Annex D: Individual RoW Descriptions

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List of RoW Locations Visited			
KP	**River / Location**	**Team**	**Date Visited**
71.5 – 74 (0)	Chaivo Landfall and RoW	Northern	1 October 13
0	Chaivo Pigging Station and RoW	Northern	1 October 13
1 - 3	Chiavo RoW	Northern	1 October 13
4.5	Chaivo HDD Site and RoW	Northern	1 October 13
14.3	RoW	Northern	1 October 13
45	GTT North Connection	Northern	1 October 13
47	RoW	Northern	1 October 13
63	Dagi River	Northern	30 September 13
65	RoW	Northern	30 September 13
82.5	NOB 14 and RoW	Northern	30 September 13
87	RoW	Northern	1 October 13
95	Djimdan River Crossing	Northern	30 September 13
109	RoW Road Crossing and BVS NOB 19	Northern	30 September 13
112	RoW	Northern	30 September 13
151 to 155	RoW and Spokoyney River	Northern	2 October 13
14	Landfall	Northern	2 October 13
19	Vatung River Crossing	Northern	2 October 13
15 - 21	Plelyarna River and RoW	Northern	2 October 13
24.5	RoW	Northern	2 October 13
84.5	Voskresenovka River Crossing	Northern	3 October 13
88	RoW Road Crossing and TOB 2	Northern	3 October 13
102 - 103	RoW Road Crossing	Northern	3 October 13
103	TOB 8 Krasne Tym Area	Northern	3 October 13
117 - 118	TOB 9 and Fault Crossing	Northern	3 October 13
128	RoW Sandy Slopes	Northern	3 October 13
138 - 140	Taulan River Crossing and RoW	Northern	3 October 13
148	SOB 5 and RoW	Northern	3 October 13
178.5	Devyataya River and RoW	Northern	4 October 13
180.2	Desvyetaya River Crossing and RoW	Northern	4 October 13
193	RoW	Northern	4 October 13

List of RoW Locations Visited			
KP	**River / Location**	**Team**	**Date Visited**
213	Pobedinka River	Northern	4 October 13
254	RoW Road Crossing	Northern	4 October 13
258	Dig Up and POB 1	Southern	4 October 13
280	RoW Road Crossing	Southern	4 October 13
295	Dig Up and RoW	Southern	4 October 13
300	Gastelovka River	Southern	5 October 13
327	Nitui River South Fork	Southern	5 October 13
348.8	Gar River	Southern	5 October 13
352	Krinka River	Northern	5 October 13
369	Dig Up Pegas Ridge	Southern	5 October 13
392	Lazovaya River	Southern	5 October 13
393	RoW	Southern	5 October 13
394	Spokoyna River	Southern	5 October 13
395.8	Zvanka River	Southern	5 October 13
396	RoW	Southern	5 October 13
419	RoW	Southern	5 October 13
435	Travanaya River Crossing and RoW	Southern	6 October 13
444.3	Tichaya River and RoW	Southern	6 October 13
459.5	Manui River Crossing and RoW	Southern	6 October 13
466	Krasnaya River and RoW	Southern	6 October 13
511.5	Ai River Crossing an RoW	Southern	6 October 13
530	Dolinsk Wetlands	Southern	6 October 13
570	Vladimirovka River and RoW	Southern	29 September 13
573.5	Mayakovskaya River and RoW	Southern	29 September 13
595.5	RoW Road Crossing	Southern	29 September 13
600 - 601	Pultovka River and RoW	Southern	29 September 13
607 – 609.5	RoW	Northern	29 September 13
611	Vodopyanovka River and RoW	Southern	29 September 13
614 - 615	RoW	Southern	29 September 13
617	Korsakovka River	Southern	29 September 13
622	Mereya River (and slopes to north)	Southern	29 September 13

Chaivo peninsula landfall, RoW and Pigging Station KP 71.5 – 74 and KP 0 - 4

During 4 October 2013 the team visited the Chiavo Peninsula. Four areas of the pipeline route were viewed: the landfall and adjacent RoW; the Pigging Station and adjacent RoW; the RoW between the Pigging Station and the HDD site; and the HDD site itself. A brief description and comments on each area are provided below.

Chaivo Peninsula Landfall and RoW - KP 71.5 to 72.5

The landfall area of the pipelines from Molikpak PA-A Platform is shown in photos 1 to 4. The immediate near shore area (where the tie-in was performed) is levelled but with very little growth and includes wooden debris (Photo 1). The RoW immediately to the west but within the foot print of the landfall area's previous activities shows poor technical reinstatement and should be considered for remedial works (Photo 2). Photo 3 provides a panorama that encompasses the entire landfall site. The RoW west of the landfall is well vegetated (Photo 4).

Photo 1 – View to west across the landfall area showing poor vegetation.

Photo 2 – View to the west showing the centre of the RoW at the edge the landfall area with poor technical reinstatement and no vegetation.

Photo 3 – Panoramic view of the landfall footprint area taken from shoreline dune.

	**Photo 4** – (to left) View to the west towards the Pigging Station from the edge of the landfall area showing Good vegetation cover on the RoW.

Chaivo Peninsula Pigging Station at KP - 74/0

During the visit the team had a brief look at the Pigging Station. The station was clean and without visible stains soil on the ground. The pig traps have a secondary containment in the form of a subsurface sump (Photo 1). It was reported that there is an underground storage tank of unknown dimension and type that collects and stores oil and paraffin (Photo 2).

Drum storage was observed near the main gate (Photo 3). The drums were situated on large drip trays that act as secondary containment but with no protection from rain and snow. This will reduce the capacity of the containment and will produce un-intended waste water. The Company should re-evaluate and improve the storage area.

Spill response material was situated in an office trailer and included only relatively small amount of absorbent pads (Photo 4). No spill response equipment/material was observed outside of the trailer.

Backup power generator was observed in an enclosure and on secondary containment. There was no external fuel tank (Photo 5).

The RoW to the east of the facility was in poor condition for the first 100 meters from the fence line. It was mostly without vegetation cover and included debris field (Photo 6). The Company should consider removing the waste/debris field and reseeding the area. Further east the RoW is in good condition with good vegetation cover (Photo 7).

Photo 1 – Pig trap and subsurface sump (with manhole cover)

Photo 2 – View of the southwest corner of the station showing location of the underground storage tank

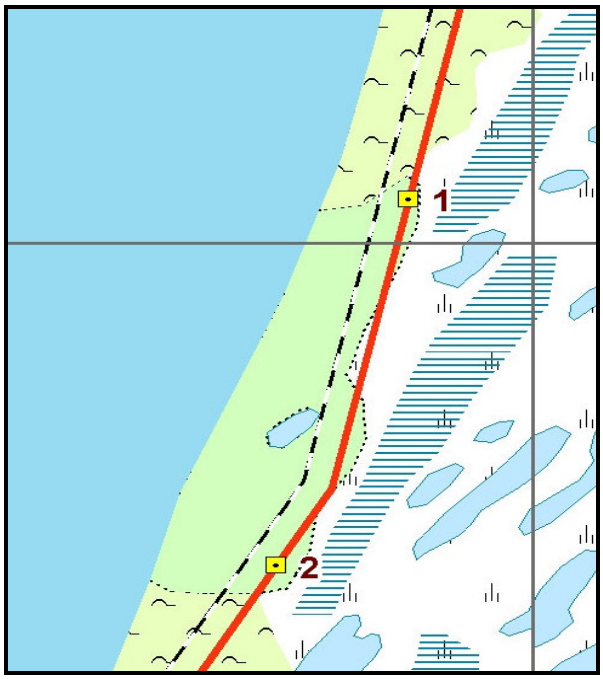
Photo 3 – View of drum storage on top of drip trays.

Photo 4 – View of available spill response material.

Photo 5 – (to left) backup power generator within an enclosure.

Photo 6 – View to the east outside the facility's fence showing waste/debris field and poor vegetation cover. 	**Photo 7** – View of the RoW further east of facility toward the landfall showing good vegetation cover. 

Chaivo Peninsula RoW - KP 1 - 3



The RoW between the Pigging Station at KP 0 and the HDD site at KP 4 is well vegetated and generally in good condition. The access road to the Pigging Station is elevated and includes several large flume pipes along its length to allow water to freely move to the other side of the road.

Photo 1 – View north showing well vegetated RoW along an elevated access road.

Photo 2 – View south showing well vegetated RoW along an elevated access road.

Chaivo Peninsula HDD Site - KP 4.5

The HDD Site at KP 4.5 is still mostly poorly vegetation. Also waste/debris such as pipe/tubing segments was observed partially buried in the sand.

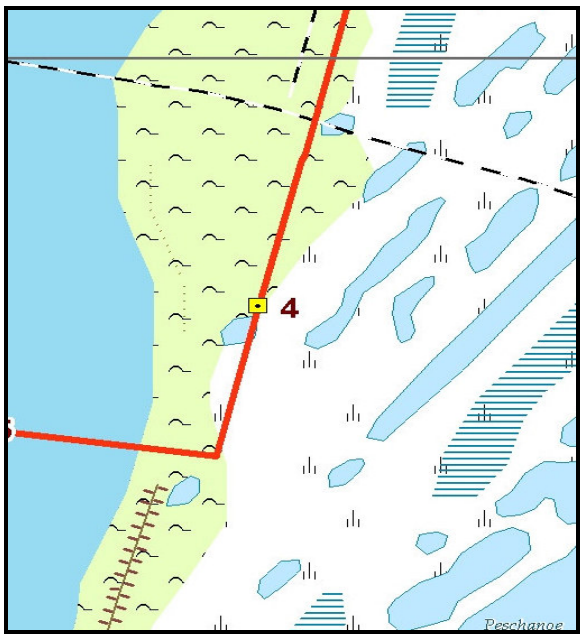


Photo 1 – A panoramic view to the west direction of the HDD site. Note the poor vegetation cover and the waste pipes in the foreground.

Right of Way Road Crossing KP 14.3

The RoW on the west side of the Federal Highway Road Crossing at HW marker 714 is situated in sandy, soil on a gently climbing slope. The RoW is well vegetated with grass and with the addition of many small trees (mostly Alder). The road cut slope has Geojute cover and is mostly vegetated by Alder trees (Photo 1).

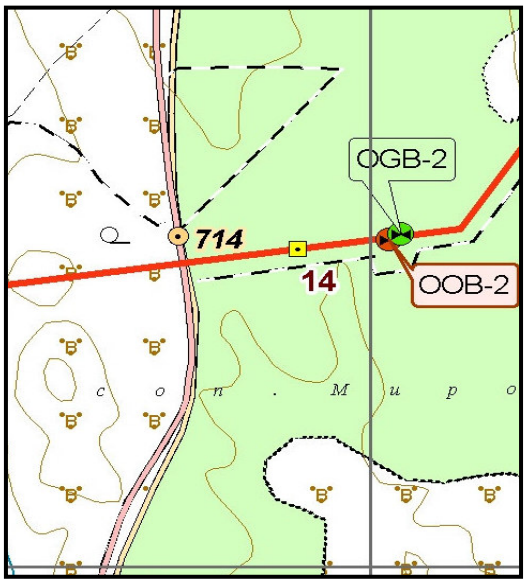


Photo 1 – (to left) View west across the Federal Highway, showing a vegetated RoW with grass and small trees. The slope in the foreground is the road cut with geojute placed on the slope.

RoW in the area of GTT North Takeoff – KP 45

The RoW in the vicinity of the newly constructed GTTN was reseeded and some grass cover is visible. The soil in area is very sandy and recovery/vegetation coverage will need to be monitored and treated accordingly.

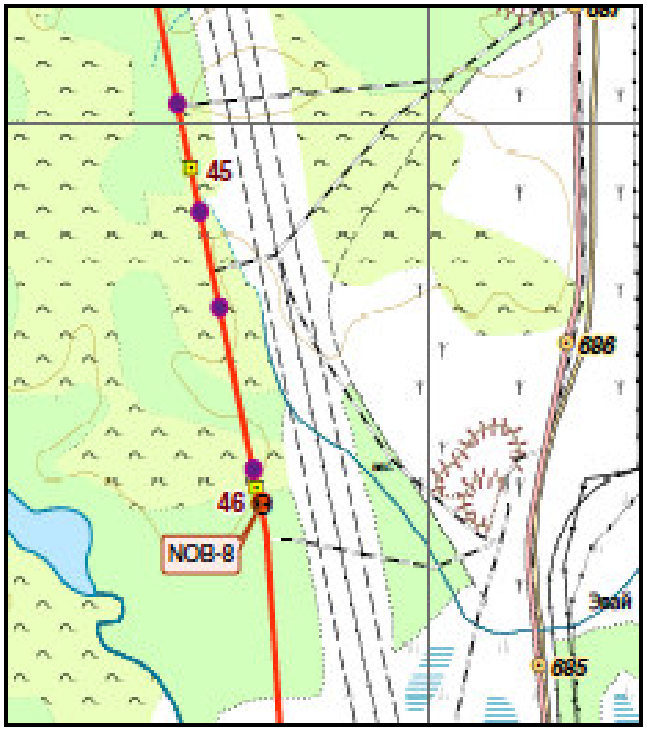


Photo 1 – View to the south towards the GTT Facility showing RoW following recent reseeding.

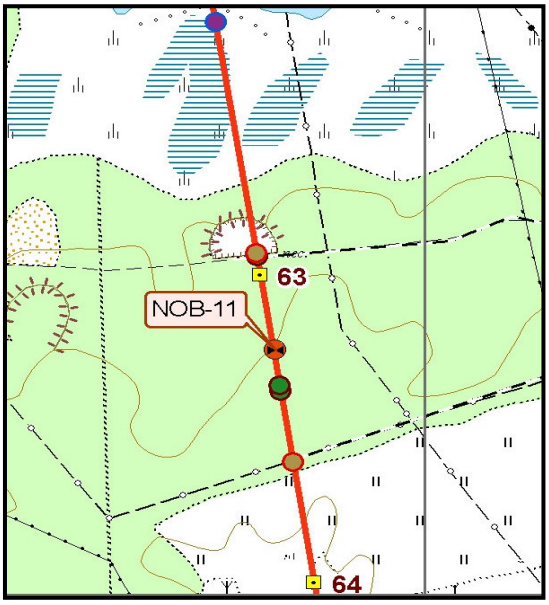
Photo 2 – View to the north of the reseeded RoW.

RoW Road Crossing – KP 47

The RoW in this area is quite sandy and with gently sloping terrain. The slopes are protected with slope breakers (background in Photo 1). The RoW is covered mostly with grass but also has small amount of trees.

Photo 1 – View to the south showing mostly vegetated RoW with slope protection (in the background).

KP 63 Dagi River Slopes, Block Valve NOB11 and RoW



The Dagi River valley is showing very slow improvement; there is only partial vegetation cover over the pipe trenches in the wetlands and further improvement is needed (Photo 1). The southern slope and side cut are well protected with Geojute and vegetation cover. The slope is covered with a dense population of Alder saplings.

The Company started a program to remove the Alder trees first near the road crossing but more particualrly on the RoW south of the road crossing. The method of removal is reportedly mechanical (not witnessed). The area of the RoW in which trees were removed in this way is disturbed and with little or no vegetation besides the stumps of the cut trees (Photos 2 and 3). The area shown in photo 3 also has young pine saplings that have grown since the removal of the Alder trees.

Photo 1 – View to north across the river crossing showing partially recovered wetlands and vegetated slope and side cut. Note the dense population of Alder on the slope leading to the valley.

Photo 2 – View of RoW north of the road crossing showing disturbed RoW after tree removal.

Photo 3 – (to left) View to north of the road crossing showing growth of pine saplings in the area where Alder was removed.

Category 2 Repair Works and RoW – KP 65

A Category 2 repair work was conducted on the edge of the access road to NOB-12. The RoW (and road) follow a long slope and the drainage along the road produced deep erosion at the bottom of the slope. The erosion exposed the Fiber Optic Cable (FOC) (Photo 1). During the visit repair work was in progress and it was reported that better erosion control measures will be introduced farther up the slope to prevent re-occurance. The ROW in the area is well vegetated and includes trees (Photo 2).

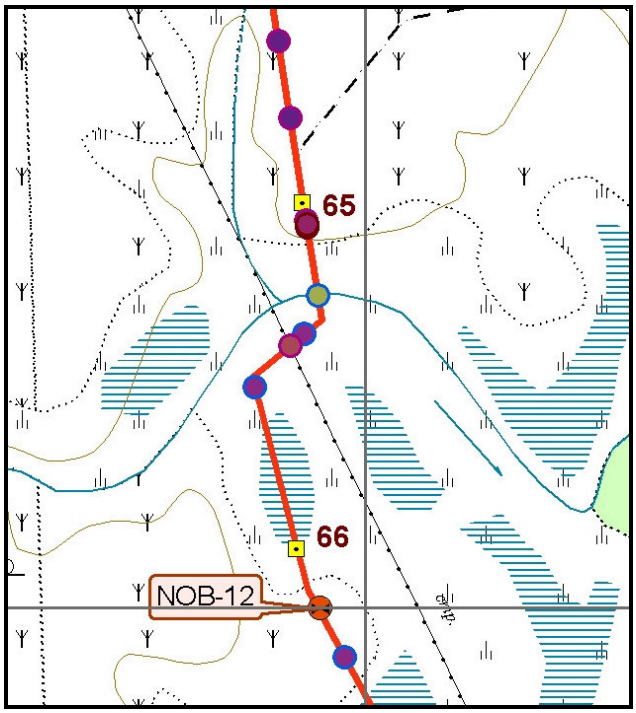


Photo 1 – View to the west towards NOB-12 showing repair work in progress.

Photo 2 – View to the east showing well vegetated RoW with grass and trees.

RoW near NOB-14 KP 82.5

The RoW in this area is has a dense cover of grass and tree saplings (mostly Alder) (Photo 1). The Company made a concerted effort for tree removal in this area. Reportedly, the method used tracked equipment. Results as seen on site are that the trees are cut about a foot above ground with the root system still in place (Photos 1 to 4). In addition, in places the use of the mechanized equipment resulted with scraping of the soil surface and removing other vegetation (Photos 2 and 3). It is recommended that the use of this method be re-evaluated.

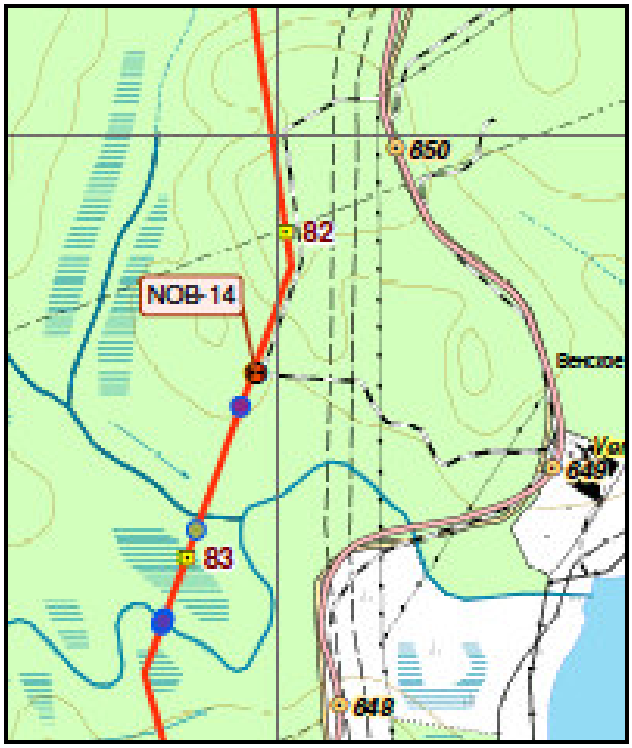


Photo 1 – View to the east of well vegetated RoW with grass and trees. This area was disturbed by tree removal.

Photo 2 – View of RoW post removal of trees and surface disturbance.

Photo 3 – View of RoW post removal of trees and surface disturbance

Photo 4 – View of RoW with removed trees.

Category 2 Repair Work RoW - KP 87

Category 2 repair work was recently completed at KP 87. The work entailed stabilizing a side slope across the width of the RoW (Photo 1). Elsewhere in the area the RoW follows an undulating terrain with moderate slopes. The RoW in the area is well vegetated (Photo 2).

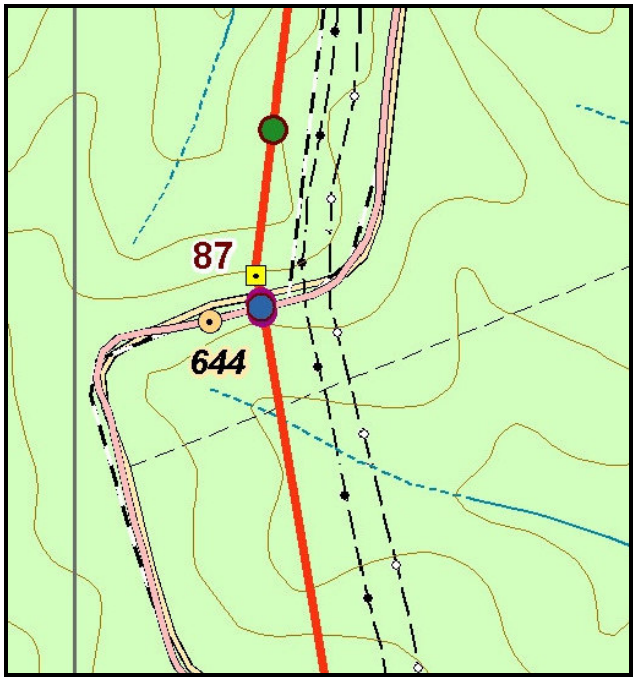


Photo 1 – View north of well protected slopes with good vegetation cover.

Photo 2 – View south of well protected slopes with good vegetation cover.

KP 95 Djimdan River and RoW

The Djimdan River crossing is well vegetated and appears stable. Some minor undercutting of the Reno mats was observed and the bank should be monitored (Photo 1). The RoW on each side of the river is well vegetated. However, only partial vegetation cover is visible on the RoW in the wetland in the river valley (Photo 2). The RoW on the east slope leading to the river is covered by dense growth of Alder trees that reach two or more meters in height (Photo 3).

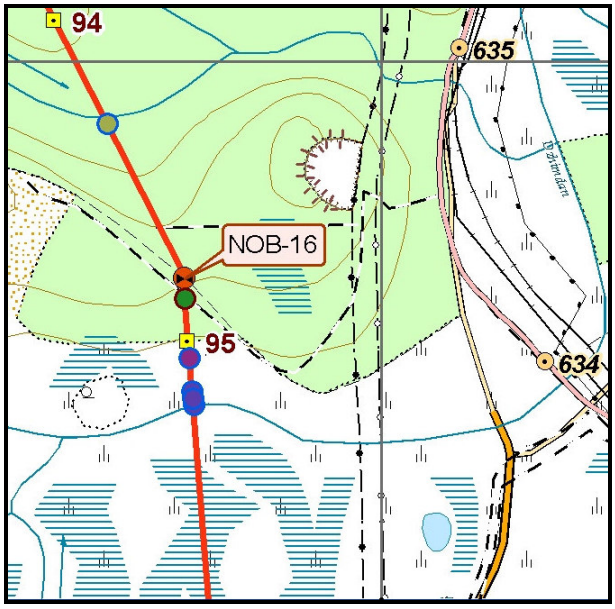


Photo 1 – View south across the river showing good vegetation cover on bank – partially covering the Reno matting.

Photo 2 – View south across the valley showing partially reinstated RoW in the wetlands and well protected slope on the other side of the valley.

Photo 3 – (to left) View of RoW between NOB 16 and the river showing significant tree growth. Note the white helmets in the centre of the photo for scale.

KP 109 RoW Road Crossing and Block Valve Station NOB 19

During a previous visit of this site the RoW was observed to be “mostly well vegetated and with some thick patches of tree saplings.” Since then, the Company cut trees on the RoW in the area. The trees are cut at about 20 – 30 cm above ground using tracked equipment that disturbs the RoW surface and damages other growth.

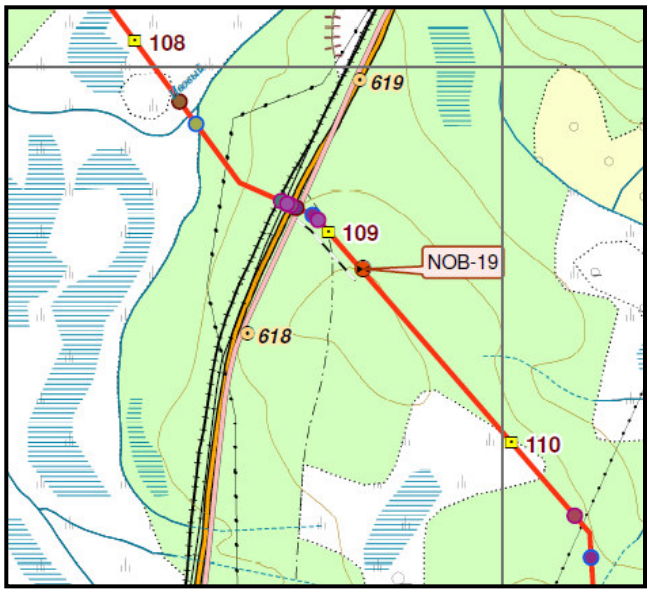


Photo 1 – View of a partially deforested RoW. Trees were cut about 20 - 30 cm above ground.

Photo 2 – View of fully deforested RoW. Note disturbed soil by the use of heavy equipment for the tree cutting.

RoW - KP 112

The RoW at KP 112 is partially vegetated with grass. The RoW was disturbed by tracks from heavy equipment.

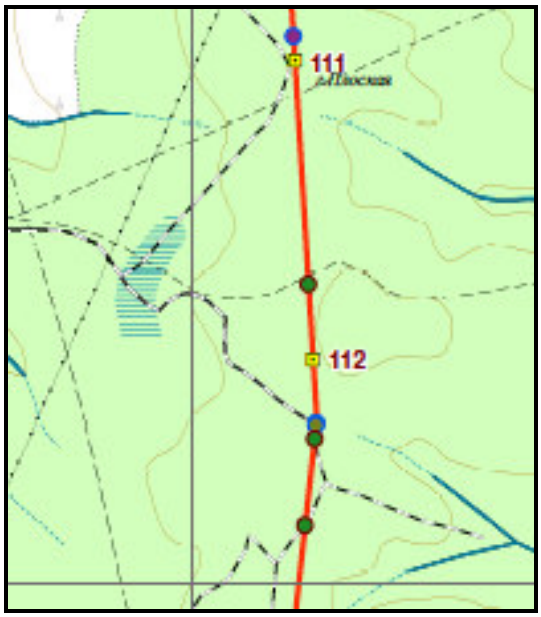
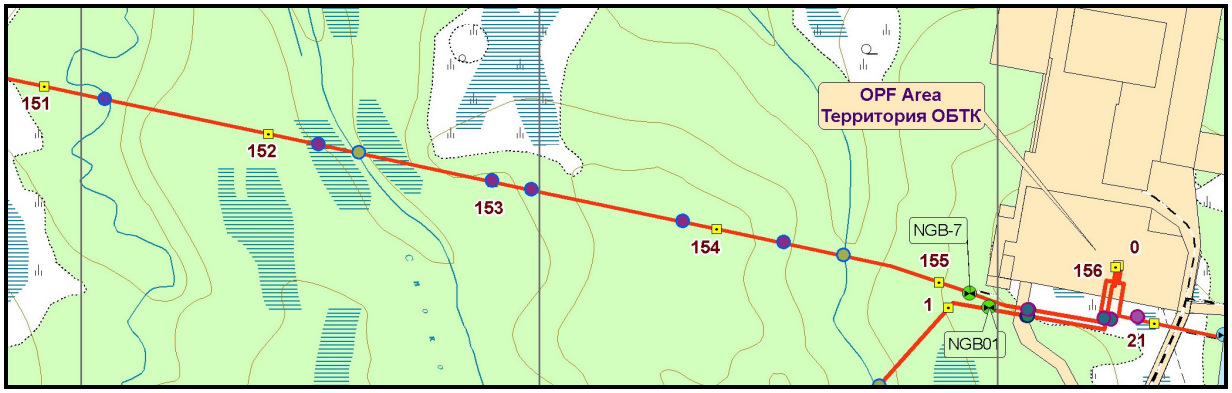


Photo 1 – View south showing partially vegetated RoW. Note the tracks of heavy equipment that disturbs the surface of the RoW.

Photo 2 – View south showing partially vegetated RoW. Note the tracks of heavy equipment that disturbs the surface of the RoW.

Annex D: Individual RoW Descriptions

KP 151 to 155 RoW and Spokoyney River



The section was viewed from the OPF at KP 155 towards the north at KP 151.

The RoW between the OPF and the NOB 24 is well vegetated and includes an access for the entire length in order to reach NOB 24. The access road is well maintained, and stream and river crossings are generally in good condition, well protected with riprap and are well vegetated. The bridges (although mostly temporary in nature from the construction period) include sediment control in the form of silt fencing along the bridge edges.

Tree removal/cutting was performed in certain areas (at approx. KP 152 - 153). The cutting was done using tracked equipment and the trees were cut approximately 20 – 30 cm above ground (Photos 1 and 2). Much is left to be cut in this area where in some sections the trees are quite developed (Photo 3)

The wetlands, which start at approximately KP 152.7, are well recovered (Photos 4). A previous BIODIV.07 Item was raised regarding inadequate drainage across the access road on the wetlands. The Company addressed the item by improving flume/culvert construction across the road (Photos 5 and 6).

Photo 1 – View of RoW where trees were cut using tracked equipment

Photo 2 –View of RoW where trees were cut using tracked equipment

Photo 3 – View of large size trees growing on the RoW.

Photo 4 – View to the north showing recovered wetland

Photo 5 – View of repaired flume pipe(s) in the wetlands across the access road to NOB 24

Photo 6 – View of repaired flume pipe(s) in the wetlands across the access road to NOB 24.

KP 14 Landfall

The Landfall from the LUN-A Platform at KP 14 is sparsely vegetated at the project's footprint in the near shore dune environment (Photo 1). However further to the west (in the approx. area of KP 16) the RoW is mostly to completely covered with grass as see in Photos 2 and 3.

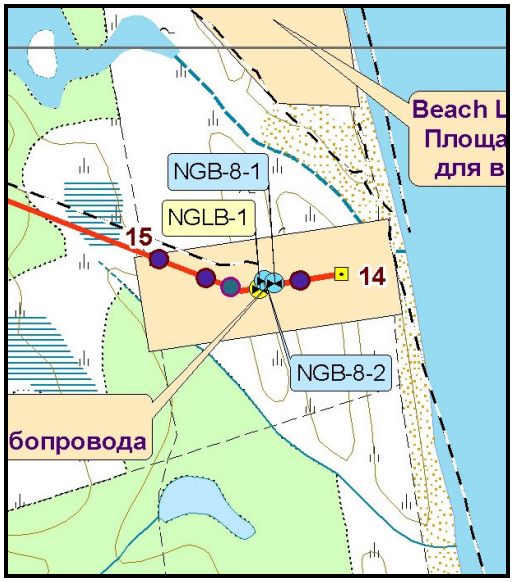


Photo 1 – View to the west showing partially vegetated landfall footprint and mostly vegetated RoW.

Photo 2 – View to the west showing partially vegetated RoW.

Photo 3 – (to left) View to the west showing well vegetated RoW.

KP – 19 Vatung River Crossing and RoW

The Vatung river is situated at the edge of a wetland. The RoW east and west of the river crossing has good grass cover (Photos 1 and 2). The riverbanks are in good condition and are protected with Reno mats and reinforced (internally) with Enkamat geotextile. The mats are in good condition and partially vegetated with grass and moss (Photos 3 and 4).

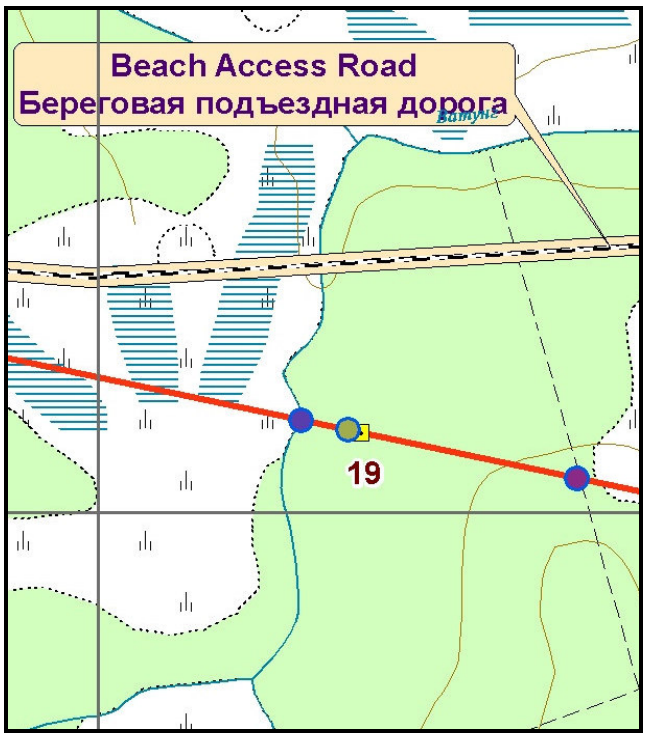
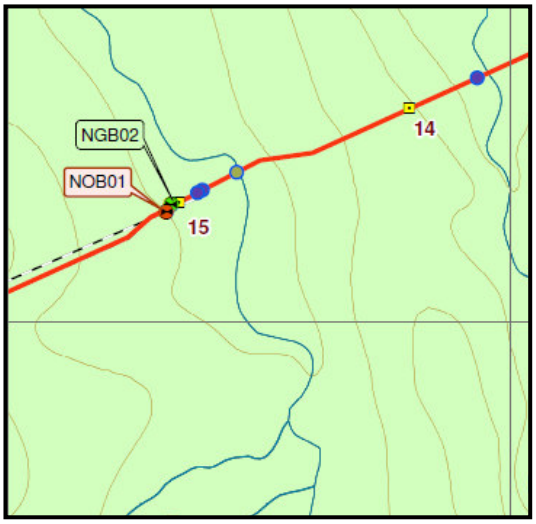


Photo 1 – View to the east showing good vegetation cover on the RoW across the river.

Photo 2 – View to the west showing good vegetation cover on the RoW across the river.

Photo 3 – View to the downstream showing the river banks with Reno mats. 	**Photo 4 –** View to upstream showing the river banks with developing vegetation cover. 

KP 15 Plelyarna River and RoW KP 15 to 21



The river was accessed by a long access road starting at KP 21 and ending at KP 15 at the river crossing and the Block Valve stations NOB 01 and NGB 02. The RoW along this section generally has good grass cover (Photo 1). However the north end of the section and just south of NOB 01 there is a long slope with poor vegetation cover and in one area a deep erosional channel has formed (Photo 2).

The RoW in the section between NOB 01 and the river is scarred by the activity of (unknown) heavy track vehicles, which caused damage to the reinstatement and to a slope breaker (Photo 3).

Pleleyarna River banks are well protected with Reno mats and Enkamat and are partially covered with grass that comes up through the mats (Photos 4 and 5).

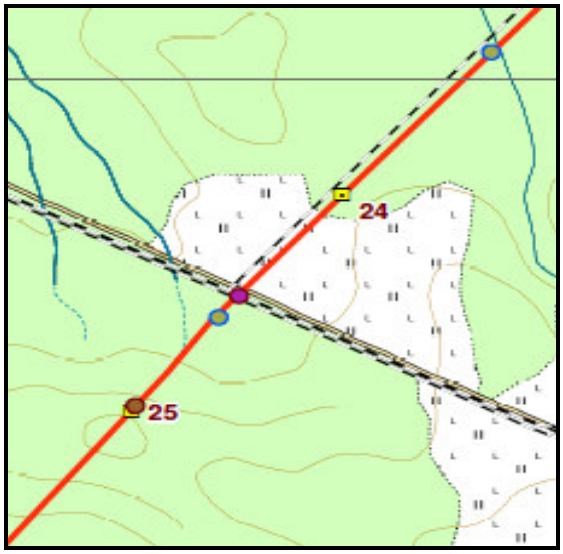
Photo 1 – View to the south showing well vegetated RoW at the area of KP 16 to 21

Photo 2 – View of a RoW section in the area of KP 15 to 16 showing poor vegetation cover and a development of erosion channels.

Photo 3 – (to left) View of damaged slope breaker by an unknown activity of tracked vehicle.

Photo 4 - View to the downstream showing protected banks and vegetation coming through the Reno mats 	**Photo 5 –** View across and upstream of the river showing stable vegetated banks with Reno mats. 

Road Crossing RoW - KP 24.5



The RoW in the area is gently rolling terrain and is well vegetated on both side of the road. The slope breakers up the slopes on both sides of the road are in good condition.

Photo 1 – View to the southwest showing stable road cut, good slope breakers and good vegetation cover. 	**Photo 2 –** View to the northeast showing good slope breakers and vegetation cover. 

KP 84.5 Voskresenovka River

Little has changed on site since the last visit undertaken in 2012. Both riverbanks are protected with Reno mats. The mats are intact and some vegetation is growing through the matting (Photos 1 and 2).

The RoW on both sides of the river is showing good grass coverage, with much grass now going to seed (Photo 4)

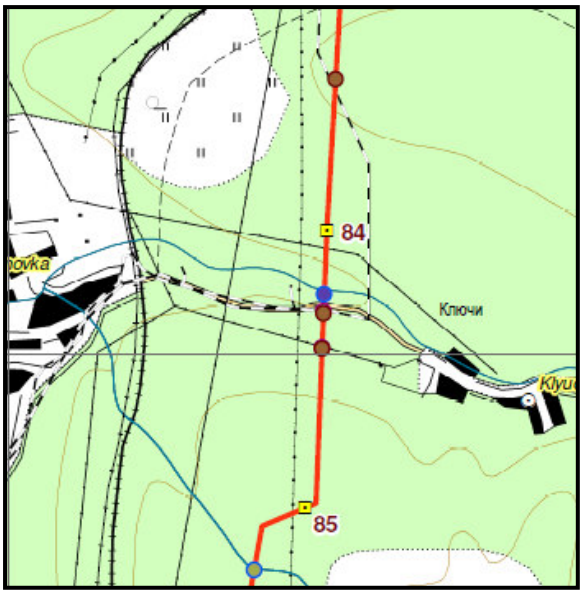


Photo 1 – View to downstream showing banks protected with Reno mats and vegetation.

Photo 2 – View to upstream showing banks protected with Reno mats and vegetation.

Photo 3 – View of the RoW to the north across the river showing good vegetation cover.

Photo 4 – View of the RoW to the south of the river crossing showing good vegetation cover.

KP 88 Road Crossing

The RoW at the road crossing is well vegetated on both sides of the road. To the north of the road the vegetation is predominantly grass, but south of the road many trees are observed growing on the RoW.

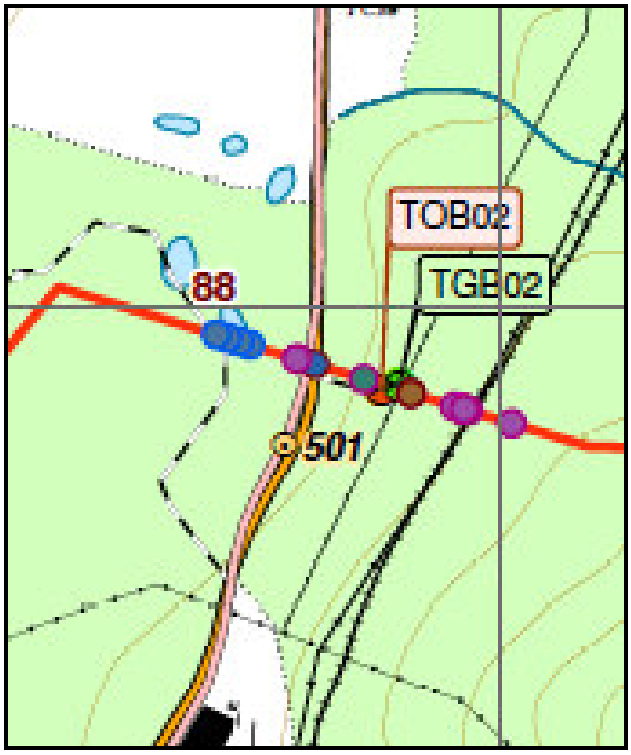


Photo 1 – View to the south showing grass and many trees growing on the RoW.

Photo 2 – View to the north showing predominantly grass cover on the RoW.

KP 102 (road crossing) - 103 RoW and TOB - 08

The RoW north of the road crossing has very good vegetation cover. Reportedly, this area of the RoW, which is in agricultural area, was reinstated by a local farmer using funds provided by the Company. The RoW south of the crossing includes an access road in the middle of the RoW and has very good vegetation cover comprising a variety of grasses small bushes and trees.

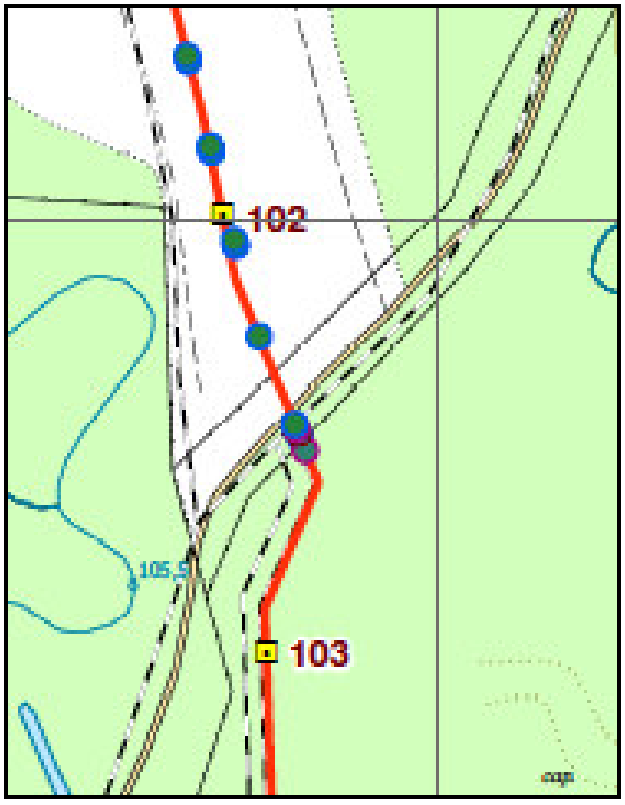


Photo 1 – View of the RoW to the north of the road showing reinstated agriculture fields.

Photo 2 – View of the RoW south of the road crossing with grass and tree cover.

	**Photo 3** – (to left) View south from TOB 08 showing a well vegetated RoW.

KP 117 – 118 and Fault Crossing

The RoW along the access road from KP 118 (at a fault crossing) to TOB 09 has very good ground cover that consists of a mixture of grass, low lying bushes and a variety of trees.

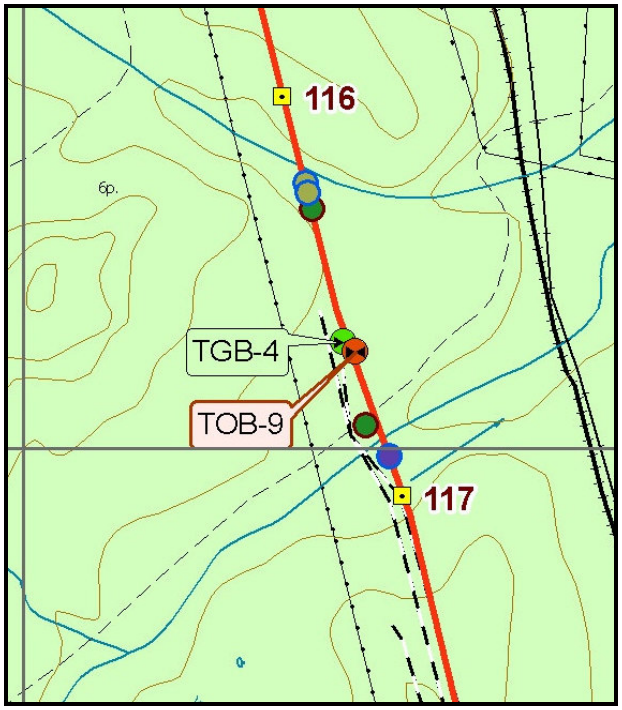


Photo 1 – View to the south showing fault crossing with good vegetation surrounding the trenches and good ground cover on the RoW.

Photo 2 – View to the north showing good ground cover of grasses, bushes and small trees.

Photo 3 (to left) – View to the north showing good ground cover around the perimeter of TOB 09.

KP 128 Sandy Slopes

The sandy slopes in this section of the RoW show continuing improvement over previous years. To the north from the road crossing the RoW shows good vegetation cover and good slope protection, including a riprap-covered central channel to aid in slope drainage (Photo 1). To the south the grass coverage away from the road crossing is generally improving but is still patchy/sparse in places and needs further improvement. Slopes breakers in each direction are well constructed.

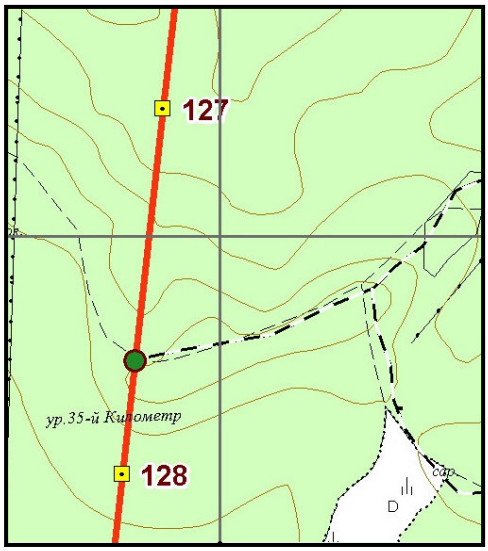


Photo 1 – View to the north showing good vegetation cover and a central drainage channel to improve drainage on the slope.	**Photo 2 –** View to the south showing sandy slopes with grass cover and good slope breakers.
	

KP 138 – 140 Taulan River Crossing and RoW

The Taulan River crossing is in good condition. The riverbanks are protected with Reno mats, which are mostly covered with soil and vegetation. Willows were planted on the banks during construction and are now being cut. The upstream bank should be monitored for possible erosion.

The RoW leading to the TOB 10 and the river has good ground cover but in places it also has many trees. In this area, a variety of Pine tree is established on the RoW

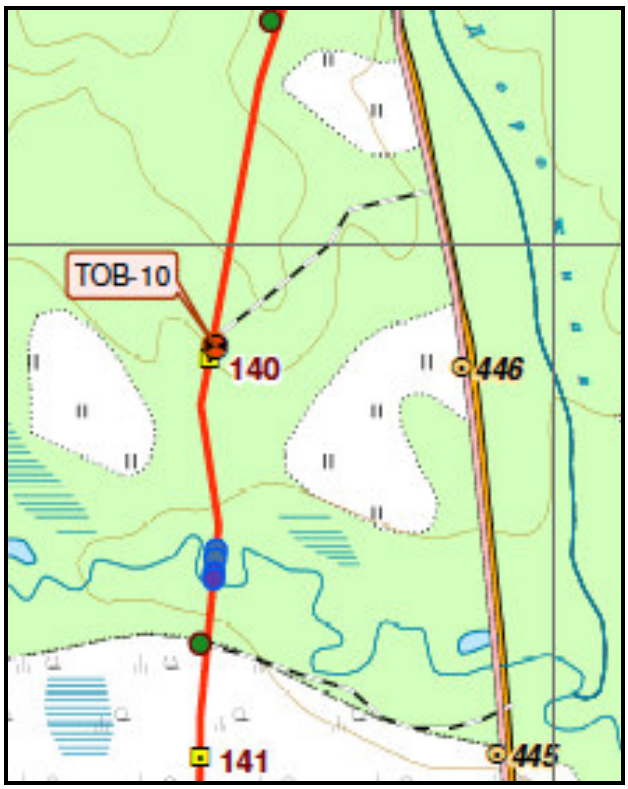


Photo 1 – View to the downstream showing stable well vegetated banks.

Photo 2 – View to the upstream showing well vegetated banks with grass and willows.

Photo 3 – View to the north showing RoW with good vegetation cover. 	**Photo 4** – View to the north showing RoW with good vegetation cover. 

KP 148 RoW and SOB 05

The RoW in the area of SOB 05 has good ground cover but also has established trees growth. Some of the trees are over 2 m in height (Photo 1). This is the case particularly on the north side of SOB 05, while the south side is has more grass and less trees (Photo 2).

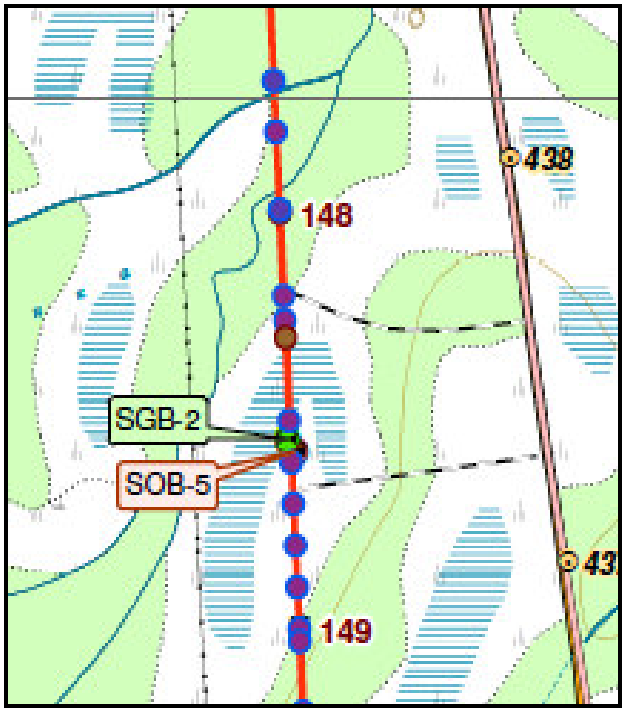


Photo 1 - View of the RoW to the north of SOB 05 showing well vegetated RoW with many tall trees.

Photo 2 –View of the RoW to the south of SOB 05 showing well vegetated RoW with some trees.

Annex D: Individual RoW Descriptions

KP 178.5 Devyataya River and RoW

The Devyataya River crossing appears to be in good condition. The banks are protected with Reno mats and vegetation is starting to establish itself through the mats Photos 1 and 2).

The slopes leading to the river have very good ground cover, which includes grasses, low lying bushes and some trees. Slope breakers on the RoW are well constructed and in good conditions and good vegetation cover (Photos 3 and 4).

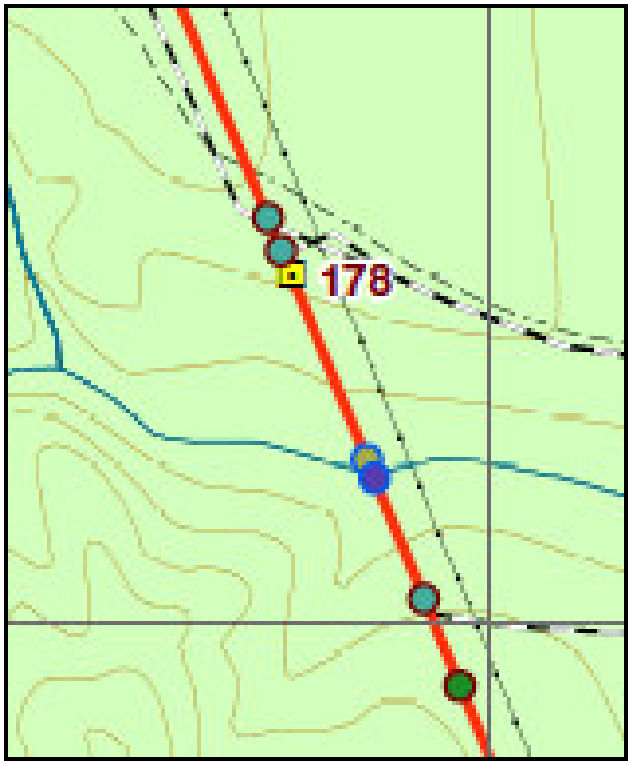


Photo 1 – View to the downstream showing stable banks and ground cover on the Reno mats.

Photo 2 – View to the upstream showing stable banks and ground cover on the Reno mats.

Photo 3 – View to the south showing the slopes leading to the river. 	**Photo 4** – View to the north upslope from the river showing the variety of vegetation cover. 

KP 180.2 Desvyataya River Crossing

The river crossing is generally in good condition but the upstream section should be monitored for potential undercutting by the stream. The banks are protected with Reno mats and vegetation is starting to grow through the mats (Photos 1 and 2).

The RoW has good ground cover and the slope leading to the river is stable (Photos 3 and 4). A steep portion of the slope at the edge of the access road is protected with Geojute, but has poor vegetation cover and may need to be reseeded (Photo 5).

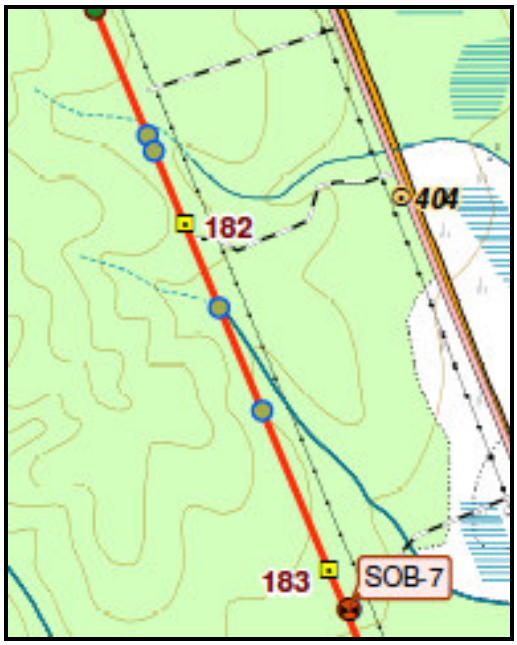


Photo 1 – View to the downstream showing stable river banks 	**Photo 2** – View to upstream showing Reno mats and vegetation cover. 
Photo 3 (left) – View to the south across the river showing the RoW with good vegetation cover and with trees	**Photo 4** – View to the north showing the RoW slope towards the access road with good ground cover and slope breakers.

Photo 5 (left) – View of the very top of the slope next to the access road showing slope protection with Geojute but mostly without vegetation.

KP 193 Road Crossing

The RoW at the road crossing is well vegetated both to the east and the west of the road, with a variety of grasses, low lying bushes and trees present.

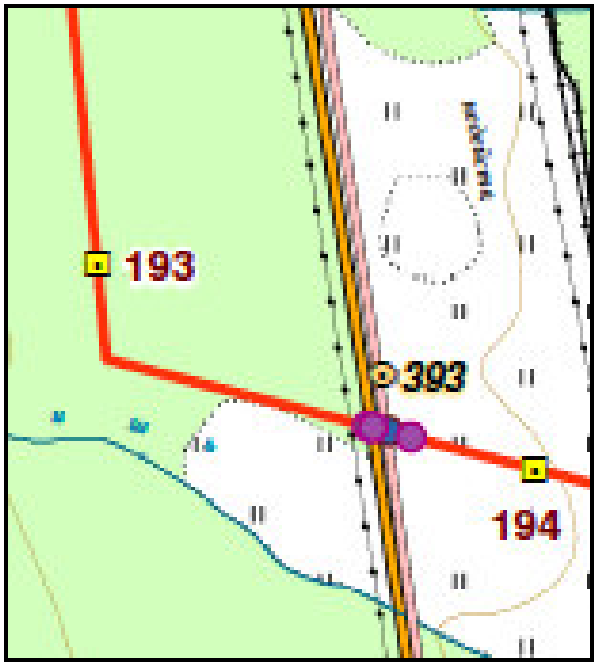
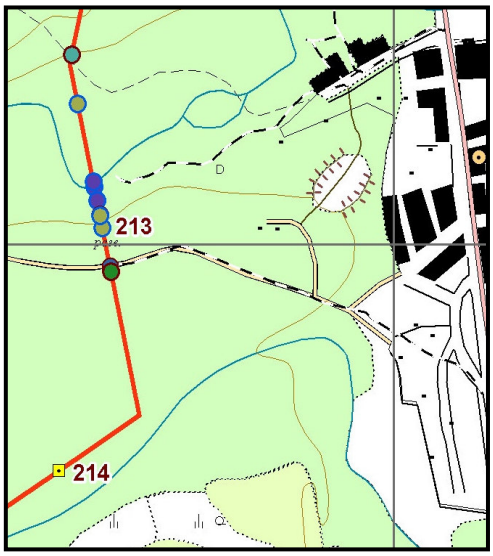


Photo 1 – View to the west showing the RoW with ground cover

Photo 2 – View the east showing the RoW with good ground cover.

KP 213 Pobedinka River



The Pobedinka River is a high energy river that required strong engineering fortification of the outside bank (the southern bank).

Little has changed since last's year monitoring visit. The multi-level gabion wall bank protection and upstream riprap are intact but showing wear and tear and should be monitored (Photos 1 and 2).

The RoW on both sides of the crossing shows good vegetation cover and slopes are protected with slope breakers.

Photo 1 – View to the upstream of the south bank of the river, showing multi-level gabion wall and large riprap protection in the upstream.

Photo 2 – View to downstream showing the multi-level gabion wall and the vegetated opposite bank.

Photo 3 – View to across the river from the top of the slope on the south side showing good ground cover on the RoW on both sides of the crossings.

Photo 4 – View to the west from the access road showing the RoW with good ground cover.

KP 254 Road Crossing

The RoW in the area of the road crossing is mostly flat and with good vegetation on both sides of the road. However the RoW on both sides of the road includes many tall trees in addition grasses and bushes.

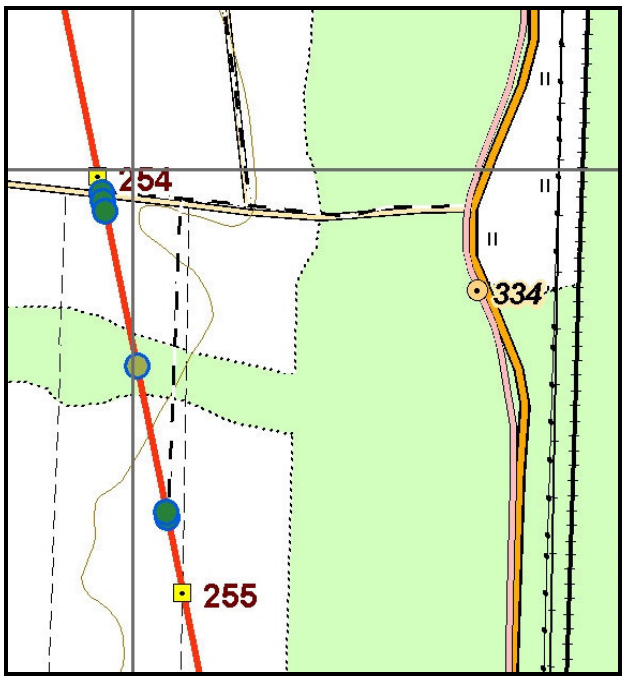
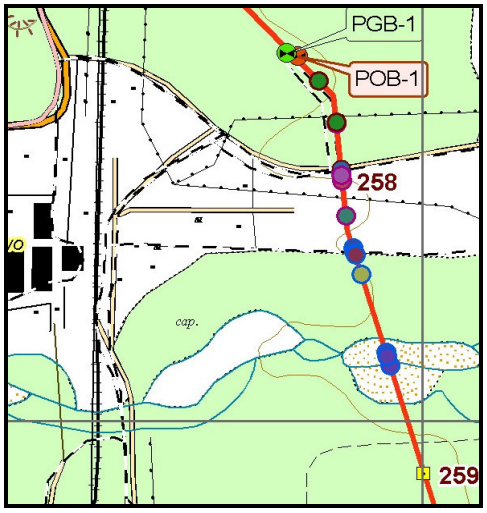


Photo 1 – View to the south showing the RoW with good ground cover and tall trees.

Photo 2 – View to the north showing the RoW with good ground cover and tall trees.

KP 258 Dig Up site, RoW

A dig up at KP 258 was recently finished. The surface profiling (as part of the technical reinstatement) was well done and blends into the profile of the adjacent RoW. Also, only a limited area was disturbed in this process as is evident from the undisturbed vegetation in the adjacent areas. The site was reportedly seeded but it is too early to observe any results (Photo 1).



The RoW in the area of the dig-up is very well vegetated but also includes many trees (Photo 2).

Photo 1 – View of the dig-up site.

Photo 2 – View of well vegetated RoW with trees.

KP 280 Road Crossing

The RoW at the road crossing at KP 280 is well vegetated on both sides of the road. The vegetation includes grasses and trees. On the south side of the road there were more trees observed than on the north side.

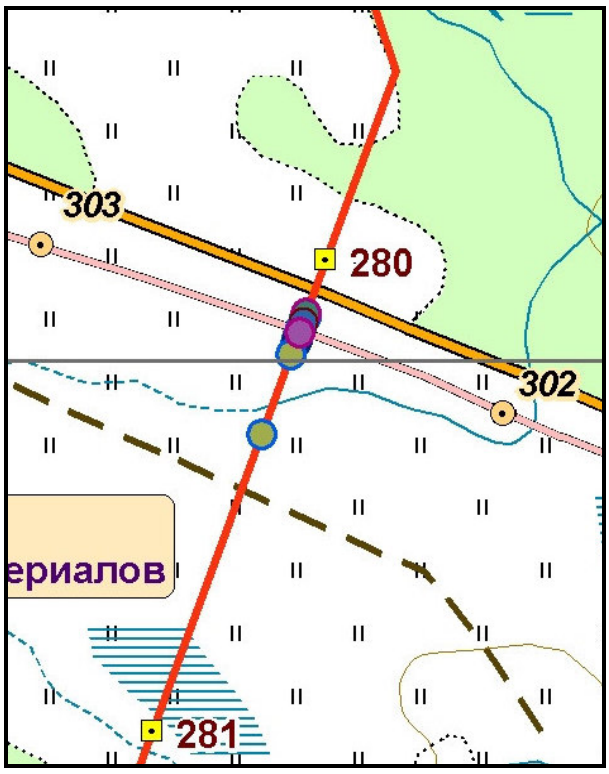
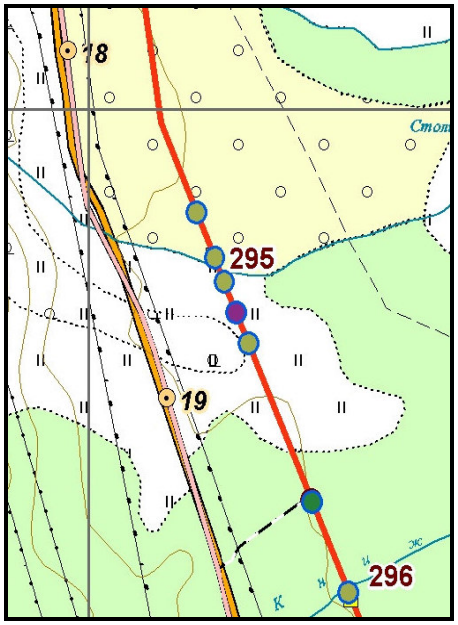


Photo 1 – View of the RoW to the south

Photo 2 – View of the RoW to the north

KP 295 Dig Up

A dig up at KP 295 was completed in 2012 and the technical reinstatement was conducted on the actual dig up location. However, there are still aspects of the technical reinstatement that are not concluded including reinstatement of the access road to the site and protection of the small stream that crosses the RoW immediately north of the dig up. Partial biological reinstatement was also conducted, but this has had poor results to date (Photos 1 to 3). A wide access road to the dig up in the centre of the RoW is quite prominent and includes tree logs used as the road base (Photo 4).



The RoW in the vicinity of the dig up in both directions is rich in Alder trees, some of which are tall.

Photo 1 – A panorama of the dig up area on the RoW showing the disturbed section

Photo 2 – View to the north showing the dig up area.

Photo 3 – View to the west showing a small drainage that was disturbed at the edge of the dig up area.

Photo 4 – View to the north showing the access road that was constructed for the dig up. Also note the tall Alders on the right side of the RoW.

Photo 5 – View to the south showing the RoW with good vegetation cover and many trees.

KP 300 Gastellovka River

The Gastellovka River is a high energy, braided river with multiple channels. The bank of the northern channel (currently the minor channel) is well fortified against the RoW to the north with Reno mattings, which are in good condition and with vegetation growing through the mats (Photos 1 and 2).

A larger channel farther to the south was not reached but Reno mats placed on the southern bank were observed from the distance (Photo 3).

The RoW north and south of the river is well vegetated including grasses and trees (Photo 4).

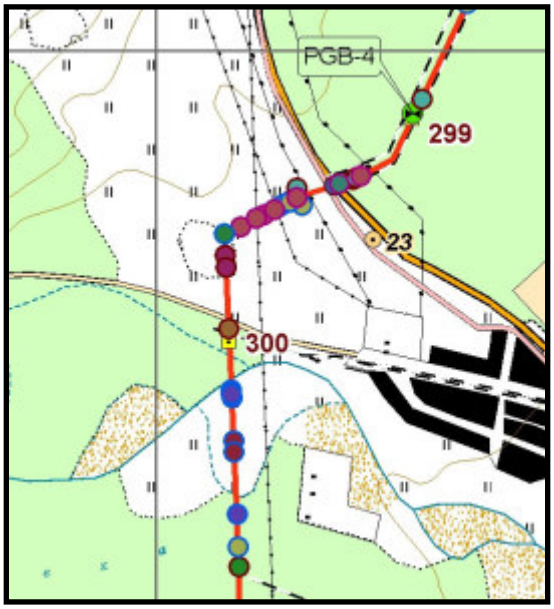


Photo 1 – View to the downstream of the Reno mats on the north bank of the northern channel.

Photo 2 – View to the upstream of the Reno mats on the north bank of the northern channel

Photo 3 – View across the river showing Reno mats on the south channel banks.

Photo 4 – View to the north showing well vegetated RoW.

KP 327 Nitui River

The Nitui River is a high energy, multi-channel braided river. During the October 2013 visit only the main southern channel was viewed. The southern channel was protected on both banks with good size riprap and appears to be in good condition (Photos 1 and 2).

The RoW on both sides of the channel is well vegetated with a variety of plants including grasses and trees (Photos 3 and 4). The RoW to the north of the channel includes dense growth of trees some of which are quite tall.

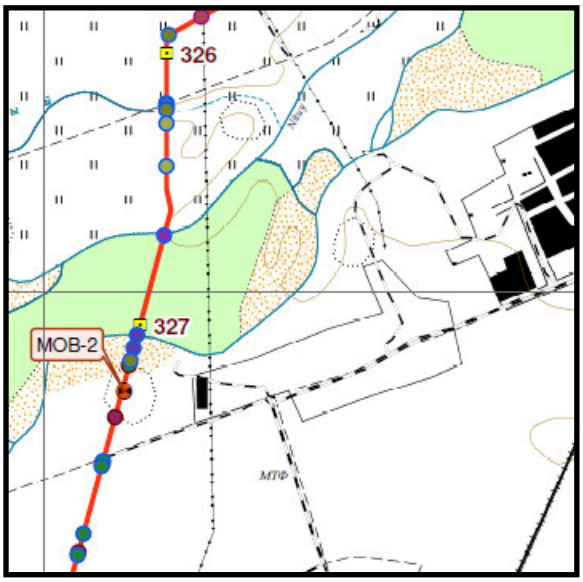


Photo 1 – View to the upstream showing riprap on southern channel banks

Photo 2 – View to the downstream showing riprap on southern channel banks

Photo 3 – View to the north from MOB 2 towards the river showing good vegetation

Photo 4 – View RoW south of southern channel showing very good re-vegetation

KP 348.8 Gar River Slopes

The Gar River slopes were observed from the north. The southern slope was well vegetated but with soil slippage at the lower portion. This slippage needs to be evaluated by maintenance and treated accordingly (Photo 1).

The north slope appeared to be in good condition. Good quality slope breakers, protected with geojute, were present on the northern slope. This, combined with a reasonable level of re-vegetation, affords a good level of slope stabilisation (Photo 2).

Some control of tree growth was observed on the northern slope, but many trees/saplings remained. The RoW on the slope and on the ridge to the north is well vegetated with grass but also includes trees (Photos 3 and 4).

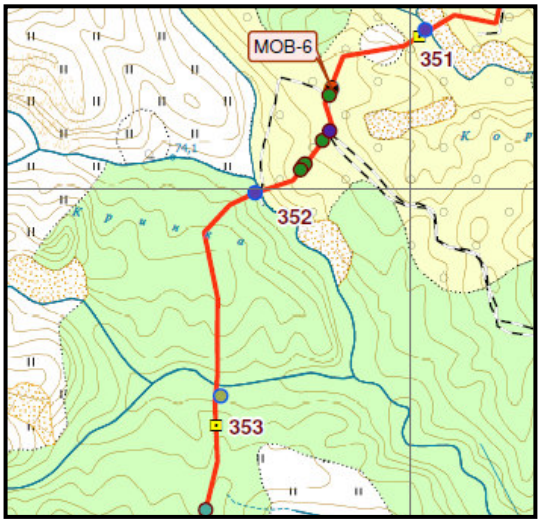
Photo 1 – View northern slope with vegetated RoW with fortified slope breakers and with a soil slippage.

Photo 2 – View of southern slope showing good re-vegetation on upper portions of slope

Photo 3 – View of RoW on the ridge above the river showing very good grass cover

Photo 4 – View of the RoW north of the river showing good grass cover and tree saplings.

KP 352 Krinka River and Slopes



The Krinka River banks at the crossing are well protected with an extensive Reno mats and with some vegetation coming through the mats. The slopes are well protected with slope breakers and with dense vegetation (Photos 1 and 2).

In 2012 the slope and the RoW leading to it were covered by thick growth of Alder trees/sapling some as tall as 2 meters. Since then a significant effort to remove trees was conducted on the north slope (Photos 1 to 3). However, the pruned stumps are already regenerating growth from side branches (Photo 3).

Photo 1 – View to south showing Reno mats on both. Very good vegetation cover on slopes. Note the cut trees.

Photo 2 – View to the south showing both slopes with good slope protection and many cut tree saplings.

Photo 3 – (to left) View to the south showing the RoW leading to the north slope with good vegetation cover and cut trees.

KP 369 Pegas Ridge Dig Up

A recently completed dig up was visited on the Pegas Ridge at KP 369. The site was technically reinstated by profiling the disturbed area to fit with the general ridge topography. However a mound of approximately 50 cm in height was constructed on top of the actual excavation, reportedly to account for future compaction (Photo 1). It is recommended that the site will be monitored and evaluated for preferential drainage channels that may form due to the mound.

The site was seeded, but growth is not expected untill next growing season.

The RoW east and west of the dig up has a very good vegetation cover (Photos 2 and 3)

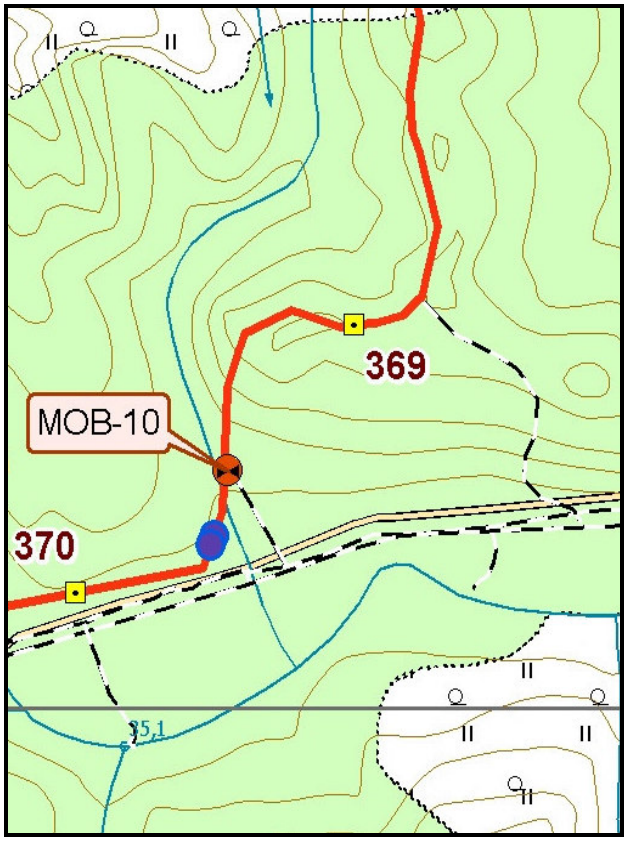


Photo 1 – View to the west showing the profiled site area and the mound.

Photo 2 – View west showing the yet un-reinstated access road leading to the dig up. Note the good vegetation cover on the RoW.

Photo 3 (left) – View showing the very well vegetated Pegas slope leading to the MOB 10 and the river.

KP 392 Lazovzaya River and RoW

The Lazovaya river crossing is protected with Reno mats on both banks. The mats on the north bank are in good condition and the river has deposited much sediment in front the mats. The mats on the south bank are intact, but are slightly undercut by the river and should be monitored (Photos 1 to 3).

The RoW on both side of the river has good vegetation cover, which mostly comprises grass (Photos 1 to 4).

During the visit many fish were observed in the river.

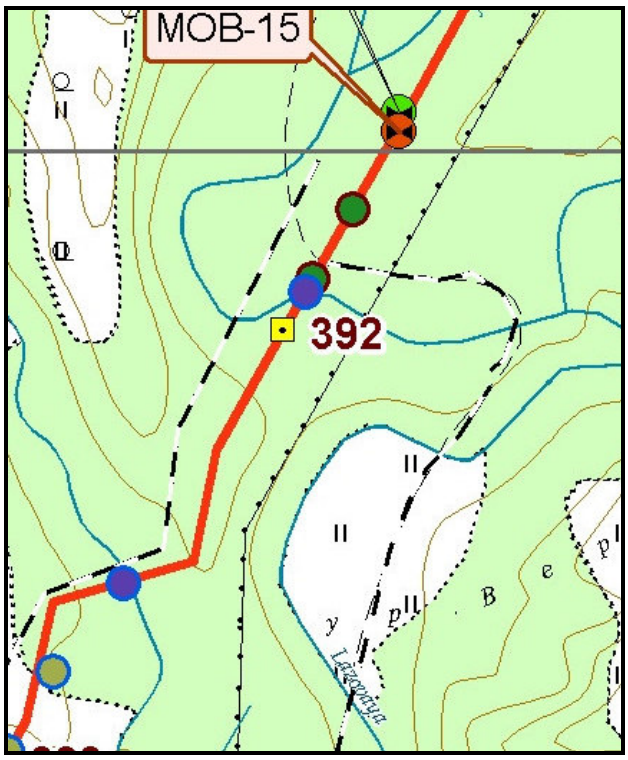


Photo 1 – View to the downstream showing stable banks with sediment deposits on the north bank and good vegetation cover..

Photo 2 – View to the south showing river bank and good RoW vegetation.

Photo 1 – View downstream showing Reno matting on the north and slightly undercut matting on the south. 	**Photo 2** – View to the north showing RoW with good vegetation cover. 

KP 393 Veyrchnaya River and RoW

The Veyrchnaya River crossing banks are protected with riprap and are covered with thick grass and other bushes. The crossing is immediately adjacent to a bridge on the access road. The bridge foundations are protected by large riprap, which abuts the RoW (Photos 1 and 2). The RoW on each side of the crossing has good vegetation cover and the slope on the east is protected by slope breakers (Photos 1 to 3).

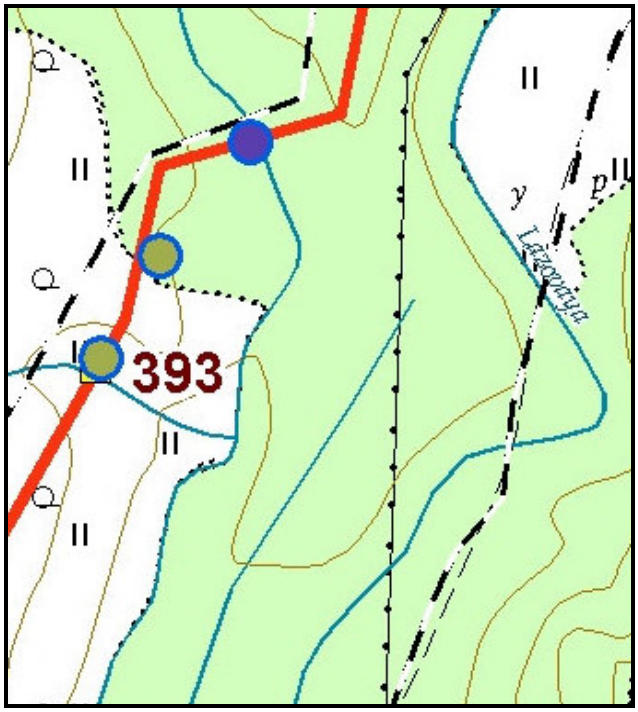


Photo 1 – View downstream showing banks with dense vegetation.

Photo 2 – View to the upstream showing dense vegetation on the banks and RoW. Also note the slope breakers on the slope.

Photo 3 – (to left) View to the west showing well vegetated RoW.

KP 394 Spokoyna River Crossing

The Spokoyna River crossing includes banks that are protected with large riprap and well vegetated.

The RoW is generally well vegetated, but a large side cut on the south side east of the crossing is mostly bare of vegetation and may need to be re-seeded.

During the visit there were fish observed in the river.

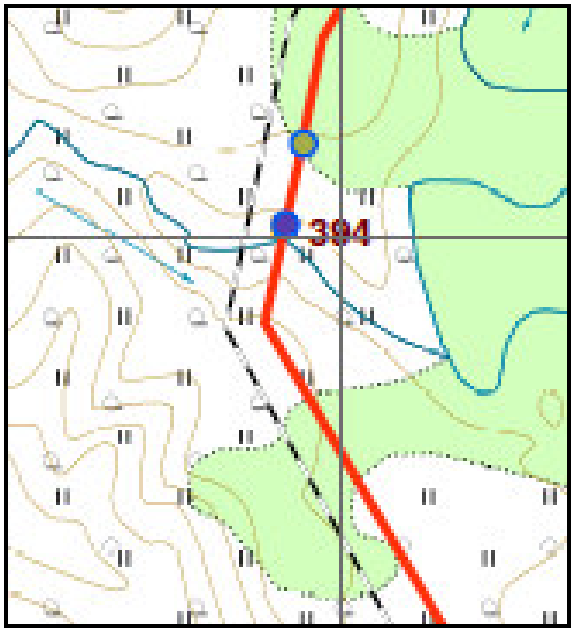


Photo 1 – (to left) View to the downstream showing large riprap on the east bank and bare side slope east of the river.

KP 395.8 Zvanka River Crossing and RoW

The Zvanka River crossing banks are protected by extensive Reno matting on each bank. The east bank matting is in good condition but the west side Reno mats are partially damaged and will need to be monitored and repaired when condition dictate (Photos 1 and 2).

The RoW east and west of the crossing is well vegetated with grass and other bushes.

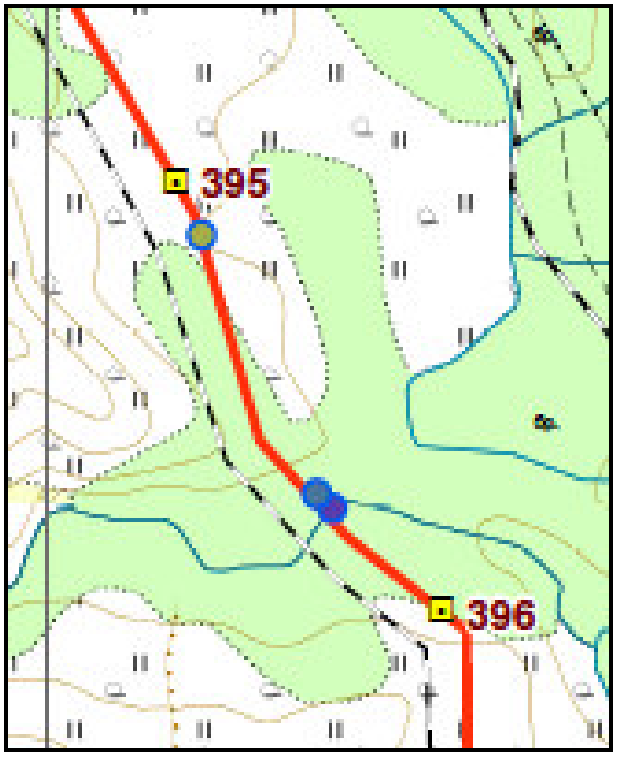


Photo 1 – View downstream showing damaged Reno matting on the west bank.

Photo 2 – View to the down stream showing Reno mats on both banks and well vegetated RoW.

	**Photo 3** – (to left) View to the west showing very well vegetated RoW.

KP 419 RoW

The RoW north of MOB 17 has generally good vegetation cover, which consists mostly of grass but also with a few Alder trees (Photos 1 and 2). The RoW in this area has an erosional side drain (which is quite deep and steep) on the south side of the RoW. This feature originates at the side of the RoW and could with time propagate uphill and onto the RoW, and therefore should be carefully monitored (Photo 3). In addition, in the same area there are few bald spots on the sandy RoW that show some erosional rills and should be re-seeded (Photo 4)

The RoW slope south of MOB 17 has good protection with many slope breakers. However, the slope has very poor vegetation cover and will need to be re-seeded (Photo 2).

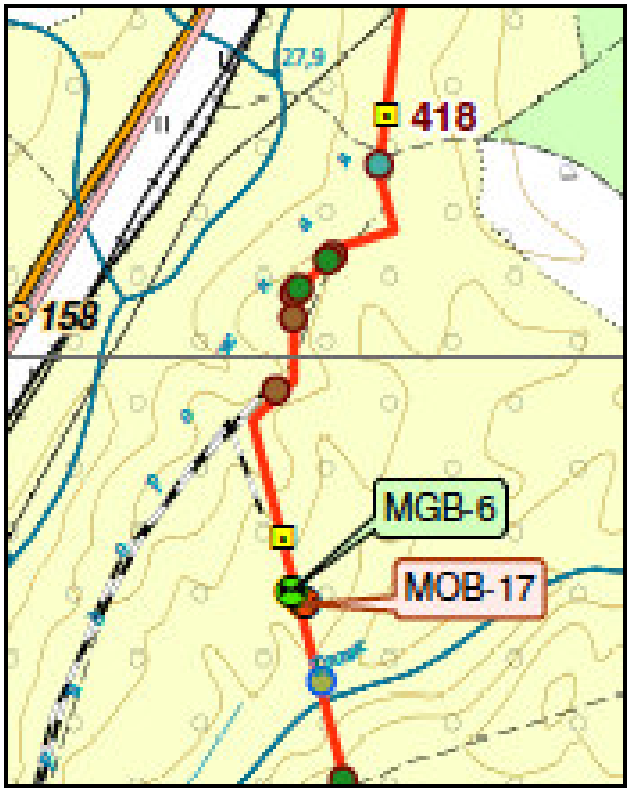
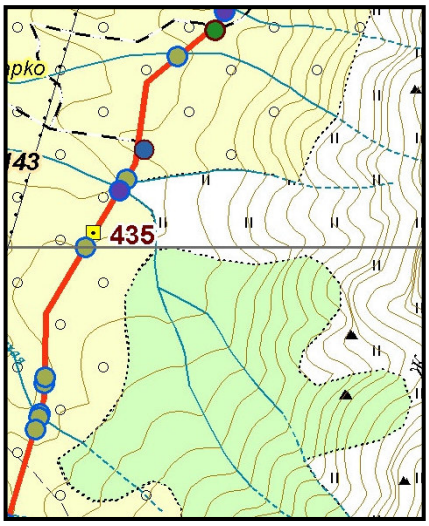


Photo 1 – View to the north showing good grass cover on the RoW.

Photo 2 – View to the south past MOB 17 showing RoW slope with good slope breakers but with poor vegetation cover.

Photo 3 – View of the south edge of the RoW with a deep erosional feature. 	**Photo 4** – View of one of several bold spots that developed erosional rills. 

KP 435 Travyanaya River



The riverbanks are protected on both sides of the river by Reno matting, and some vegetation is already establishing itself and coming up through the mats Photos 1 and 2).

The slopes on each side of the river have good vegetation cover. The south slope has a drainage channel running down the east side. The channel bifurcates towards the bottom and a separate unprotected channel splits off and flows across the RoW and into the river. This poses an erosion potential on the RoW and contributes unfiltered flow and sediments to the river itself (Photo 1 and 3).

Reno mats and gabions are used as erosion protection on small seasonal drainage channels which cross the RoW north of the access road on (Photo 4).

Photo 1 – View to the upstream showing Reno matting and vegetation

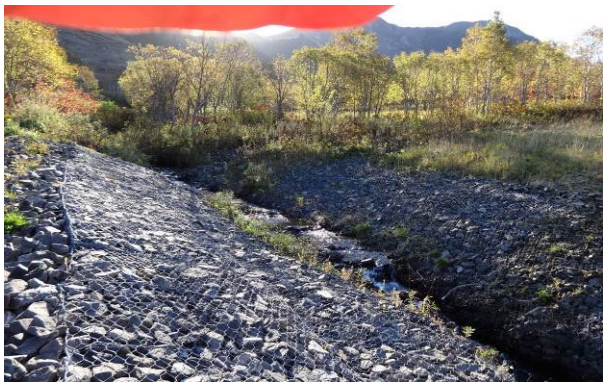


Photo 2 – View to the downstream showing Reno matting in condition

Photo 3 – View to the south across the river showing good vegetation of the RoW. Also note the split channel to the east of the RoW.

Photo 4 – Hard engineering of seasonal drainage channel and good vegetation cover

KP 444.3 Tikhaya River

The Tikhaya River flows adjacent to the railroad and both were crossed using a horizontal thrust boring method. This resulted in undisturbed river banks which can be seen in their natural state in Photos 1 and 2).

The RoW to the north and south of the river are well vegetated with grass and include some trees (Photos 2 and 3).

Fish spawning was observed during the visit.

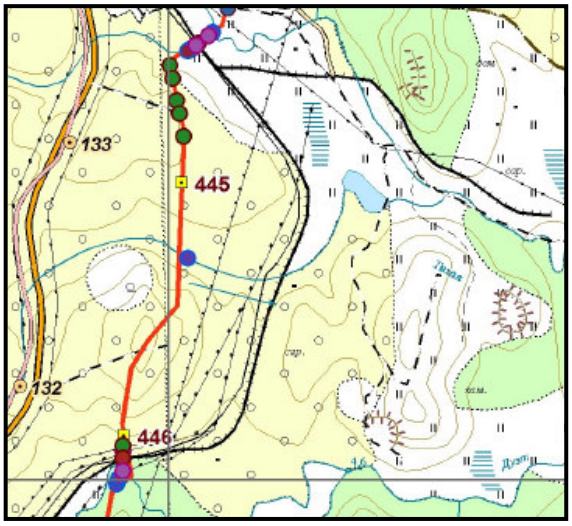


Photo 1 – View of riverbanks.

Photo 2 – View south across the river and railroad.

Photo 3 – (to left) View slope to the north of the crossing

KP 459.5 Manui River and wetlands

The Manui River crossing was found to be in generally good condition. The south bank is protected with gabions and Reno matting, and a gabion wall protects the north bank (Photo 1 and 2).

The river was visited using an access road from the north – the opposite side of the river from the wetlands area. The RoW north of the river is well vegetated but damage was observed on the RoW, which is reportedly due to the activities of the FOC contractor (Photos 3 and 4).

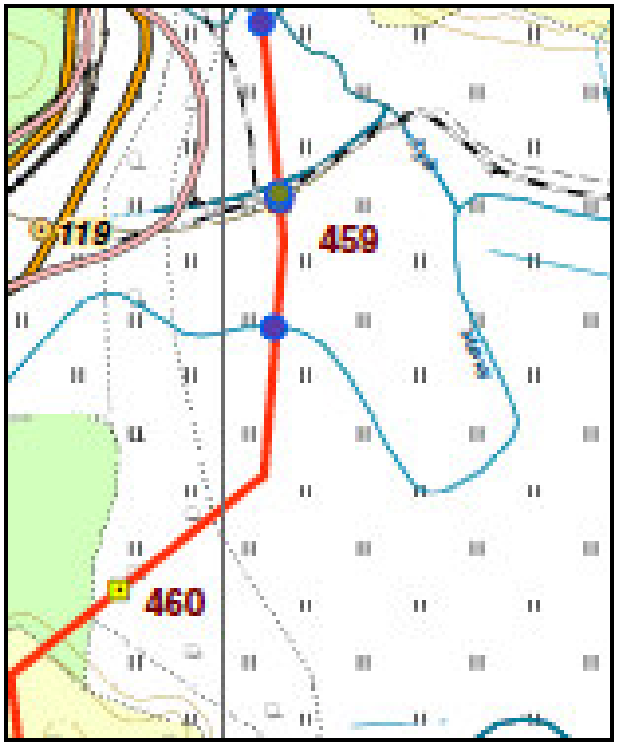
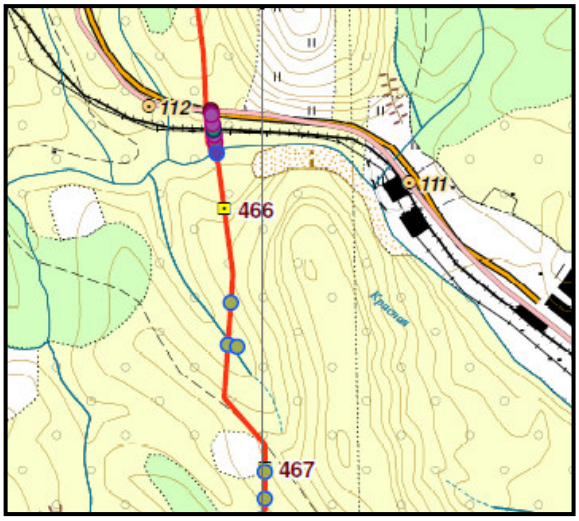


Photo 1 – View downstream showing gabion wall on the north bank

Photo 2 – View upstream showing gabions and vegetation on the bank.

Photo 3 – View to the north showing RoW with good vegetation and an access road made by FOC contractor 	**Photo 4** – Damage to vegetation on the RoW due to FOC contractor activities. 

KP 466 Krasnaya River and Slope



The Krasnaya River crossing has a long steep slope, which is protected by slope breakers on the south side and Reno matting protection on the banks. At the time of the visit, the slope appeared to be well vegetated and intact (Photo 1). However, (not visible on the photos) there is damage along the east side of the RoW due to the driving of a tracked vehicle – unknown by whom. Company should find out if this was done by a subcontractor (see similar situation described in the Manui River location).

The RoW on the north side of the river and north of the railroad and federal highway is also well vegetated (Photo 2).

Photo 1 – View to the south showing well vegetated slope and river crossing.

Photo 2 – View to the north showing well vegetated RoW.

KP 511.5 Ai River

The Ai river is situated in a wide, flat valley bordered by short but steep slopes. The river crossing appears in good condition and with very well vegetated banks (photo 1). The slope south of the river appears stable and well vegetated.

The river valley is well vegetated (photo 2 and 3) and the slope to the north (Sovietskoye ridge) is very well vegetated (Photo 4).

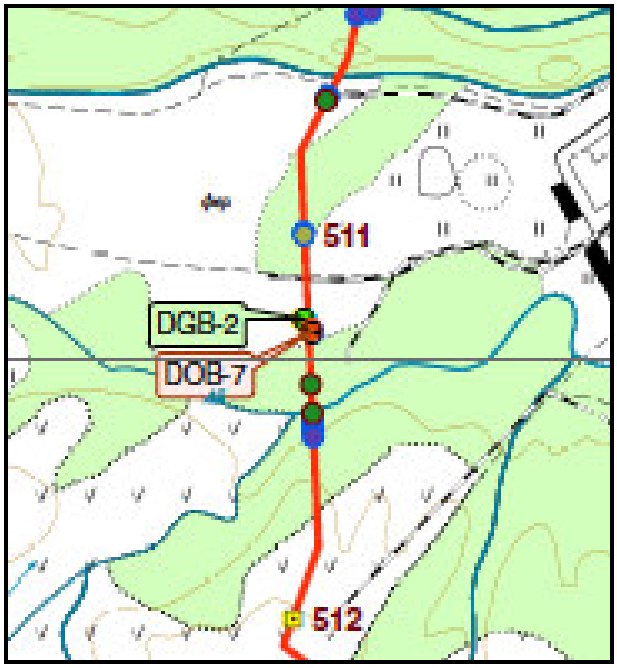


Photo 1 – View of re-vegetation of banks

Photo 2 – View of temporary bridge

Photo 3 – View across the river at RoW with running track leading to BVS

KP 530 Dolinsk Wetlands

The Dolinsk wetland was visited from a road crossing west of Dolinsk near DOB 10.

The RoW is very well vegetated both north and south of DOB 10. However, both sides contain trees and saplings of various sizes (Photos 1 and 2).

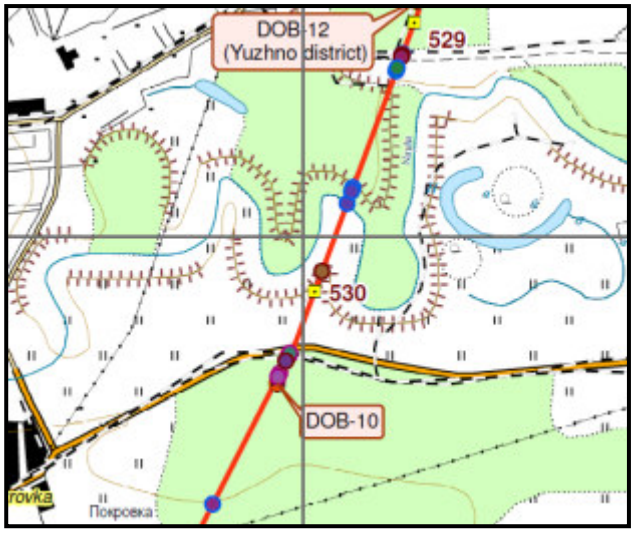


Photo 1 - View to the north along the RoW showing grass cover and trees in the background

Photo 2 – View to south from DOB 10 showing many trees growing on the RoW.

KP 570 Vladimirovskaya River

The banks at the river crossing are protected with Reno mats and with good vegetation cover. However, there is a non project road that runs on the RoW and crosses the river. This road is eroding the bank on both sides of the river and starting to impact the Reno mats (Photos 1 and 2)

Upstream from the crossing the river has tight meander that impacts the east edge of the RoW. The company protected the meander bank from further erosion with heavy riprap wall (Photo 3). This area should continue to be regularly monitored.

During the visit a construction activity was observed at the junction of the RoW with the public road. Reportedly this activity involved the installation of infrastructure for a new housing area.

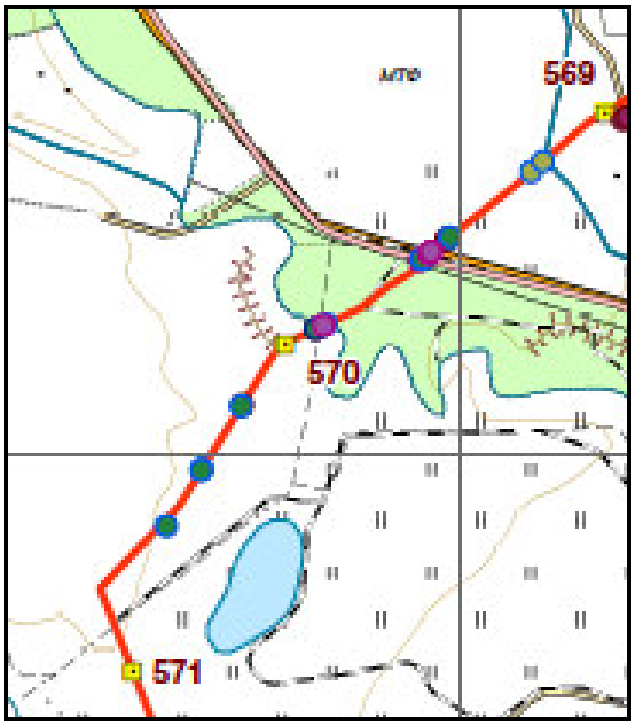


Photo 1 – View downstream showing well vegetated RoW and banks but also a road across the river.

Photo 2 – View to the upstream showing the south bank partially damaged by driving up the Reno mats.

Photo 3 – View upstream from the RoW showing bank protection with large riprap. 	**Photo 4** – View of the RoW to south of the access road showing well vegetated RoW and start of construction immediately adjacent to it. 

KP 573.5 Mayakovskaya River

The river crossing is protected with Reno mats and riprap on both riverbanks. The mats are generally in good condition, but some undercutting by the river on the southern bank will require monitoring and potential future repair (Photos 1 and 2).

The RoW south and north of the river crossing has good vegetation cover.

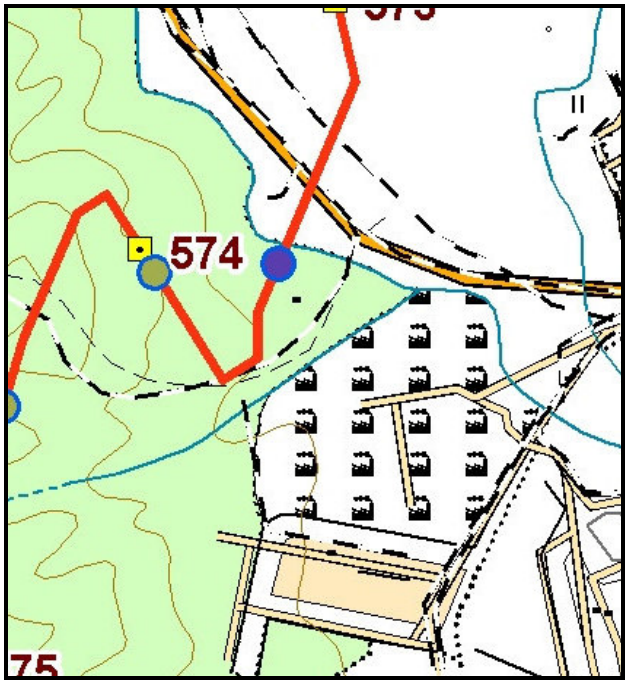


Photo 1 – View to the river banks showing protection by Reno mats and riprap

Photo 2 – View of the southern bank showing undercutting of Reno mats at mid crossing.

Photo 3 – View across the river at RoW with good vegetation cover

Photo 4 – View to the north from the river showing RoW with good vegetation cover

KP 595.5 Road Crossing

The RoW road crossing east of AOB 2 shows good vegetation on both side of the road.

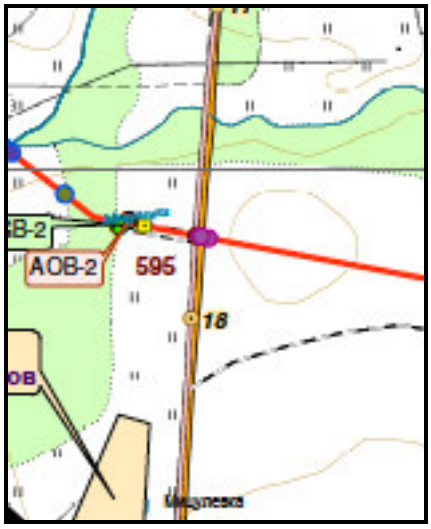


Photo 1 – View of the RoW to the west showing good vegetation cover to AOB 2 in the distance 	**Photo 2** – View of the RoW to the east showing good vegetation cover. 

KP 600.6 Pultovka River Slopes and RoW

The slopes to the river are steep to both the north and south. The slopes are protected by slope breakers, which are in reasonable condition. The RoW south of the river was re-seeded and fertilized, and shows good initial growth (Photo 1). The RoW to the north shows good vegetation cover (Photo 2).

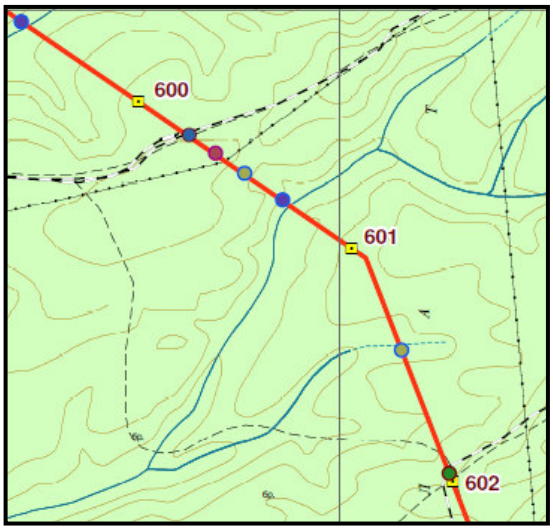


Photo 1 – View of the slopes leading to the river showing good vegetation cover.

Photo 2 – View of the RoW to the south showing good vegetation cover..

KP 607 – 609.5 RoW

The RoW between KP 607 and 609.5 was seen at three locations, namely KP 607, KP 608 and KP 609.5.

In all three locations vegetation cover was good and in at KP 607 the RoW was also protected with good slope breakers (Photos 1 to 6).

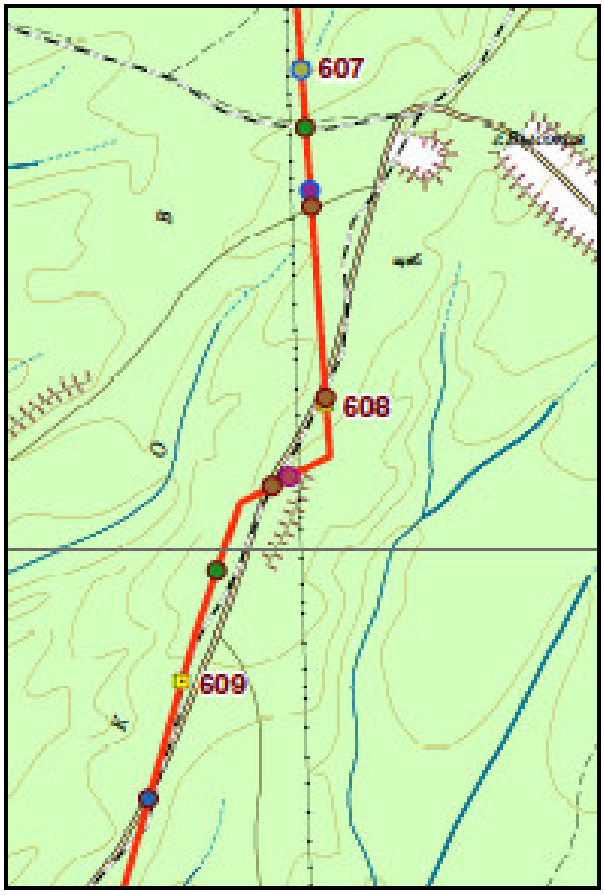


Photo 1 – KP 607 - View to the north of good vegetation cover and slope breakers

Photo 2 – KP 607 - view to the south with good vegetation cover

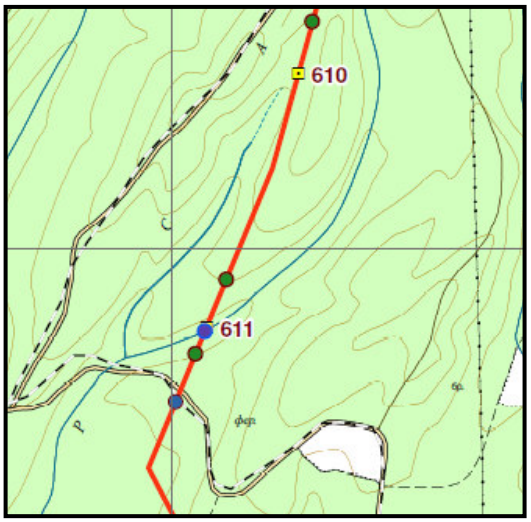
Photo 3 – KP 608 - View to the south

Photo 4 – KP 608 - View to the north

Photo 5 – KP 609.5 – View to the south direction

Photo 6 – KP 609.5 - View to the north

KP 611 RoW and R. Vodopyanovka



The Vodopyanovka River banks are protected by Reno matting, which appeared to be good condition. The slopes immediately above the banks are well vegetated (Photos 1 and 2). However, farther up the slope the vegetation cover is not as good as it is by the riverbanks. The southern slope is protected with slope breakers.

A side cut on the western edge of the RoW is partially vegetated. It shows improved vegetation cover since last year's visit but further improvement is still required (Photo 1).

The RoW north of the road crossing is well vegetated (Photo 3).

Photo 1 – View to the south showing the river crossing and slope protected with slope breakers.

Photo 2 – View to the south showing RoW with good vegetation cover.

Photo 3 – (to left) view the south showing RoW with good vegetation cover.

KP 614 - 615

The RoW north and south of the road crossing is very well vegetated and protected with slope breakers (Photos 1 and 2).

There is evidence that the area is used by vehicle traffic and tracks are clearly visible on the RoW. Consideration should be given as to how to inhibit these types of travel on the RoW.

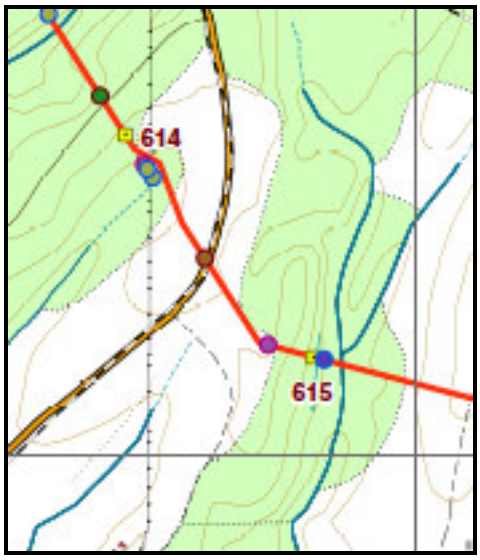


Photo 1 – View to the south showing good grass cover

Photo 2 – View to the north showing good grass cover.

KP 617 Korsakovka River and slopes

The Korsakov River was crossed using horizontal thrust bore which left the river banks largely un-impacted (Photo 1).

The slopes leading to the river are well vegetated and protected with slope breakers.

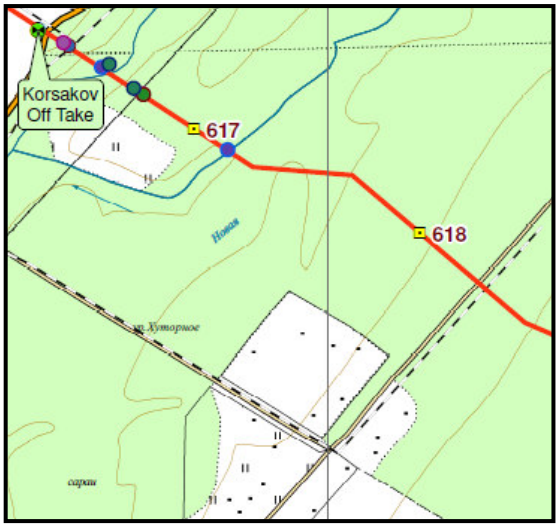


Photo 1 – View south across the river showing good vegetation cover and slope breakers on the slopes.

KP 622 Mereya River and Slopes

The Mereya River is crossed with two separated RoWs, one for the oil pipe and one for the gas pipe (Photos 1 and 2). Both crossings are protected with Reno matting. Although the mats are not in the best of condition, much vegetation growth has come up through the matting and the banks appear to be stable.

The RoW on adjacent to both river crossings is re-vegetating well (Photos 3 and 4), although some tree growth was identified that needs to be removed.

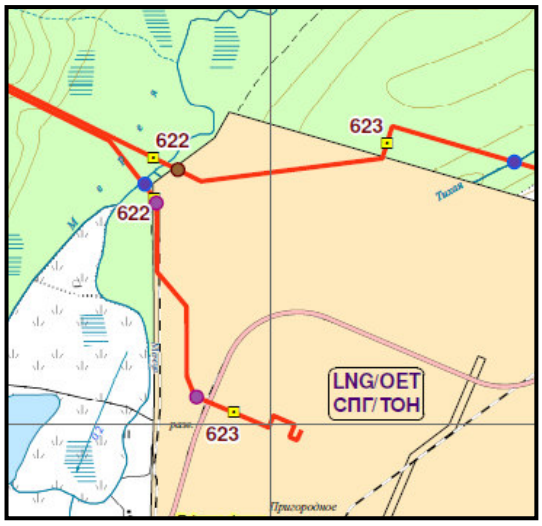


Photo 1 – View to north bank on oil pipe crossing

Photo 2 – View to the north from gas pipe crossing showing well vegetated RoW

Photo 3 – View to north bank on the oil pipe crossing

Photo 4 - View to the south showing well vegetated RoW