

JOINT INVESTIGATION REPORT

INCIDENT NO: 2978048 JIV report S/N: 0000886

(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: 2978048 2. Type of incident* OIL SPILL
3. Name of Location 16" NUN RWER-KOLO CREEK PIPELINE
4. Name of nearest community OTUEGWÉ 5. State: BAYELSA 6. LGA: OGBIA
7. Production Facility/Installation OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC)/PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident

- a. Date Reported: 25TH JUNE, 2021
b. Start date/time of Investigation: 29TH JUNE, 2021 / 14:15 HRS
c. Investigation End date: 29TH JUNE, 2021 Day(s) on site: ONE (1) DAY
d. Description of spill point environment

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Firm soil | <input type="checkbox"/> Loose soil | <input checked="" type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input 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:

NOT APPLICABLE

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

- | | | |
|--|---|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input checked="" type="checkbox"/> Hack saw cut |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent | <input type="checkbox"/> Well head tampering |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp | <input type="checkbox"/> Missing Pipeline Flowline |
| <input type="checkbox"/> Crude oil theft (illegal bunkering) point | <input type="checkbox"/> Saver-pin 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) Situation (d) Water Leak (e) Fire (f) Non-leaking shut point removal

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Distribution of copies: White (Asset Owner), Pink (DPR), Green (NCS/DRA), Yellow (State Ministry of Environment), Blue (Host Community)

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

h. Measuring unit WGS 84

Northing:	Easting:
<u>4.844434</u>	<u>6.237520</u>

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) FLOOD WATER

iii. Weather condition

- Dry Wet Windy Hot

11. Distance to Sensitive habitat within 100m radius

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

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

If yes to item 14, give brief description:

REPAIR BY CLAMPING

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15. Was there any disruption to the investigation? [Y] [X]

[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

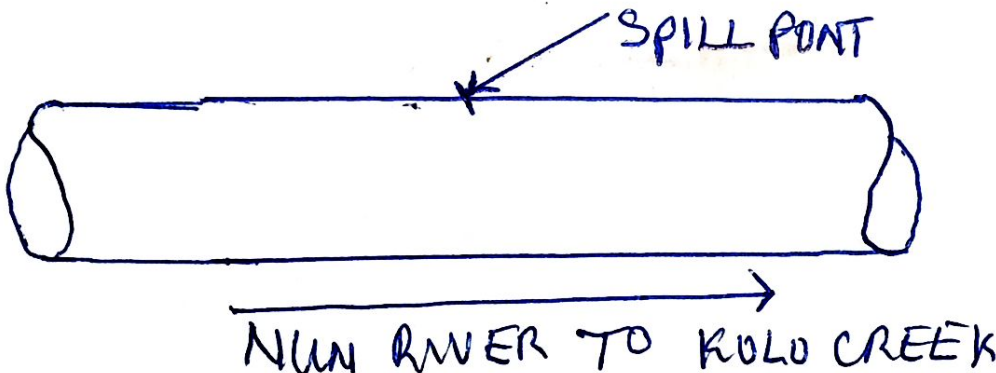
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
	<u>NONE WITHIN AREA OF IMPACT</u>			

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 16" NUN RIVER - KOLO CREEK PIPELINE AT OTUEGWE SHOWING A HACK SAW CUT (2CM LENGTH) AT 1 O'CLOCK POSITION BY UNKNOWN PERSON(S)



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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.083 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

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

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume V_{Est} (bbls)* = 33.92 BBLS

Estimated Reported Volume V_{rep} (bbls) = 34 BBLS**

***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.

Wherever 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

