



APPROVED

By Olivia Yu at 8:51 am, Sep 05, 2018

August 17, 2018

Spill Closure Report: Angell B No. 2 (Section 11 T17S R36E)
API: 30-025-39076
Incident Report: 1RP-5142

NMOCD approves
1RP-5142 for closure.

Prepared For: **Marathon Oil Permian LLC.**
5555 San Felipe Street
Houston, Texas 77056

NMOCD District 1
1625 N. French Drive,
Hobbs, New Mexico 88240

Ms. Olivia Yu/Ms. Christina Hernandez,

Marathon Oil Permian LLC. retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for an uncontrolled release of oil from a fire tube on the Angell B No. 2, API 30-025-39076 (hereafter referred to as "site") production pad. This letter provides a description of the remedial efforts and includes a request for Spill Closure.

Site Information

The site is located approximately 70 miles northeast of Carlsbad, New Mexico. The legal location for the site is Section 11, Township 17 South and Range 36 East in Lea County, New Mexico (approximately 32°51'22.1"N 103°19'18.73"W). More specifically, the API number for the site is 30-025-39076. An aerial photo and site schematic are included in Attachment 1.

The United States Department of Agriculture, Natural Resources Conservation Service, indicates the site's surface geology is comprised of Kimbrough loam with 0 to 1 percent slope. This series consists of soil is shallow, well drained, calcareous, and gravelly. The surface layer is dark grayish-brown with underlying material is white, indurated caliche. These descriptions are consistent with observation during the site visit. Site photographs obtained during the Spill Assessment are included in Attachment 2.

Incident Description

The spill, reported on July 12, 2018, involved the uncontrolled release of approximately 15 barrels (bbls) of oil from a fire tube inside containment at the production pad. The release was discovered by the operator who reported standing fluids in containment due to the fire tube leak. The operator reported that all fluid had been contained in the lined containment area measuring 30 ft. x 30 ft. There was no evidence of discharge outside the lined containment area noted during initial clean-up efforts. The Initial C-141 Report: 1RP-5142 is included in Attachment 3. The final C-141 requesting closure is included in Attachment 5.

Remedial Actions Taken

Initial spill response activities included the immediate removal of 12 bbls from within the lined secondary containment on the day of the incident, July 12, 2018. A site visit, completed on July 12, 2018 was conducted to observe any signs of visual impacts around the area in question. No impacts related to this incident were observed outside of the secondary containment and the integrity of the liner was confirmed during the site visit. Site photographs are included in Attachment 2. The site visit daily field report are included in Attachment 4.

Closure Request

Initial response, completed when the incident occurred, addressed immediate remedial concerns. 12 of the 15 bbls of free fluid was removed from inside lined secondary containment. In addition, contaminated caliche and gravel was removed from the lined containment area and hauled to a waste management facility. Finally, the liner was washed to remove any visible staining and inspected to ensure integrity. A visual inspection, completed by Vertex, confirmed that there were no impacts present related to this incident. Observations were completed within and outside of the lined containment. Based on this information, Marathon Oil Permian LLC. requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 281-977-7886 or dhanton@vertex.ca.

Sincerely,



Dhugal Hanton
VICE PRESIDENT

Attachments

- Attachment 1. Aerial Photograph
- Attachment 2. Site Photographs
- Attachment 3. Initial C-141 Report
- Attachment 4. Site Visit Daily Field Report
- Attachment 5. Final C-141 Report

References

New Mexico Oil Conservation Division. (1993). *Guidelines for Remediation of Leaks, Spills and Releases*. Santa Fe, New Mexico.

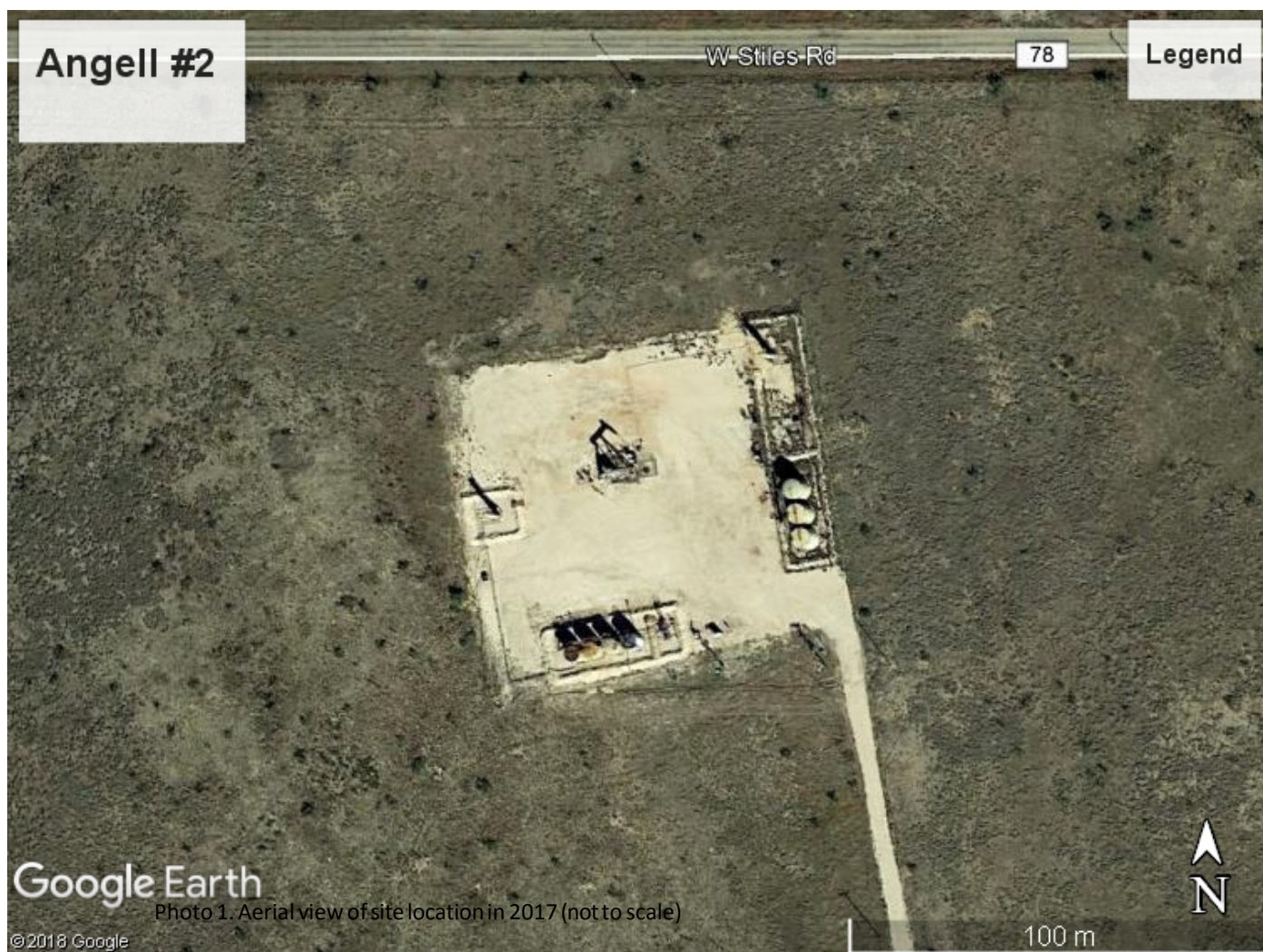
USDA Natural Resources Conservation Service. (2018) *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Limitations

This report has been prepared for the sole benefit of New Mexico Oil Conservation Division. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Marathon Oil Permian LLC. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1



ATTACHMENT 2



Photo 1. View of the secondary containment, liner after integrity inspection, looking west

Photo Date: July 14, 2018



Photo 2. View of the secondary containment, east bank, looking west

Photo Date: August 2, 2018



Photo 3. View of the secondary containment, east bank, looking west

Photo Date: August 2, 2018



Photo 4. View of the secondary containment, east bank, looking west

Photo Date: August 2, 2018



Photo 5. View of the secondary containment, northeast corner, looking southwest

Photo Date: August 2, 2018



Photo 6. View of the secondary containment, north bank, looking southwest

Photo Date: August 2, 2018



Photo 7. View of the secondary containment, northwest corner, looking southeast

Photo Date: August 2, 2018

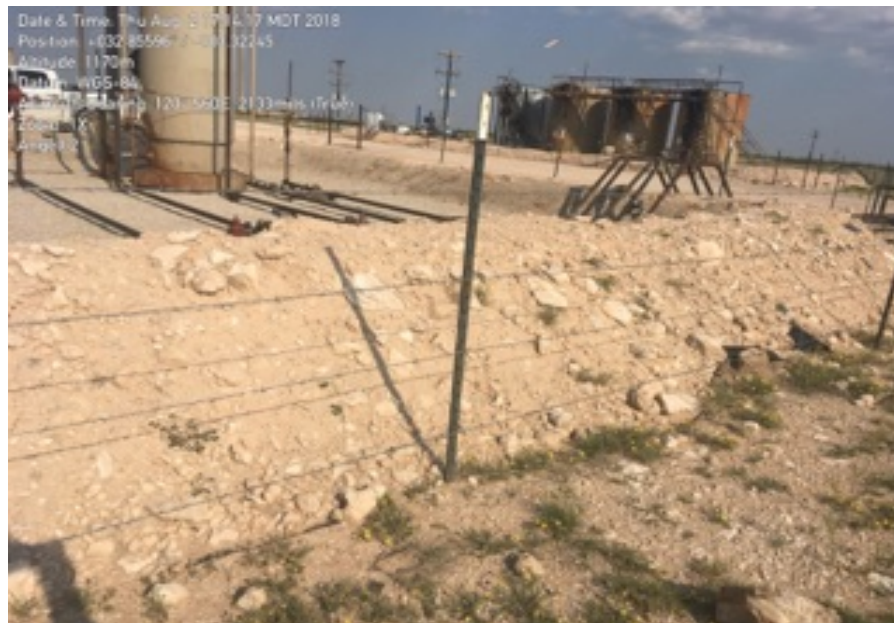


Photo 8. View of the secondary containment, west bank, looking southeast

Photo Date: August 2, 2018



Photo 9. View of the secondary containment, west bank, looking southeast

Photo Date: August 2, 2018



Photo 10. View of the secondary containment, southwest corner, looking northeast

Photo Date: August 2, 2018



Photo 11. View of the secondary containment, south bank, looking northeast

Photo Date: August 2, 2018



Photo 12. View of the secondary containment, south bank, looking north

Photo Date: August 2, 2018



Photo 13. View of the secondary containment, southeast corner, looking north

Photo Date: August 2, 2018



Photo 14. View of the interior, northeast corner of the secondary containment, looking northeast

Photo Date: August 2, 2018



Photo 15. View of the interior north bank of the secondary containment, looking northwest

Photo Date: August 2, 2018



Photo 16. View of the interior west bank of the secondary containment, looking west

Photo Date: August 2, 2018



Photo 17. View of the interior west bank of the secondary containment, looking southwest

Photo Date: August 2, 2018



Photo 18. View of the interior southwest bank of the secondary containment, looking southwest

Photo Date: August 2, 2018



Photo 19. View of the interior south bank of the secondary containment, looking south

Photo Date: August 2, 2018



Photo 20. View of the interior south bank of the secondary containment, looking southeast

Photo Date: August 2, 2018



Photo 21. View of the interior east bank of the secondary containment, looking east

Photo Date: August 2, 2018



Photo 22. View of the interior north bank of the secondary containment, looking northeast

Photo Date: August 2, 2018

ATTACHMENT 3

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

| | |
|--|---|
| Name of Company Marathon Oil Permian LLC | Contact Callie Karrigan |
| Address 5555 San Felipe Street, Houston, Texas 77056 | Telephone No. 405-202-1028 (cell) 575-297-0956 (office) |
| Facility Name: Angell B No. 2 | Facility Type Oil and gas production facilities |

| | | |
|----------------------------|-----------------------|------------------------|
| Surface: Owner: Fee | Mineral: Owner: state | API No. : 30-025-39076 |
|----------------------------|-----------------------|------------------------|

LOCATION OF RELEASE

| | | | | | | | | |
|------------------|---------------|-----------------|-------------|----------------------|-----------------------|-----------------------|---------------------|---------------|
| Unit Letter B | Section 11 | Township 17S | Range 36 | Feet from the 330 | North/South Line N | Feet from the 1650 | East/West Line E | County Lea |
|------------------|---------------|-----------------|-------------|----------------------|-----------------------|-----------------------|---------------------|---------------|

Latitude 32.855918 Longitude -103.321486

NATURE OF RELEASE

| | | |
|--|--|---|
| Type of Release: oil | Volume of Release: 15 bbls | Volume Recovered: 12 bbls |
| Source of Release: heater treater | Date and Hour of Occurrence 7/12/18 time unknown | Date and Hour of Discovery 7/12/18 9:00 am |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Olivia Yu, Christina Hernandez and Ryan Mann via email | |
| By Whom? Callie Karrigan | Date and Hour 07/12/2018 6:10 pm | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

RECEIVED

By Olivia Yu at 9:20 am, Aug 02, 2018


Describe Cause of Problem and Remedial Action Taken.*

At 9:00 am, Operator reported standing fluids in containment due to a fire tube leak. The release was contained in lined containment, affecting a 30x30 ft area.

Describe Area Affected and Cleanup Action Taken.*

Standing fluids were recovered via vac truck. Caliche and rock material were removed from containment for disposal. Liner will be assessed for integrity.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | | |
|--|--|-----------------------------------|
| Signature: <i>Callie Karrigan</i> | OIL CONSERVATION DIVISION | |
| Printed Name: Callie Karrigan | Approved by Environmental Specialist:  | |
| Title: HES Professional | Approval Date: 8/2/2018 | Expiration Date: |
| E-mail Address: cnkarrigan@marathonoil.com | Conditions of Approval: | Attached <input type="checkbox"/> |
| Date: 07/26/18 Phone: 405-02-1028(cell) 575-297-0956 (office) | Please inspect liner in question. Provide NMOCD with a concise report of the inspection with affirmation the liner has and will continue to contain liquids. | |

* Attach Additional Sheets If Necessary

1RP-5142

nOY1821433850

pOY1821434106



Operator/Responsible Party,

The OCD has received the form C-141 you provided on 7/26/2018 regarding an unauthorized release. The information contained on that form has been entered into our incident database and remediation case number 1RP-5142 has been assigned. **Please refer to this case number in all future correspondence.**

It is the Division's obligation under both the Oil & Gas Act and Water Quality Act to provide for the protection of public health and the environment. Our regulations (19.15.29.11 NMAC) state the following,

The responsible person shall complete division-approved corrective action for releases that endanger public health or the environment. The responsible person shall address releases in accordance with a remediation plan submitted to and approved by the division or with an abatement plan submitted in accordance with 19.15.30 NMAC. [emphasis added]

Release characterization is the first phase of corrective action unless the release is ongoing or is of limited volume and all impacts can be immediately addressed. Proper and cost-effective remediation typically cannot occur without adequate characterization of the impacts of any release. Furthermore, the Division has the ability to impose reasonable conditions upon the efforts it oversees. **As such, the Division is requiring a workplan for the characterization of impacts associated with this release be submitted to the OCD District 1 office in Hobbs on or before 9/2/2018. If and when the release characterization workplan is approved, there will be an associated deadline for submittal of the resultant investigation report. Modest extensions of time to these deadlines may be granted, but only with acceptable justification.**

The goals of a characterization effort are: 1) determination of the lateral and vertical extents along with the magnitude of soil contamination. 2) determine if groundwater or surface waters have been impacted. 3) If groundwater or surface waters have been impacted, what are the extents and magnitude of that impact. 4) The characterization of any other adverse impacts that may have occurred (examples: impacts on vegetation, impacts on wildlife, air quality, loss of use of property, etc.). To meet these goals as quickly as possible, the following items must, at a minimum, be addressed in the release characterization workplan and subsequent reporting:

- Horizontal delineation of soil impacts in each of the four cardinal compass directions. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. This is not an exclusive list of potential contaminants. Analyzed parameters should be modified based on the nature of the released substance(s). Soil sampling must be both within the impacted area and beyond.
- Vertical delineation of soil impacts. Adsorbed soil contamination must be characterized for the following constituents using the associated laboratory methods: benzene, toluene, ethylbenzene, and total xylenes by either Method 8260 or 8021, total petroleum hydrocarbons by Method 8015 extended range (GRO+DRO+MRO; C₆ thru C₃₆), and for chloride by Method 300. As above, this is not an exclusive list of potential contaminants and can be modified. Vertical characterization samples should be taken at depth intervals no greater than five feet apart. Lithologic description of encountered soils must also be provided. At least ten vertical feet of soils with contaminant concentrations at or below these values must be demonstrated as existing above the water table.
- Nominal detection limits for field and laboratory analyses must be provided.
- Composite sampling is not generally allowed.
- Field screening and assessment techniques are acceptable (headspace, titration, EC [include algorithm for validation purposes], EM, etc.), but the sampling and assay procedures must be clearly defined. Copies of field notes are highly desirable. A statistically significant set of split samples must be submitted for confirmatory laboratory analysis, including the laterally farthest and vertically deepest sets of soil samples. Make sure there are at least two soil samples submitted

for laboratory analysis from each borehole or test pit (highest observed contamination and deepest depth investigated). Copies of the actual laboratory results must be provided including chain of custody documentation.

- Probable depth to shallowest protectable groundwater and lateral distance to nearest surface water. If there is an estimate of groundwater depth, the information used to arrive at that estimate must be provided. If there is a reasonable assumption that the depth to protectable water is 50 feet or less, the responsible party should anticipate the need for at least one groundwater monitoring well to be installed in the area of likely maximum contamination.

- If groundwater contamination is encountered, an additional investigation workplan may be required to determine the extents of that contamination. Groundwater and/or surface water samples, if any, must be analyzed by a competent laboratory for volatile organic hydrocarbons (typically Method 8260 full list), total dissolved solids, pH, major anions and cations including chloride and sulfate, dissolved iron, and dissolved manganese. The investigation workplan must provide the groundwater sampling method(s) and sample handling protocols. To the fullest extent possible, aqueous analyses must be undertaken using nominal method detection limits. As with the soil analyses, copies of the actual laboratory results must be provided including chain of custody documentation.

- Accurately scaled and well-drafted site maps must be provided providing the location of borings, test pits, monitoring wells, potentially impacted areas, and significant surface features including roads and site infrastructure that might limit either the release characterization or remedial efforts. Field sketches may be included in subsequent reporting, but should not be considered stand-alone documentation of the site's layout. Digital photographic documentation of the location and fieldwork is recommended, especially if unusual circumstances are encountered.

Nothing herein should be interpreted to preclude emergency response actions or to imply immediate remediation by removal cannot proceed as warranted. Nonetheless, characterization of impacts and confirmation of the effectiveness of remedial efforts must still be provided to the OCD before any release incident will be closed.

Jim Griswold

OCD Environmental Bureau Chief
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505-476-3465
jim.griswold@state.nm.us

ATTACHMENT 4

Client Name: Marathon Oil Permian LLC
 Client Contact: Callie Karrigan
 Vertex File No.: 18E-02112
 Vertex Personnel: Jason Crabtree

Site Name: Angell B No. 2
 API Number: 30-025-03796
 OCD Spill Ref #: 1RP-5142
 Inspection Date: July-13-2018

| Background | | | |
|--|-----------------|---|----------------------|
| Area Affected: | | Volume Spilled: 15 bbls Volume Recovered: 12 bbls | |
| 07/12/2018: Operator reported standing fluids inside containment due to a fire tube leak. Recovered oil from lined containment with vacuum truck. Caliche and rock material removed from containment for disposal, liner checked for integrity. | | | |
| Description of Site Observations | | | |
| Surface Location: Angell B No. 2 located in Section 11 T17S R36E Inspected spill area for historical impacts and clean-up activities, if any. Heater treater is in a lined containment. No visual impacts (staining) were observed outside the secondary containment. | | | |
| Follow up/Recommendations | | | |
| Spill closure recommended. No evidence of historical impacts within lined secondary containment or outside lined secondary containment. | | | |
| Areas of Concern/Observations | | | |
| Area of Interest | Trimble Mapping | | Comments/Description |
| | Area | Point | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Project Supervisor: Dhugal Hanton

Project Team: Jason Crabtree

Client Name: Marathon Oil Permian LLC
 Client Contact: Callie Karrigan
 Vertex File No.: 18E-02112
 Vertex Personnel: Jason Crabtree

Site Name: Angell B No. 2
 API Number: 30-025-03796
 OCD Spill Ref #: 1RP-5142
 Inspection Date: July-13-18

| Photo Log | | | |
|-----------|-----------|-------|---|
| Name | Direction | Issue | Description |
| 1094 | West | | Outside Secondary Containment east bank |
| 1095 | West | | Outside Secondary Containment east bank |
| 1096 | West | | Outside Secondary Containment looking west |
| 1097 | NEC | | Outside Secondary Containment looking southwest |
| 1098 | North | | Outside Secondary Containment looking southeast |
| 1099 | Northwest | | Outside Secondary Containment looking southeast |
| 1100 | West | | Outside Secondary Containment looking southeast |
| 1101 | West | | Outside Secondary Containment looking southeast |
| 1102 | NEC | | Outside Secondary Containment looking northeast |
| 1103 | South | | Outside Secondary Containment looking northeast |
| 1104 | South | | Outside Secondary Containment looking north |
| 1105 | Southeast | | Outside Secondary Containment looking north |
| 1106 | NEC | | Outside Secondary Containment looking northeast |
| 1107 | North | | Outside Secondary Containment looking northwest |
| 1108 | West | | Outside Secondary Containment looking west |
| 1109 | West | | Outside Secondary Containment looking southwest |
| 1110 | Southwest | | Outside Secondary Containment looking southwest |
| 1111 | West | | Outside Secondary Containment looking south |
| 1112 | Southwest | | Inside Secondary Containment looking southeast |
| 1113 | South | | Inside Secondary Containment looking south |
| 1114 | South | | Inside Secondary Containment looking southeast |
| 1115 | East | | Inside Secondary Containment looking east |
| 1116 | North | | Inside Secondary Containment looking northeast |

Project Supervisor: Dhugal Hanton

Project Team: Jason Crabtree

ATTACHMENT 5

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., 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-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

| | |
|--|---|
| Name of Company Marathon Oil Permian LLC | Contact Callie Karrigan |
| Address 5555 San Felipe Street, Houston, Texas 77056 | Telephone No. 405-202-1028 (cell) 575-297-0956 (office) |
| Facility Name: Angell B No. 2 | Facility Type Oil and gas production facilities |

| | | |
|----------------------------|-----------------------|------------------------|
| Surface: Owner: Fee | Mineral: Owner: state | API No. : 30-025-39076 |
|----------------------------|-----------------------|------------------------|

LOCATION OF RELEASE

| | | | | | | | | |
|------------------|---------------|-----------------|-------------|----------------------|-----------------------|-----------------------|---------------------|---------------|
| Unit Letter B | Section 11 | Township 17S | Range 36 | Feet from the 330 | North/South Line N | Feet from the 1650 | East/West Line E | County Lea |
|------------------|---------------|-----------------|-------------|----------------------|-----------------------|-----------------------|---------------------|---------------|

Latitude 32.855918 Longitude -103.321486

NATURE OF RELEASE

| | | |
|--|--|---|
| Type of Release: oil | Volume of Release: 15 bbls | Volume Recovered: 12 bbls |
| Source of Release: heater treater | Date and Hour of Occurrence 7/12/18 time unknown | Date and Hour of Discovery 7/12/18 9:00 am |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Olivia Yu, Christina Hernandez and Ryan Mann via email | |
| By Whom? Callie Karrigan | Date and Hour 07/12/2018 6:10 pm | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. | |

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

APPROVED
By Olivia Yu at 8:52 am, Sep 05, 2018


Describe Cause of Problem and Remedial Action Taken.*

At 9:00 am, Operator reported standing fluids in containment due to a fire tube leak. The release was contained in lined containment, affecting a 30x30 ft area.

Describe Area Affected and Cleanup Action Taken.*

Standing fluids were recovered via vac truck. Caliche and rock material were removed from containment for disposal. Liner was inspected for integrity. Site visit was performed to verify no impacts are outside of containment.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

| | | |
|--|---|------------------------------------|
| Callie Karrigan Signature: | OIL CONSERVATION DIVISION | |
| Printed Name: Callie Karrigan | Approved by Environmental Specialist:  | |
| Title: HES Professional | Approval Date: 9/5/2018 | Expiration Date: xx/xx/xxxx |
| E-mail Address: cnkarrigan@marathonoil.com | Conditions of Approval: Like approval from NMSLO. | Attached <input type="checkbox"/> |
| Date: 08/10/2018 Phone: 405-202-1028(cell), 575-297-0956 (office) | | |

* Attach Additional Sheets If Necessary

1RP-5142