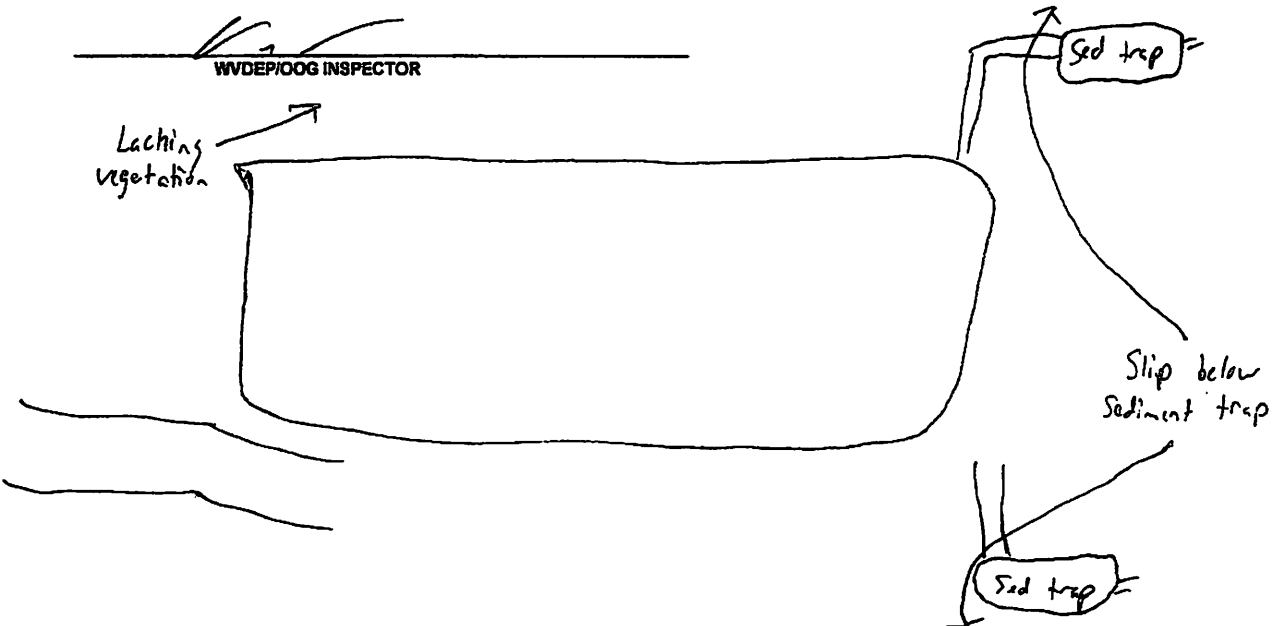
AP# 051-WPL-00003 051-WV-0003
 COMPANY Noble Energy INSPECTOR Derek M. Haught
 WELL PAD _____ IMPOUNDMENT/PIT (NAME) SHL 4 Centralized Pit
 DATE 11-29-12 ASSOCIATED CENTRALIZED
 WEATHER CONDITIONS Sunny 34° COMPANY PERSONNEL AT SITE Clayton Murrel
 CURRENT FREEBOARD(FT.) 31
 GATED-YES NO _____ FENCING INTACT-YES NO _____ IS VEGETATION ADEQUATE-YES NO _____
 STANDING WATER ON CREST-YES _____ NO SIGNS & SAFETY-YES NO _____
 ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES _____ NO SLOPE EROSION-YES _____ NO
 ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES _____ NO
 ANY SEEPAGE EVIDENT ON FILL SLOPES-YES _____ NO ; IF YES, ESTIMATE FLOW _____
 DOES LINER APPEAR INTACT-YES NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. There are areas where the vegetation could be improved.
 Noble has agreed to address vegetation concerns next spring.

2. There are slips below both sediment traps.
 Noble has agreed to repair slips. In order to repair, sediment traps will be removed and replaced by vegetative strips.

Note: Bird netting has been installed.



IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

API# 051-01533
 COMPANY Gaster Exploration USA, Inc
 WELL PAD Shields
 DATE 11-28-12
 WEATHER CONDITIONS Sunny 36°
 CURRENT FREEBOARD (FT.) 14'
 GATED-YES NO FENCING INTACT-YES NO IS VEGETATION ADEQUATE-YES NO
 STANDING WATER ON CREST-YES NO SIGNS & SAFETY-YES NO
 ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES NO SLOPE EROSION-YES NO
 ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES NO
 ANY SEEPAGE EVIDENT ON FILL SLOPES-YES NO ; IF YES, ESTIMATE FLOW _____
 DOES LINER APPEAR INTACT-YES NO

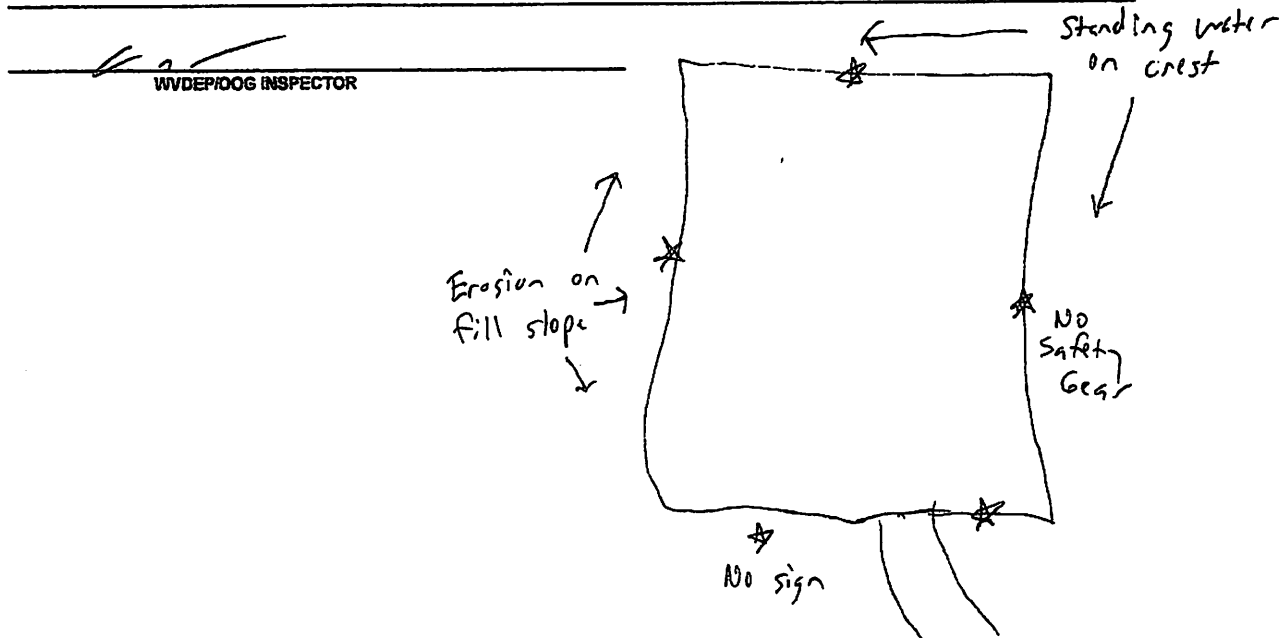
INSPECTOR Derek M. Haught
 IMPOUNDMENT/PIT (NAME) Shields Wastewater Pit
 ASSOCIATED CENTRALIZED
 COMPANY PERSONNEL AT SITE Jerry Doolley

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

1. There is no sign or safety equipment
 Gaster has agreed to install sign and safety equipment.

2. There are minor erosion areas on fill slope.
 Gaster has agreed to dress areas and install straw matting.

3. There is standing water on crest.
 Gaster has agreed to work crest to ensure proper drainage.



IMPOUNDMENT/PIT INSPECTION CHECKLIST

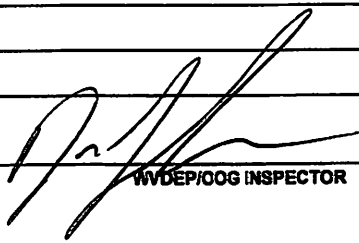
IR-11B 11/8/12

API# 47-33 05570
COMPANY Antero
WELL PAD Flannigan
DATE 27 Nov 12
WEATHER CONDITIONS Light snow/Rain
CURRENT FREEBOARD(FT.) 3
GATED--YES NO FENCING INTACT--YES NO
STANDING WATER ON CREST--YES NO small puddles
ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST--YES NO
ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES--YES NO
ANY SEEPAGE EVIDENT ON FILL SLOPES--YES NO ; IF YES, ESTIMATE FLOW _____
DOES LINER APPEAR INTACT--YES NO

INSPECTOR Tristan Jenkins
IMPOUNDMENT/PIT (NAME) impoundment
ASSOCIATED CENTRALIZED
COMPANY PERSONNEL AT SITE Terry Wycoff
IS VEGETATION ADEQUATE--YES NO
SIGNS & SAFETY--YES NO
SLOPE EROSION--YES NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

small puddles on liner and in ditch
due to rain



WVDEP/OOG INSPECTOR

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/18/12

API# 47-33-05538

COMPANY Antero

WELL PAD LARRY

DATE 27 Nov 12

WEATHER CONDITIONS Light snow/RAIN

CURRENT FREEBOARD(FT.) 3

GATED--YES NO

FENCING INTACT--YES NO

STANDING WATER ON CREST--YES NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST--YES NO

ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES--YES NO

ANY SEEPAGE EVIDENT ON FILL SLOPES--YES NO

DOES LINER APPEAR INTACT--YES NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

some standing water due to RAIN on crest

small erosion trench on fill slope

No corrective action needed at this time
Temporary impoundment to be closed in a few months

INSPECTOR Tristan Jenkins

IMPOUNDMENT/PIT (NAME) impoundment

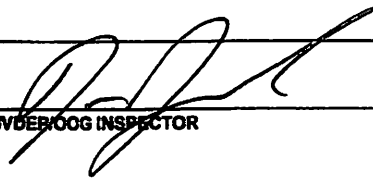
ASSOCIATED CENTRALIZED

COMPANY PERSONNEL AT SITE Terry Wycoff

IS VEGETATION ADEQUATE--YES NO

SIGNS & SAFETY--YES NO

SLOPE EROSION--YES NO


WDEP/DOG INSPECTOR

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/8/12

API# 47-067-0940, 0941, 0942, 0943

COMPANY BRC - Blue Scope Resources

INSPECTOR Ed Garner

WELL PAD Rupert Pad 1 & 2

IMPOUNDMENT/PIT (NAME) MUV - Meade Unit 2 Vaca

DATE 11/27/12

ASSOCIATED CENTRALIZED

WEATHER CONDITIONS Fog + cold

COMPANY PERSONNEL AT SITE _____

CURRENT FREEBOARD (FT.) 6 Ft +

Sam Sweatt

GATED - YES NO FENCING INTACT - YES NO

IS VEGETATION ADEQUATE - YES NO

STANDING WATER ON CREST - YES _____ NO

SIGNS & SAFETY - YES NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST - YES _____ NO

SLOPE EROSION - YES _____ NO

ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES - YES _____ NO

ANY SEEPAGE EVIDENT ON FILL SLOPES - YES _____ NO ; IF YES, ESTIMATE FLOW _____

DOES LINER APPEAR INTACT - YES NO _____

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

2nd inspection since WVI inspection, unable to find associate problems. Dike listed were dower tracking, no slope movement or slips were found, no seepage, no liner problems.

[Signature]
IMPOUNDMENT INSPECTOR
Richard Campbell

IMPOUNDMENT/PIT INSPECTION CHECKLIST

IR-11B 11/01/12

AP# 47-025-00038 + 025-00039

COMPANY BRC - Blue Scope Resources

INSPECTOR Ed Grainer

WELL PAD PCSF Pad #2

IMPOUNDMENT/PIT (NAME) PCSF Plant Cr. South FK.

DATE 11/27/12

ASSOCIATED CENTRALIZED

WEATHER CONDITIONS Rain + Fog

COMPANY PERSONNEL AT SITE

CURRENT FREEBOARD(FT.) 20'

Sam Sweatt

GATED-YES NO FENCING INTACT-YES NO

IS VEGETATION ADEQUATE-YES NO

STANDING WATER ON CREST-YES NO

SIGNS & SAFETY-YES NO

ANY CRACKS/SLUMPS/DEPRESSIONS ON CREST-YES NO

SLOPE EROSION-YES NO


ANY SLIPS, BULGES OR SLOPE MOVEMENTS ON FILL SLOPES-YES NO

ANY SEEPAGE EVIDENT ON FILL SLOPES-YES NO ; IF YES, ESTIMATE FLOW _____

DOES LINER APPEAR INTACT-YES NO

FOR ANY ANSWERS ABOVE, PROVIDE EXPLANATION AND ATTACH SKETCH OR COPY OF STRUCTURE FROM PLANS AND SHOW APPROXIMATE LOCATION OF FEATURES IDENTIFIED ABOVE. TAKE PHOTOS OF ANY FEATURES IDENTIFIED ABOVE, AND ATTACH THEM TO THIS INSPECTION REPORT.

2nd inspection since WVU report.
Unable to find rills, seepage, no slip bulges or
slope movement apparent. Trash in impoundment
was 1 pop bottle + some part top - wooden, not
safe to retrieve. Pump and plastic piping had
been removed. No problems were detected.


RICHARD CAMPBELL
INSPECTOR