

JOINT INVESTIGATION REPORT

INCIDENT NO: 2626666 JIV report S/N: 0507

(Note: In any suitable or possible the JIV reports to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Incident Number: 2626666 2. Type of incident: OIL SPILL
3. Name of Location: 14th OKORDIA - RUMUKEFE PIPELINE AT OSHIKA
4. Name of nearest community: OSHIKA RIVERS LGA ANKARA WEST
7. Production Facility/Installation: CRUDE 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: 17th APRIL, 2020
b. Start date/time of investigation: 19th APRIL, 2020/1255HRS
c. Investigation End date: 21st APRIL, 2020 Day(s) on site: THREE DAYS
d. Description of spill point environment
 Firm soil Loose soil Recently excavated area
 Under water Swampy Exposed pipe surface
 Well Platform (on water) Drill Rig Sand bag(s)

Additional observations around the spill point:

- 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 type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipelines/Flange |
| <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 leak |
| <input type="checkbox"/> Tear (_____) | | |
| <input type="checkbox"/> Others (specify) _____ | | |

- i. 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) Silhouette (d) Water Leak (e) Fire (f) Non-working theft point corrected
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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>5.07738</u>	<u>6.55086</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) FLOODED PLAIN

iii. Weather condition

- Dry
 Wet
 Windy
 Hot

11. Distance to Sensitive habitat within 100m radius

- | | |
|---|-----------------|
| <input type="checkbox"/> Government reserved and designated protected area | [.m] |
| <input type="checkbox"/> Drinking water source | [.m] |
| <input type="checkbox"/> Surface water <input type="checkbox"/> Borehole | |
| <input type="checkbox"/> Built up Area | [.m] |
| <input type="checkbox"/> Residential Area <input type="checkbox"/> Commercial/Industrial Area | |
| <input checked="" type="checkbox"/> Farmlands | [<u>35</u> .m] |
| <input checked="" type="checkbox"/> Fish Farm/Pond | [<u>10</u> .m] |
| <input type="checkbox"/> Fishing net | [.m] |
| <input type="checkbox"/> Others (specify) _____ | [.m] |

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:

CLAMPING ACTIVITY ON-GOING

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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? [X] [N]

Reason(s):

- 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 SEEN WITHIN AREA OF IMPACT</u>					

18. Crops/Economic Trees

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

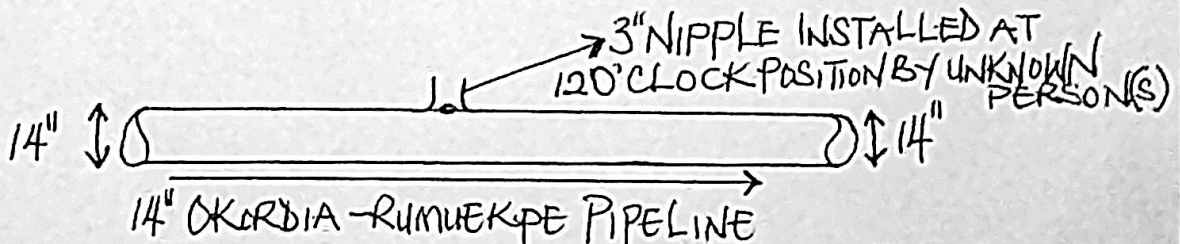
19. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
<u>1</u>	<u>POND</u>	<u>FAMILY POND</u>	<u>ONE</u>	<u>IMPACTED</u>

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

S/N	Others	Description	Quantity/Size	Comments
<u>NONE SEEN 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 14" OKORDIA-RUMUEKPE PIPELINE AT OSIKA SHOWING 3" NIPPLE INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSON(S).



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TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV PER AREA CALCULATIONS

1). Dependent area boundary Coordinates (if more than one attach as Appendix)

S.N	Northing	Easting
142	S. 07942	6. 54804
143	S. 07931	6. 54833
144	S. 07924	6. 54854
145	S. 07912	6. 54876
146	S. 07891	6. 54905
147	S. 07836	6. 54982
148	S. 07821	6. 55006
149	S. 07750	6. 55105
150	S. 07741	6. 55130
151	S. 07717	6. 55179
152	S. 07673	6. 55228
153	S. 07655	6. 55228
154	S. 07637	6. 55207
155	S. 07662	6. 55153
156	S. 07705	6. 55163
157	S. 07724	6. 55071
158	S. 07755	6. 55032
159	S. 07810	6. 54947
160	S. 07886	6. 54851
161	S. 07898	6. 54812
162	S. 07913	6. 54811
163	S. 07935	6. 54783
164	S. 07945	6. 54788

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E. INCIDENT INFORMATION

a. Impact Area Details *

- Total estimated area of impact (Ha) 2.72 Ha
- Impact within SPDC R.O.W. YES
- Impact outside SPDC R.O.W. YES

* Based off to 2 decimal places if area is < 100 m² or to 4 decimal places if area is > 100 m² (e.g. 14.33 6000 m² area)

* Express in Hectares (Ha)

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

Recovered oil V_{rec} NIL Barrels

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

NIL Barrels

c. Net Estimated Spilled Volume V_{net}(bbls)* = 153.12 BARRELS

Estimated Reported Volume** V_{est}(bbls): 154 BARRELS

*Notes:

- Volume estimation was done using an aerial 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

NOT APPLICABLE

Calculation of the respective estimated volume is to be done on site or for as practicable using the new spill volume estimation software on site. Conversion of m³ to barrels is Volume (m³) x 6.29 = 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 = 11.3 bbl — Reported volume = 12 bbl
Calculated volume = 0.25 bbl — Reported volume = 0.3 bbl
Calculated volume = 0.05 bbl — Reported volume = 0.1 bbl.

Wherever this estimation tool is not applicable please refer to paragraph 5c. (Derivation) of the JIV procedure to use appropriate steps for volume estimation, record the calculation on 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 JIV therefore recommend that the site be closed out
- ii. Investigation of the incident site showed that there is residual impact on site requiring further works

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

