

JOINT INVESTIGATION REPORT

INCIDENT NO: 2835839 JIV report S/N: 0657

(Note: As practicable as possible the JIV report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2835839 2. Type of incident* OIL SPILL
3. Name of Location 28" BOMU - BONNY PIPELINE
4. Name of nearest community FREETOWN 5. State: RIVERS 6. LGA ANDONI
7. Production Facility/Installation OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LTD (SPDC) / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 18TH JANUARY 2021
b. Start date/time of Investigation: 18TH JANUARY 2021 / 1330HRS
c. Investigation End date: 19TH JANUARY 2021 Day(s) on site: TWO (2) DAYS
d. Description of spill point environment

- | | | |
|---|--|--|
| <input type="checkbox"/> Firm soil | <input type="checkbox"/> Loose soil | <input type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input checked="" type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on water) | <input type="checkbox"/> Drill Rig | <input type="checkbox"/> Sand bag(s) |

Additional observations around the spill point: THE SPILL INCIDENT RESULTED FROM AN ALREADY REPORTED ILLEGAL CONNECTION (IC) WITH INCIDENT NUMBER 2833203.

e. Description of leak point (tick as applicable);

- | | | |
|--|---|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input type="checkbox"/> Hack saw cut |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input checked="" type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Tear (_____) | | |
| <input type="checkbox"/> Others (specify) _____ | | |

f. Incident caused by:

- ☒ Third party interference (Sabotage ☐; crude theft ☒; Line theft ☐; Accidental 3rd party damage ☐
☐ Operational ☐ Others (including Mystery spills) _____

*This can be: (a) Oil Spill (b) Drilling fluid/Chemical (c) Siltation (d) Water Leak (e) Fire (f) Non-leaking theft point removal

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g. Spill Point Coordinates (*Incidents $\leq 100m$ apart to be aggregated into one Joint Investigation Report)

h. Measuring unit

(WGS84)

| Northing: | Easting: |
|-----------|----------|
| 4.51589 | 7.23298 |
| | |
| | |

C. RISK ASSESSMENT

10. Details of Environment

i. Type of environment where spill occurred (select one):

☐ Land ☒ Swamp ☐ Water ☐ Seasonal swamp ☐ Shoreline/Waterfront

ii. Type of environment to which oil has spread:

☐ Land ☒ Swamp ☐ Waterbody (specify) _____

iii. Weather condition

☐ Dry ☐ Wet ☐ Windy ☒ Hot

11. Distance to Sensitive habitat within 100m radius

- ☐ Government reserved and designated protected area
- ☐ Drinking water source
 - ☐ Surface water ☐ Borehole
- ☐ Built up Area
 - ☐ Residential Area ☐ Commercial/Industrial Area
- ☐ Farmlands
- ☐ Fish Farm/Pond
- ☐ Fishing net
- ☐ Others (specify) _____

[.m]
[.m]
[.m]
[.m]
[.m]
[.m]
[.m]
[.m]

} NONE SEEN
WITHIN
VICINITY

12. Containment measures put in place:

☐ Booms ☐ Trench ☐ Dyke ☐ Pit ☐ Natural depression ☒ None

☐ Others: _____

13. Any pictures or video coverage?

[X] [N]

14. Further response/repair initiated as at the time of JIV?

[X] [N]

If yes to item 14, give brief description:

IN-SERVICE WELDING USING SPLIT-TEE

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15. Was there any disruption to the investigation?

[Y] [X]

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed?

[Y] [X]

Reason(s): NOT APPLICABLE

☐ Delayed Community Access Approval

☐ Security Challenges

☐ Access constraint due to terrain

☐ Others (specify) _____

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

17. Structures / Properties

| S/N | Type of Structures | Description | Size | Number | Comments |
|-----|-----------------------------------|-------------|------|--------|----------|
| | <u>NONE WITHIN AREA OF IMPACT</u> | | | | |

18. Crops/Economic Trees

| S/N | Type of crops | Young | Medium | Matured | Quantity | Comments |
|-----|-----------------------------------|-------|--------|---------|----------|----------|
| | <u>NONE WITHIN AREA OF IMPACT</u> | | | | | |

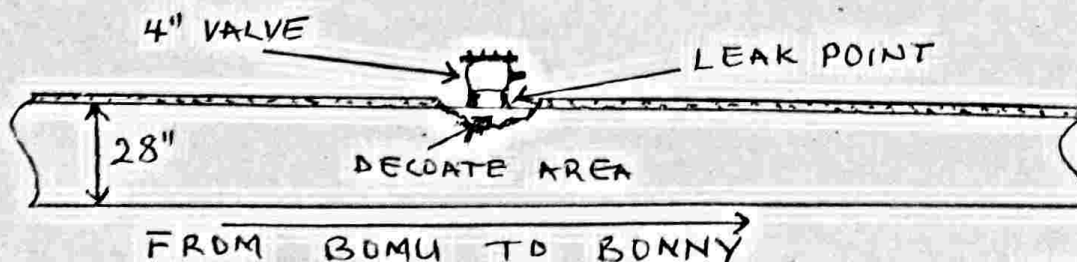
19. Fish/Nets/Ponds

| S/N | Fish/Nets/Ponds | Description | Quantity/Size | Comments |
|-----|-----------------------------------|-------------|---------------|----------|
| | <u>NONE WITHIN AREA OF IMPACT</u> | | | |

20. Others (Specify) e.g. Animal Traps

| S/N | Others | Description | Quantity/Size | Comments |
|-----|-----------------------------------|-------------|---------------|----------|
| | <u>NONE WITHIN AREA OF IMPACT</u> | | | |

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detailed description of the leak point should be contained in the leak report, overview sketch of the site should be added as appendix 1) A SECTION OF 28" BOMU - BONNY PIPELINE AT FREETOWN SHOWING A 4" CRUDE OIL THEFT VALVE INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSON(S).



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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

21. Impacted area boundary Coordinates (If more, Print and attach as Appendix)

[illegible]

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.0035 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W NO

* Round off to 2 decimal places if area is $\geq 100 \text{ m}^2$ or to 4 decimal places if area is $< 100 \text{ m}^2$ (e.g. 14.55, 0.0051, 0.0009)
* Express in Hectares (Ha)

b. Volume of oil recovered before completion of JIV (V_{rec}):

| | | |
|---------------------------|------------|---------|
| Recovered oil V_{rec} : | <u>NIL</u> | Barrels |
|---------------------------|------------|---------|

Controlled recovery/evacuation from source with no impact to environment:

| | |
|------------|---------|
| <u>NIL</u> | Barrels |
|------------|---------|

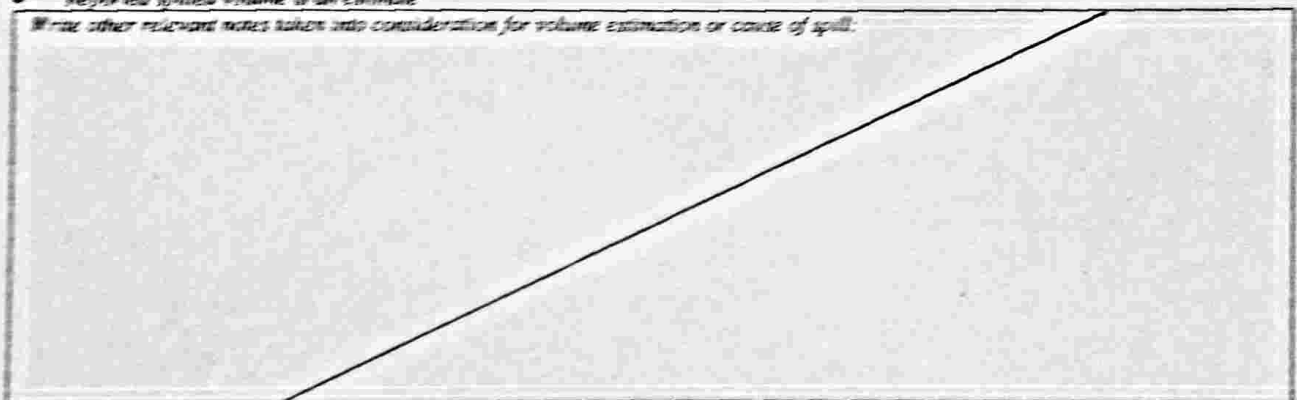
c. Net Estimated Spilled Volume $V_{est}(\text{bbls})^* = 1.26 \text{ BARRELS}$

Estimated Reported Volume** $V_{rep}(\text{bbls}) = 2 \text{ BARRELS}$

*Notes:

- Volume estimation was done using an excel based tool (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for volume estimation or cause of spill:



Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site; Conversion of m^3 to barrels is $\text{Volume (m}^3) \times 6.29$; **Round up estimated volume to next whole number using the following rules:

- Any spill volume in excess of 1 bbl is rounded up to the next whole number.
- Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl — Reported volume = 16 bbl
Calculated volume = 0.35 bbl — Reported volume = 0.4 bbl
Calculated volume = 0.01 bbl — Reported volume = 0.1 bbl.

Whenever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

- | | |
|---|-------------------------------------|
| i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out | <input type="checkbox"/> |
| ii. Investigation of the incident site showed that there is residual impact on site requiring further works | <input checked="" type="checkbox"/> |

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

- Host Community: ☒
- Department of Petroleum Resources [DPR]: ☐
- National Oil Spill Detection and Response Agency [NOSDRA]: ☒
- State Ministry of Environment [SME]: ☒
- The Shell Petroleum Development Company [SPDC]: ☒
- *Separate DPR form has been filled out with same findings* ☐
- *Separate NOSDRA form has been filled out with same findings* ☒
- *Separate SME form has been filled out with same findings* ☒

Tick as applicable

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f. Appendix 1: Overview sketch of the site

