

JOINT INVESTIGATION REPORT

INCIDENT NO: 1606362 JIV report S/N:

Nº: 0000156

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

A. GENERAL INFORMATION:

1. Spill incident Number: 1606362 2. Type of incident* OIL SPILL
3. Name of Location 20" KOLD CREEK - RUMUEKPE TRANS NIGER PIPELINE
4. Name of nearest community ODAY 5. State: RIVERS 6. LGA ABUA/ODUAL
7. Type of Production facility/Installation OIL PIPELINE
8. Asset owner/District THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED

B. INCIDENT INFORMATION:

9. Details of incident
a. Date of incident: 24TH MARCH 2016
b. Start date/time of investigation: 6TH APRIL 2016
c. Investigation End date: 7TH APRIL 2016 Actual investigation duration, days: TWO 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

Additional observations around the spill point: *AN ILLEGAL LONG PIPE AND HOSE CONNECTED TO THE THEFT POINT WAS OBSERVED.
*NO IMPACT WAS OBSERVED WITHIN SPDC RIGHT OF WAY.
*THE EXTENDED ILLEGAL PIPE AND HOSE CONNECTION LEAKED OUTSIDE SPDC RIGHT OF WAY.

- e. Description of leak point (tick as applicable);
 Drilled hole Hack saw cut Tear (_____)
 Complete Rupture Inward dent, Well head tampering
 Failed Weld-on illegal hot tap valve Failed Clamp, Missing Pipeline/Flowline
 Crude oil theft (illegal bunkering) point, Saver-pit over flow Third party tampering with Clamp
 Third party tampering with valve setting Bulging Outward Third party tampering with flange,
 Flare System/Bund wall failure Cold vent Surge vessel overflow,
 Valve Failure Relief valve failure Accidental 3rd party equipment impact
 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) construction e) Encroachment f) Fire.

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g. Spill point coordinates **INCIDENT POINT**
 h. Measuring unit

Northing: (WGS 84) LAT <div style="font-size: 2em; font-weight: bold; text-align: center;">4.928302</div>	Easting: (WGS 84) LONG <div style="font-size: 2em; font-weight: bold; text-align: center;">6.437303</div>

C. RISK ASSESSMENT

10. Type of environment:

- Land
 Swamp
 Water
 Seasonal swamp
 Shoreline/Waterfront

i. Type of environment to which oil has spread:

- Land
 Swamp
 Water
 River (identify) _____

ii. Weather condition

- Rain
 Sunny
 Dry
 Wet
 Windy
 Hot
 cool

11. Distance from the nearest sensitive habitat

- | | | |
|---|--|------------------------------------|
| <input type="checkbox"/> Government reserved and designated protected area
<input type="checkbox"/> Drinking water source
<input type="checkbox"/> Built up area
<input type="checkbox"/> Farmlands
<input type="checkbox"/> Fish Farm/Pond
<input type="checkbox"/> Fishing net
<input type="checkbox"/> Others (specify). | [.m]
[.m]
[.m]
[.m]
[.m]
[.m] | } NONE SEEN
WITHIN
VICINITY. |
|---|--|------------------------------------|

12. Containment measures put in place;

- Booms
 Trench
 Dyke
 Natural depression
 Pit
 None
 Others: _____

13. Any pictures or video coverage? [Y] [N]

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

If yes to item 14, give brief description:

RECOVERY WORK ON GOING WHILE
 TEMPORAL REPAIR BY SCREEN CAPPING COMPLETED.

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

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If yes to item 15 give brief description:

NOT APPLICABLE.

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

16. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
NONE WITHIN AREA OF IMPACT					

17. Crops/Economic Trees

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

18. Fishing Nets/Fish Ponds

S/N	Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

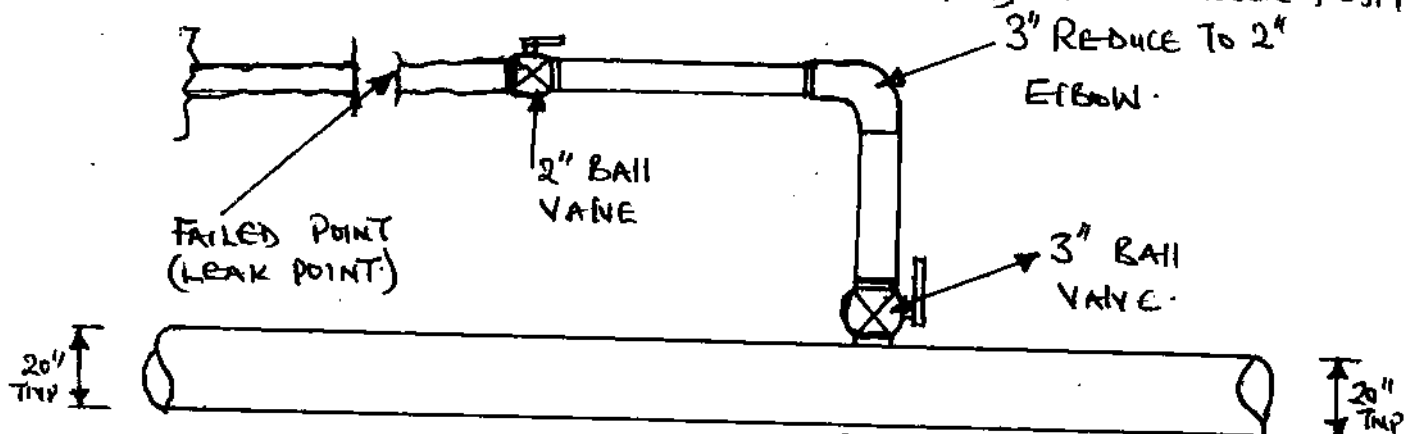
19. Others (Specify) i.e. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detail report of the leak point should be contained in the leak report, overview sketch of the site should be added as an appendix 1)

SECTIONAL VIEW OF 20" KOLOCREEK - RUMUEKPE TRANS NIGER PIPELINE
AT ODAU SHOWING:- FAILED ILLEGAL THEFT FITTING:-

* LEAK DUE TO 3" ILLEGAL THEFT FITTING INSTALLED AT 12° CLOCK POSITION.



KOLOCREEK - RUMUEKPE PIPELINE.

JIV ON 20" KOLOCREEK TO RUMUEKPE TNP AT ODAU

INCIDENT NUMBER: 2016_1606362

INCIDENT DATE: 24- MAR-2016

JIV DATE: 6, 7-APRIL 2016

(WGS 84)

PT_NO	PT_ID	LAT	LONG
1	INC.PT	4.928302	6.437303
2	PIPE HOSE	4.92857	6.43716
3	PIPE HOSE	4.9287	6.43708
4	PIPE HOSE	4.92909	6.4368
5	PIPE HOSE	4.92952	6.43618
6	PIPE HOSE	4.92954	6.43613
7	PIPE HOSE	4.92976	6.43597
8	PIPE HOSE	4.92996	6.43555
9	PIPE HOSE	4.9299	6.43523
10	PIPE HOSE	4.92998	6.43494
11	PIPE HOSE	4.92993	6.43354
12	PIPE HOSE	4.92999	6.43498
13	PIT	4.92873	6.43702
14	PIT	4.92874	6.43704
15	PIT	4.928705	6.437046
16	PIT	4.928717	6.437058
17	Boom	4.92807	6.43455
18	Boom	4.92813	6.43457
19	HEAVY	4.92883	6.43696
20	HEAVY	4.92885	6.43699
21	HEAVY	4.92894	6.43689
22	HEAVY	4.92901	6.43685
23	HEAVY	4.92979	6.43596
24	HEAVY	4.92983	6.43586
25	HEAVY	4.92984	6.43585
26	HEAVY	4.92992	6.43572
27	HEAVY	4.92993	6.4357
28	HEAVY	4.92989	6.43518
29	HEAVY	4.92981	6.4351
30	HEAVY	4.93002	6.43502
31	HEAVY	4.92806	6.43471
32	HEAVY	4.92815	6.43461
33	HEAVY	4.927922	6.433731
34	HEAVY	4.928071	6.434124
35	HEAVY	4.927967	6.434351
36	HEAVY	4.928028	6.434611
37	HEAVY	4.928444	6.434472
38	HEAVY	4.928389	6.435111
39	HEAVY	4.928194	6.435639
40	HEAVY	4.929868	6.43354
41	HEAVY	4.929871	6.433967
42	HEAVY	4.928844	6.433731

43	HEAVY	4.928878	6.433897
44	HEAVY	4.929867	6.433398
45	HEAVY	4.929996	6.433603
46	HEAVY	4.930007	6.433975
47	HEAVY	4.929916	6.435549
48	HEAVY	4.930007	6.435554
49	HEAVY	4.929864	6.435702
50	HEAVY	4.929717	6.43595
51	HEAVY	4.929546	6.436105
52	HEAVY	4.929488	6.436199
53	HEAVY	4.929517	6.436228
54	HEAVY	4.929045	6.436878
55	HEAVY	4.929423	6.433383
56	HEAVY	4.929419	6.433469
57	HEAVY	4.928278	6.434193
58	HEAVY	4.927881	6.43381



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G. INCIDENT INFORMATION:

a. Impacted Area Details

- Total calculated area of impact 1.40947 H²
- Impact within R.O.W NIL
- Impact outside R.O.W YES

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

Recovered oil V_{rec} :	<u>75</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)* =

347.41 BARRELS

Estimated Reported Volume V_{rep} (bbls) =** 348 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 estimating the spilled in the box below:

NOT APPLICABLE.

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 m³ to barrels is Volume (m³) x 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 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 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

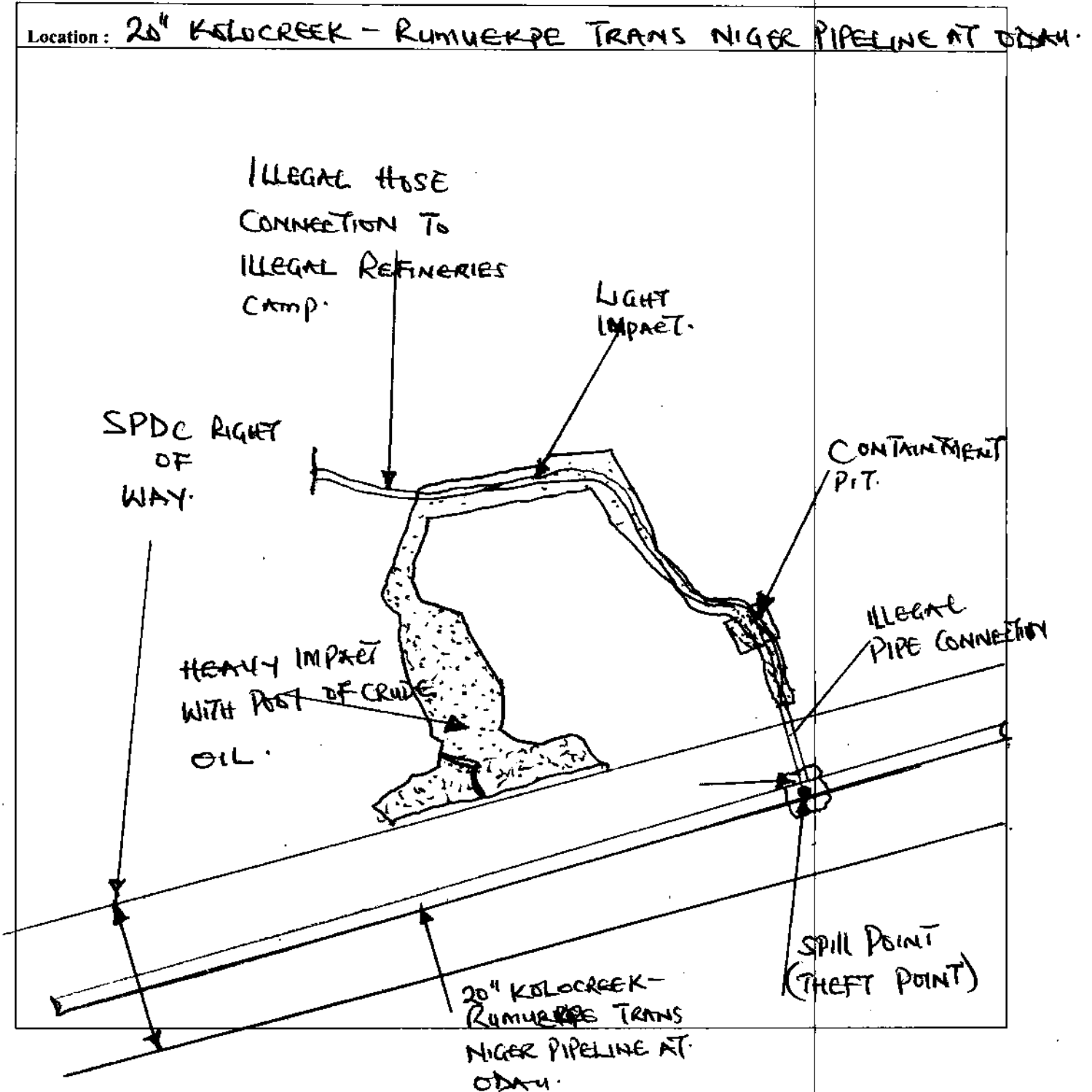
- This report was filled, agreed and signed by the following joint investigation team representatives:
- Host Community:
 - Department of Petroleum Resources [DPR]:
 - National Oil Spill Detection and Response Agency [NOSDRA]:
 - State Ministry of Environment [SME]:
 - Asset Owner:
 - Signatories agree with reported findings:
 - Separate DPR form has been filled out with same findings
- Tick as applicable*

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f. Appendix 1: Overview sketch of the site

Location: 20" KOLOCREEK - RUMUEKPE TRANS NIGER PIPELINE AT ODAY.



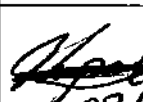

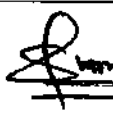



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g. SIGNATORIES: JOINT INVESTIGATION TEAM MEMBERS

Having read through the JIT report, the following representatives append their respective signatures in agreement with the content therein:

S/N	Name	Members present	Designation	Signature/Date and Time
1	ALHASSAN ABUSAMAL	DEPARTMENT OF PETROLEUM RESOURCES (DPR)	Geologist	 07/04/2016
2	ENAHLO RAPHAL	NATIONAL OIL SPILL DETECTION AND RESPONSE AGENCY (NOSDRA)	Environment Scientist	 07/04/2016
3	OGBURLU, GP. LUEIJE	STATE MIN. OF ENVIRONMENT	PSO	 07/04/2016
4	ANTHONY OYE IKORI	HOST COMMUNITY REPRESENTATIVE	OPDA 4 OPINION LEADER	 7/04/16
5	OKHURSE OHIS	ASSET OWNER REPRESENTATIVE	UIC/G/ENPD	 7/04/16
6	WILSON FAYO	NIGERIA POLICE FORCE	CID	 7/4/16 13:21HRS
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